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***FACTORS AFFECTING VOLUME OF AGRICULTURAL CREDIT  
RECEIVED FROM SELECTED CREDIT INSTITUTIONS  
IN BANGLADESH\****

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**ABSTRACT**

This study, using a sample of 500 loanees from the Janata Bank, the Central Cooperative Bank, the Integrated Rural Development Programme (now the Rural Development Board) and the Bangladesh Krishi Bank, investigated into the factors affecting the volume of credit received. Out of the four factors namely, credit need, quantity of land, education and financial endowment of the loanees, the first three were found to have significant positive impact on the volume of credit received though for individual credit institution it varied. These factors explained 53 to 59 percent of the total variation in the receipt of credit.

**I. INTRODUCTION**

Money lenders and the indigenous credit institutions supply major portion of the credit requirement in the rural areas of Bangladesh. With the introduction of improved agricultural technology in the mid 1960's, inflow of institutional credit has increased. At present the Bangladesh Krishi Bank, six Nationalised Commercial Banks, the Central Cooperative Bank and the Bangladesh Rural Development Board (previously the Integrated Rural Development Programme) are involved in farm credit distribution. The lending policies and the credit programmes of these institutions are not uniform, each institution has some special requirement in respect of the eligibility of the borrower. An empirical investigation was conducted to see how different institutions attach weights to

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different factors in sanctioning credit. In section II, data source and analytical technique are discussed. Section III deals with results and discussion of the study. Conclusions are drawn in section IV.

## II. DATA SOURCE AND ANALYTICAL TECHNIQUE

Data used in this study were collected in 1976 by survey method from the farmers borrowing from the Bangladesh Krishi Bank (BKB), the Integrated Rural Development Programme (IRDP), and the Central Cooperative Bank (CCB) in six districts namely, Rangpur, Bogra, Pabna, Mymensingh, Tangail and Comilla ; and from the Janata Bank (JB) in only Rangpur district. Two to three villages under loan-concentrated unions of each district were surveyed and a total of 550 loanees from the selected villages were interviewed. Purposive random sampling procedure was followed in collecting data. With a view to keep the samples as representative of the village population, 30-40 percent loanees were randomly selected from the list of the loanees of each village. After careful scrutiny, 50 samples were excluded from the final analysis. Of the remaining 500 loanees, 160 loaned from the CCB, 145 each from IRDP and BKB, and 50 from JB.

The credit institutions consider different aspects of a loan applicant before sanctioning a loan. This study was designed to show how different factors influence the receipt of credit. On the basis of available literature, experience and *a priori* assumption regarding the mechanism of loan negotiation, the following factors were assumed to influence the volume of credit received by a farmer :

- |                              |                         |
|------------------------------|-------------------------|
| a. Self assessed credit need | b. Amount of land owned |
| c. Financial endowment       | d. Education            |

In order to analyse the extent of contribution of different factors in influencing the receipt of credit, the following model was chosen for the *i*th loanee :

$$Y = AX_1^{\beta_1} X_2^{\beta_2} X_3^{\beta_3} X_4^{\beta_4} E$$

Where Y = Amount of credit received

$X_1$  = Self assessed credit need

$X_2$  = Quantity of land owned

$X_3$  = Financial endowment

$X_4$  = Educational level of the applicant

$E$  = Error term. It takes account of such factors as social status, power base, reputation of a borrower which may have some influence on the volume of credit receipt.

Taking log on both sides and assuming log  $E$  to have a distribution with zero mean and constant variance, the regression of  $y$  and  $x$ 's from the above model may be estimated by :

$$\text{Log } y = \text{Log } a + b_1 \text{ Log } x_1 + b_2 \text{ Log } x_2 + b_3 \text{ Log } x_3 + b_4 \text{ Log } x_4$$

A priori expectation about the sign and size of the coefficients of the variables in the model are discussed below.

