Research Article **Open Access**

The Role of Commercial Banks in Providing Agricultural Credit (Factors Responsible for Overdue Position)-A Study with Reference to Tamil Nadu in India

Selvaraj N* and Palajikumar P

Assistant Professor of Commerce, Saraswathi Narayanan College, Madurai, 625022, Tamil Nadu, India

Abstract

Agricultural sector occupies a key position in the Indian economy. It provides employment to about 65 per cent of the working population of India. Around one-quarter of India's National income originates from the agricultural sector. It is imperative that the problems of farmers are addressed with a sense of urgency. Agriculture being a State subject, the bulk of public investment in agriculture takes place at the level of States and the Central Government supports the States as a catalyst. On the basis of difference in the socio-economic characteristics of the borrowers, linear discriminant analysis was used to classify the borrowers into defaulters and non-defaulters and again the defaulters were classified into willful defaulters and non-willful defaulters. The exact amount of non-performing assets and over dues percentage wise as well as absolute amount-wise are going on increasing. The bad and doubtful debts, funds blocked in suit-filed accounts and decreased debt and funds in the hands of willful defaulters are showing an upward trend. Most of the borrowers are non-willful borrowers in selected areas. Thus it could be concluded that the marginal farmers had performed well not only in the prudent investment they had made on the financial and physical assets, but also in the better and more efficient utilization of factors and inputs in the study area. Agricultural credit, particularly commercial bank credit, promoted agricultural inputs to meet their various day-to-day agricultural expenses. Besides it had also motivated them to adopt intensive methods of cultivation. It could also be inferred that the recovery performance, which was found to be better in the study area, had in its turn induced the effective functioning of the Lead Bank in the study area.

Keywords: Agriculture; Overdues; Linear discriminant analysis; Commercial banks

Introduction

Agricultural sector occupies a key position in the Indian economy. It provides employment to about 65 per cent of the working population of India. Around one-quarter of India's National income originates from the agricultural sector. It is imperative that the problems of farmers are addressed with a sense of urgency. Agriculture being a State subject, the bulk of public investment in agriculture takes place at the level of States and the Central Government supports the States as a catalyst.

Like other industries, agriculture also requires capital. Small farmers and marginal farmers need credit since their capital is locked up in their loans and stock. They need funds to meet their operational expenses. Their credit need is high at the time of crop season. Millions of farmers are depending upon marginal and subsistence farming. Due to low yield, they are not in a position either to have 'surplus' for distribution or at times even to continue the production process successfully and economically. Due to these reasons they depend mostly on credit even for normal agricultural operations and have to pay a part of their income by way of interest later.

The problems and requirements for credit arise largely from the seasonal cycle of agricultural production which is superimposed on a largely perpetual and steady pattern of continuous consumption. Because of the marked contrasts in season of production and consumption pattern, the savings and credit demand of this process may be substantially relative to net income. When it is for stimulating the tempo of agricultural production through new production technology, it is necessary that the farmers must be provided with adequate and timely credit. New production technology includes intensive agriculture and modernization. It includes the use of high yielding variety of seeds, chemical fertilizers, creation of irrigational facilities, plant protection measures and introduction of farm machinery like tractors and combined harvesters.

There are many characteristics like consumption, expenditure, repaying capacity, family size, dependency ratio, occupational status, intensity of cropping, amount of loan borrowed from the financial institutions and annual income from farming which influence the repayment performance of loans taken by farmers. In this study, characteristics responsible for overdues are taken into account. The selected socio-economic characteristics are total land holdings in acres, operational size of land holdings in acres, level of education, caste, borrowers age in years, percentage of area under High Yielding Varieties (HYV), cropping intensity in percentage, percentage of income from farming, annual per capita family consumption expenditure per acre, fertilizers used in rupees, amount of loan borrowed from bank, and working capital used.

Some of these characteristics are qualitative and some others are quantitative in nature. Qualitative characteristics are quantifiable for calculation in this study. Some selected characteristics are more

---

important in determining the repayment capacity and some others are not like that. In this paper, identification of characteristics, which are having more power to decide the overdues is analysed.

The present study proposes to highlight the agricultural credit extended by the commercial banks in Tamilnadu and analyse the repayment performance of the borrowers. The commercial banks aim at intensive coverage of selected areas for meeting the priority sector credit needs, especially the agricultural credit requirements and ensuring effective supervision over the use of loans.