#### Land

Importance of land in determining volume of credit comes from two angles : firstly, credit is needed to pursue land based production activities and secondly, loan is required to be secured by mortgage of land. Therefore, there is reason to hypothesize that quantity of land under one's possession has an important influence on how much credit will an applicant be granted.

The nature of the lending policies of the IRDP and CCB are slightly biased toward small farm financing while BKB and JB do not have such emphasis. Therefore, the poor farmer should come under IRDP and CCB finance. Under the above circumstances  $b_2$  is expected to have positive sign for borrowers of all the institutions but in the case of BKB and JB borrower, the size and level of significance of the coefficient is expected to be higher.

#### Self assessed credit need

An individual is required to apply for an amount of loan. This amount is self assessed by the loan applicant. Normally the amount of loan applied for reflects the difference between total requirement for funds and amount the applicant can provide from internal sources. In most cases, the lending institutions assume that the applicant has over estimated his credit need or under estimated his own fund and grant an amount less than or equal to that applied for.

### Financial endowment

In addition to land, applicants are required to provide information on financial endowment in support of their credit worthiness. Income from all sources and value of power animals and agricultural implements are included in estimating financial endowment. However, this factor is given differing emphasis by the selected credit institutions. BKB and JB put substantial emphasis on this factor and they even get the figures verified by their field staff. IRDP and CCB put relatively less emphasis on this partly because they have some bias toward small farmers as a matter of policy and also because they often advance loan to a group rather than an individual.

### Applicant's education

Credit institutions of Bangladesh do not explicitly consider education of the applicant as a condition for advancing loan or determining the volume of loan. However, it is commonly believed that rural illiterates and lower educated people have little access to institutional credit. The historical preponderance of non-institutional credit helps explaining such belief. A hypothesis was, therefore, set with a view to testing the validity of such a belief.

Education has been ordinaly measured giving a score of 1 for no-education, 2 for one year schooling, 3 for two year schooling and so on. So defined, a proportional relationship between years of schooling of the applicant and volume of credit received is assumed. Such an assumption may not be fully realistic. Moreover, sometimes loan application of an illiterate applicant is dealt by his educated sons or relatives and this may influence the receipt of loan favourably. Alternatively, education levels could be aggregated as primary, secondary, higher and used as dummy variables. But the problem of aggregation might blurr any advantage that could be had from using dummies.

## III. RESULTS AND DISCUSSION

The relative contribution of different factors affecting the volume of credit received can be seen from the estimates of regression equation (Table 1). It is evident from the table that the self assessed credit need and quantity of land of the applicant are the most important variables. The coefficient of the variable 'self assessed credit need' has proper sign in all the cases and statistically significant for all institutions. The size of the coefficient is highest for IRDP borrowers implying that members of IRDP cooperative, because of their group responsibility, tend to ask for loan in accordance with their real needs.

The coefficient of the variable land is significant for all the credit institutions except IRDP. Since both CCB and IRDP emphasize small farm finance, coefficient for CCB was

TABLE 1. TEST OF REGRESSION COEFFICIENTS AND REGRESSION LINE

Institution	Constant Log a	Self asse- ssed credit $b_1$	Land $b_2$	Financial endowment $b_3$	Education $b_4$	R <sup>2</sup>	F	N
Jenata Bank	3.327	.4486* (3.19)	.2552* (2.37)	.0131 (.274)	.0148 (.2132)	.53	12.46*	50
Central Cooperative Bank	2.706	.4364* (8.24)	.4239* (6.90)	-.0272 (.690)	.1010** (2.14)	.55	46.31*	160
Integrated Rural Development Programme	2.025	.7221* (11.99)	.0931 (1.80)	-.1112** (2.16)	.132** (2.30)	.53	53.46*	145
Bangladesh Krishi Bank	5.119	.1165* (3.53)	.3640* (8.50)	.034** (2.51)	-.0269 (.878)	.59	49.92*	145
All Institutions	2.530	.5012* (16.17)	.2667* (8.81)	-.0105 (0.58)	.0652** (2.32)	.54	142.74*	500

Notes : Figures in the parentheses represent t values

\*Significant at .01 level      \*\*Significant at .05 level

also expected to be low and insignificant. The coefficient of land for CCB is not only significant but its size is the highest among all the credit institutions. The coefficient of land for CCB and BKB imply that loans were advanced to the people who have relatively larger land holdings.