Bedi and Saxena [1] had found that the inadequate and untimely provision of credit had influenced adversely the responses of the Punjab farmers towards improved agricultural practices.

Based on the experience of the U.S.A. and other developed countries, Pattle [2] had argued, that where capital markets were not well – developed, the government must provide, at least in the initial years, most of the money required for the agricultural credit systems. There are many studies in which the importance of institutional credit in agriculture, in the context of new technology and agricultural development, is discussed. Dasgupta [3] concentrates mainly on technological change in relation to productivity by taking into account the changing class relations in the historic context. She draws the conclusions that the technical change will have a positive contribution but it would depend upon the horizontal and vertical spread of technology. She further observes that there is little contribution of the new technology to improve the overall living conditions, and the quality of life in the countryside. In future, the effect of new technology on these aspects will depend: (i) on the public policies to regulate labor and land market; (ii) on the control of choice of factor combination on larger farms; and (iii) on the investing part of the surplus originating in agriculture.

Analytical Frame Work Methodology

Adopted for the collection of data, method of analysis and tools of analysis. Designing a suitable methodology and the selection of proper analytical tools are important for a meaningful and useful analysis in any research undertaking. In this section, an attempt has been made to describe the methodology which includes the reasons for the choice of study area, sample design, period of study, method. Primary data were used for the present study. A reconnaissance survey was conducted by meeting the farmers, particularly paddy cultivators, so that the researcher could get fully acquainted with various stages of agricultural operations, various kinds of investments made by farmers and the actual farming conditions. The selected farmers were contacted in person and the objectives of the study were clearly explained to them, and their co-operation was secured. The details regarding the characteristics of the sample farmer, his farm structure, the size of his holding, his cropping pattern, his investment pattern in farm assets, his costs and returns, the net incomes received by him and the other aspects relating to the present study were collected from each of the sample farmers through the personal interview method [4].

Methods of analysis

Keeping in view the objectives of the study, the 600 sample beneficiaries were stratified into two categories, namely marginal and small farmers. Out of the 600 sample farmers, 232 sample farmers (38.67 per cent) and the remaining 368 sample farmers (61.33 per cent) are under the category of large and small farmer groups respectively. Further, the sample farmers were post stratified into non-defaulters and defaulters. Out of the 232 large farmers, 136 (58.52 per cent) belong

to non-defaulter group and the remaining 96 (41.38 per cent) belong to defaulter group. In the small farmer group, out of 368 sample farmers, 156 (42.39 per cent) and 212 (35.33 per cent) belong to non-defaulter and defaulter groups respectively [5].

Credit institutions serving agricultural-sector needs developed in three phases. In the first phase, which lasted from 1947 to 1969, cooperative agencies were the primary vehicle providing credit. In the second phase, after nationalization of banks in 1969, commercial banks were assigned a role in providing agricultural credit but were supplementary to cooperatives (see Fiscal Administration, ch. 6). In the last phase starting in 1975, regional rural banks were established to provide credit. In the 1990s, agricultural credit is provided through a multiagency approach in the form of cooperatives, commercial banks, and regional rural banks. These institutions have gradually ensured that credit reaches the most remote agricultural and rural areas [6].

On the basis of difference in the socio-economic characteristics of the borrowers, linear discriminant analysis was used to classify the borrowers into defaulters and non defaulters and again the defaulters were classified into willful defaulters and non-willful defaulters [7-12].

The information collected from bank and the borrowers indicates the reasons and effects of overdues.

Deciding factors of repayment capacity of default borrowers was determined by

$$R = Y - [C + L + K]$$

Where,

R = Repayment capacity of the borrower (in Rs.)

Y = Total income from farming and other source (in Rs.)

C = Total farm and off farm expenses (in Rs.)

L = Pre – existing liabilities to be met within a year (in Rs.) and

K = Risk taking allowance to the farmer borrowers (in Rs.)

15 Percent of total income

Linear Discriminant Function Analysis: On the basis of difference in the socio economic characteristics of the borrowers, linear discriminant analysis was used to classify the borrowers into defaulters and non defaulters and again the defaulters are classified into willful defaulters and non-willful defaulters. The distance between two groups of borrowers was calculated by Mahalanobis D^2 test [13-17]. Socio-economic characteristics and their significance were tested as a first step of analysis to make sure whether these groups of borrowers (defaulters and non defaulters or willful defaulters and non-willful defaulters) are significantly different from each other as regards the means of the characters under study.

Discriminant function is stated here

$$Z = \sum_{i=1}^{12} l_i . x_i$$

$Z = li\, xi + l2\, x2 .... + ln\, xn$

$xi (i = 1, 2, 3, ... 12)$

$di (i = 1, 2, 3, ... 12)$

where,

Z = Total sum of discriminant score (it may be the score for

non-defaulters and defaulters or willful defaulters and non-willful defaulters)

x_i = The value of ith characteristics

l_i = Total land holdings in acres (in own land, leased in, leased out land are taken into account)

x_2 = Operational size of holdings in acres (cultivable land alone)

x_3 = Level of education

Score for illiterate = 1,

Primary education = 2,

High/Higher Secondary education = 3,

Technical education = 4,

Graduation and above = 5

x_4 = Caste

Score for SC = 1, Other than SC = 0

x_5 = Borrower's age in years

x_6 = Percentage of area under High Yielding Varieties (HYV)

$$= \frac{\text{Total operated area under HYV's}}{\text{Total operated area}} \times 100$$

X_7 = Intensity of cropping in percentage

$$= \frac{\text{Total annual cropped area in acres}}{\text{Total land holdings in acres}} \times 100$$

x_8 = Percentage of income from agriculture

$$= \frac{\text{Net income from agriculture}}{\text{Total income}} \times 100$$

x_9 = Annual per capita family consumption expenditure (in Rs.)

$$= \frac{\text{Total consumption expenditure}}{\text{Family size}} \times 100$$

x_{10} = Per acre fertilizers used (in Rs.)

x_{11} = Amount of loan borrowed from the bank, and

x_{12} = Working capital used (in Rs.) per acre

(Seeds, weedicides, fungicides and pesticides are included)

185 defaulters and 115 non-defaulters were selected for the study. Among 185 defaulters, there were 73 willful defaulters and 112 non-willful defaulters.

The socio economic characteristics which are considered here are shown in the matrix notation.

where,

$$S_1 = d$$

$$Sl = \begin{bmatrix} S_1 \, S_{12} \, ... S_{1K} \\ S_{21} \, S_{22} \, ... S_{2K} \\ S_{K1} \, S_{K2} \, ... S_{KK} \end{bmatrix}_{12 \times 12} \qquad l = \begin{bmatrix} l_1 \\ l_2 \\ l_3 \\ l_4 \end{bmatrix}_{12 \times 1}$$

$$d = \begin{bmatrix} d_1 \\ d_2 \\ . \\ . \\ d_K \end{bmatrix}_{12 \times 1}$$

where,

l_k = Discriminant function's co-efficient vector

$S_{k \times k}$ = Pooled dispersion matrix, and

d_k = Vector of difference in group means

The variable considered is sufficiently discriminating between the groups of defaulters and non-defaulters or willful defaulters and non-willful defaulters are tested for its significance. Distance between two groups are measured with the help of Mahalanobis D^2 statistics. After transformation this D^2 statistic becomes an F statistic which is then used to see whether the two groups are different from each other. In the present analysis.

$$S_{1,1} = \frac{1}{N_a + N_b - 2} \left[\sum X_1^2 - \frac{\left(\sum X_1 \right)^2}{N_a} + \sum X_1^2 - \frac{\left(\sum X_1 \right)^2}{N_b} \right]$$

$$S_{1,2} = \frac{1}{N_a + N_b - 2} \left[\sum X_1 X_2 - \frac{\left(\sum X_1 \right)\left(\sum X_2 \right)}{N_a} + \sum X_1 X_2 - \frac{\left(\sum X_1 \right)\left(\sum X_2 \right)}{N_b} \right]$$

where,

N_a = Number of non-defaulters or non-willful defaulters, and

N_b = Number of defaulters or willful defaulters

To work out the contribution of each character to the distance created $(Z_a - Z_b)$ by the two population of the defaulter and non-defaulter or willful defaulter and non-willful defaulter, Mahalanobis D^2 was worked out as under and various steps involved in this analysis.

Step 1: All possible combinations of the twelve socio-economic characteristics pooled covariance matrix were obtained as follows:

$$\frac{\sum \left(X_i \, X_k \right) a + \sum \left(X_i \, X_k \right)_b}{N_a + N_b - 2}$$

where,

$\sum \left((x_i \, x_k)_a \right.$ is the sum of products between any two characteristics (i and k) in non-defaulters or non-willful defaulters groups.

$\sum \left((x_i \, x_k)_a \right.$ is the sum of products between any two characteristics (i and k) in defaulters or willful defaulters groups.