The borrowers of BKB had average size of holding of 9.14 acres, compared to 4.33 acres for CCB, 4.04 acres for JB and 3.88 acres for IRDP. This clearly suggests that the beneficiaries in case of BKB were of larger farm size groups. The beneficiaries of other institutions were of mostly medium size groups. This is further confirmed by Gini ratio estimated from distribution according to size of farms in the country and of the loanees in the sample (Table 2, col. 1). However, Gini ratios estimated from distribution according to number of loanes and amount of loan show lesser inequality implying that loanes of different size classes obtained loan nearly in proportion to their number.

TABLE 2. GINI RATIO FROM SIZE DISTRIBUTION OF FARMS, LOANEEES AND LOANS FOR SELECTED CERDIT INSTITUTIONS

Institutions	Gani ratio based on	
	Farm in the country and loanee in the sample	Number of loanee in the sample and amount of loan obtained
Janata Bank	.51	.18
Central Cooperative Bank	.62	.20
Integrated Rural Development Programme	.52	.10
Bangladesh Krishi Bank	.88	.18

Financial endowment was a positive significant variable only in case of BKB implying that BKB puts substantial emphasis on financial endowment in deciding the volume of loan to be advanced. The non-significance of this variable for other lenders may be more apparent and might be due to error in measurement of the variables or due to high inter-correlation (Table 3).

TABLE 3. CORRELATION MATRICES OF INDEPENDENT VARIABLES FOR CREDIT INSTITUTIONS

	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>		X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>
	Janata Bank					Central Cooperative Bank			
X <sub>1</sub>	1.00					1.00			
X <sub>2</sub>	.59	1.00				.34	1.00		
X <sub>3</sub>	.50	.54	1.00			.21	.43	1.00	
X <sub>4</sub>	.09	.37	.32	1.00		-.03	0.04	.08	1.00
	Integrated Rural Development Programme					Bangladesh Krishi Bank			
X <sub>1</sub>	1.00					1.00			
X <sub>2</sub>	.25	1.00				.51	1.00		
X <sub>3</sub>	.25	.46	1.00			.24	.36	1.00	
X <sub>4</sub>	.10	.04	-.02	1.00		0.06	-.04	-.04	1.00

Education was found to have a positive and significant influence on volume of credit received in case of IRDP and CCB borrowers. For BKB and JB borrowers, education appears to have a negative though insignificant influence. The problems of quantifying the education variable and shortcomings of the way it has been measured have been mentioned earlier. The improper signs and its non-significance might be due to those shortcomings.

Taken all institutions together, the variable land, self assessed credit need and education have been found to have significant positive influence on the volume of credit receipt.



The specified variables explain 53 to 59 percent of the total variation in the volume of credit receipt. This means that there are other important variables influencing volume of credit receipt. The importance of the specified variables also vary among the lending institutions.

#### IV. CONCLUSIONS

The result of the study leads to conclude that the lending institutions considered the quantity of land, credit need, financial endowment and education of its borrowers in sanctioning the volume of credit. The weights attached to these factors by each of the institutions varied substantially. The four factors mentioned above explained 53 to 59 percent of the total variation in the receipt of credit.

Financial endowment though presumed to have important bearing, has virtually not turned up so except for BKB. The non-significance and the improper signs of the coefficients of financial endowment and education in some cases might be because of the problem of measurement or due to intercorrelation. Moreover, some degree of institutional discretion in the form of using subjective judgement in loan sanction might have contributed to bringing this kind of relationship in loan transaction.