Step 2: The value of the diagonal cells (pooled sum of squares) were:

$$\frac{\sum \left(X_1^{\ 2} \right)_a + \sum \left(X_1^{\ 2} \right)_b}{N_a + N_b - 2}$$

where,

$(x_1^2)_a$ is the sum of squares of any particular characteristic (i) in the non defaulters or non-willful defaulters groups.

$(x_1^2)_b$ is the sum of squares of any particular characteristics (i) the defaulters or willful defaulters groups.

Step 3: The inverted matrix (c_{ik}) was obtained.

Step 4: The difference between means of the two samples for variables x_1, x_2, ……. X_{12} called d_1, d_2, d_3 …… d_{12} was obtained by unidimensional subtraction of mean score of non-defaulters or non-willful defaulters group.

$\left[\left(\overline{X_1} \right)_a \right]$ from the mean score of defaulters or willful defaulters groups $(x_2)_b$ on the same dimension. From these values, a matrix for the product of mean difference (d_1,d_2) was obtained.

Now with the help of c_{ik} and $d_i d_k$ matrices, the value of D² based on all the twelve characteristics was obtained.

$$D^2 = \sum_{i=1}^{12} \sum_{k=1}^{12} c_{ik}\, d_i\, d_k$$

Step 5: D² was transformed into F* statistics and D² significance was tested with the help of F* statistics.

$$F^* = \frac{N_a N_b (N_a + N_b - p - 1)}{p(N_a + N_b)(N_a + N_b - 2)} D^2$$

where,

P is the number of characteristics. F* was tested for the significance with (P) and $((N_a + N_b - p - 1)$ degrees of freedom.

Step 6: The individual characteristics percentage contribution to the total distance was measured and it was calculated as follows:

(i) For each socio-economic variables x_1, x_2,….. x_{12} the difference between means of the two samples are called d_1,d_2,……. d_{12}. It was derived from the mean score of non-defaulters or non-willful defaulters groups $(x_1)_a$ minus the mean score of defaulters or willful defaulters groups $(x_1)_b$.

(ii) Co-efficients and the difference between the means of two samples were multiplied and

(iii) The products of co-efficients and difference between means of two samples were multiplied by hundred and then divided by D² values. It gives the percentage contribution of individual characteristics to the total distance.

Socio Economic Characteristics

Table 1 presents the selected socio-economic characteristics along with their mean values and their differences both for defaulters and non-defaulter groups.

The recovery of advances by banks has assumed greater importance in view of alarming increase in overdues. The management of the banks is interested in keeping the overdues at the minimum possible level. The problem of non-repayment of the bank loan leads to mounting overdues which is a serious problem. Proper identification of a borrower as good or bad is made according to his resources and his repaying capacity. Therefore, the present study has been conducted to provide such guideline that help to identify the perspective borrower into good or bad borrower with the help of selected socio-economic characteristics.

Since the inception of central economic planning in 1950, the government has favored cooperative societies as a channel for providing credit and as a means of broadening the experience of villagers in such activities as marketing, community farming, and consumer purchasing. Credit societies were the first to be established and continue to be the most extensive and important group of cooperatives.

Identification of characteristics and results of discriminant analysis

The aim of the discriminant function analysis used here is to classify the borrowers into defaulters and non-defaulters and further defaulters are subdivided into willful defaulters and non-willful defaulters by a set of independent variables.

Discriminant function for defaulters and non-defaulters

For defaulters and non-defaulters, the selected twelve characteristics data are fitted in discriminant equation. This is (Equation 1).

$$\begin{aligned} Z = &-1213 X_1 + 3.1991 X_2 + 0.0136 X_3 \\ &-1.0026 X_4 - 0.0299 X_5 + 0.25 X_6 \\ &+ 0.0143 X_7 - 0.0028 X_8 + 0.0081 X_9 \\ &+ 0.0135 X_{10} - 0.0016 X_{11} + 0.0018 X_{12} \end{aligned} \tag{1}$$

Discriminant function is applied to the twelve characteristics to see whether these characteristics discriminate the two groups significantly or not. The difference in the mean value of two groups for most of the characteristics turned out to be significant implying that these characteristics are important variables that influence the repayment

Sl. No.	Socio Economic Characteristics of the Borrowers	Mean		Differences
		Non-defaulters	Defaulters	
1.	Size of holding in acres (X_1)	3.1216	3.1816	-0.060
2.	Operational size in acres (X_2)	2.9516	3.1922	-0.2406
3.	Literacy (X_3)	1.4469	1.1762	0.2707
4.	Caste (X_4)	0.9961	0.8461	0.1500
5.	Age of the farmer (X_5)	39.1561	39.4616	-0.3055
6.	Percentage of area under HYV's to the total operated area (X_6)	25.6961	23.3911	2.3050
7.	Cropping intensity in percentage (X_7)	141.2411	127.6141	13.627
8.	Percentage of income from farming to the total income (X_8)	70.7716	59.2415	11.5301
9.	Per capita annual consumption expenditure in rupees (X_9)	2941.4213	2566.1125	375.3088
10.	Per hectare fertilizer used in rupees (X_{10})	833.6211	907.1416	-73.5205
11.	Size of the loan (X_{11})	8185.16	8169.2114	15.9486
12.	Working capital in rupees per hectare (X_{12})	431.2413	466.2010	-34.9597

Table 1: Mean Values and their Differences with Regard to the Socio-Economic Characteristics of the Borrowers, Defaulters.

Sl. No.	Socio-economic Characteristics	Co-efficient (lk)	Mean Differences (dl)	Coefficient x Mean Differences (lk x d1)	Percentage	t-Values
1.	X_1	-0.1213	-0.060	0.0073	0.4094	0.7919
2.	X_2	3.1991	-0.2406	-0.7697	-43.1688	1.2243
3.	X_3	0.0136	0.2707	0.0037	0.2075	3.7561*
4.	X_4	-1.0026	0.1500	-0.1539	-8.4347	1.1773
5.	X_5	0.0299	-0.3055	-0.0091	-0.5104	1.0842
6.	X_6	0.2514	2.3050	0.5795	32.5014	0.7762
7.	X_7	0.0143	13.627	0.1949	10.9310	2.9343*
8.	X_8	-0.0028	11.5301	-0.0323	-1.8116	0.9315
9.	X_9	0.0081	375.3088	3.0400	170.4992	3.0143*
10.	X_{10}	0.0135	-73.5205	-0.9925	-55.6646	0.5949
11.	X_{11}	-0.0016	15.9486	-0.0255	-1.4307	0.0479
12.	X_{12}	0.0018	-34.9597	-0.0629	-3.5278	3.7249*
				1.783	100.000	

*Indicates the difference is significant at 5 per cent level.

Table 2: Borrowers' Percentage Contribution of Individual Characteristics to the Total Distance Measured.

Sl. No.	Socio-Economic Characteristics	Co-efficient (lk)	Mean Differences (d1)	Co-efficient X Mean Differences (lk X d1)	Percentage	t-value
1.	X_3	0.5537	0.2707	0.1499	1.7352	2.7814*
2.	X_7	0.6348	13.627	8.6504	100.1366	2.8216*
3.	X_9	0.0044	375.3088	1.6702	19.3342	2.8488*
4.	X_{12}	0.0524	-34.9597	-1.8319	-21.2060	2.4731*
		9.5725			100.0000	

*Significant at 5 per cent level.

Table 3: Percentage Contribution of Individual Characteristics to the Total Distance Measured.

of loans. D^2 and variance ratio are worked out to be 1.147156 and 1.579161 respectively. So the discriminant function has significantly differentiated the borrowers, that is the selected twelve characteristics considered together are useful in classifying the borrowers into defaulters and non-defaulters.

Percentage contribution of individual characteristics to the total distance of the two groups of borrowers by discriminant function is calculated in Table 2.

The calculated 't' values given in Table 2 indicates that mean differences of variables X_3, X_7, X_9 and X_{12} of the two groups of borrowers are significantly different. Other characteristics X_1, X_2, X_4, X_5, X_6, X_8, X_{10} and X_{11} contribution to the distance is very minimum. So the characteristics X_3, X_7, X_9 and X_{12} are the major ones and these characteristics discriminate borrowers into defaulters and non-defaulters. These characteristics alone can discriminate when the borrower is tested through the equation. Other characteristics X_1, X_2, X_4, X_5, X_6, X_8, X_{10} and X_{11} have therefore, been excluded in the new equation for further analysis.

The discriminant function is then applied to the remaining four characteristics to see whether these characteristics discriminate the two groups or not. The new discriminant equation is given below:

$$Z = +0.5537\,X_3 + 0.6348\,X_7 + 0.0044\,X_9 + 0.0524\,X_{12} \tag{2}$$

From the new discriminant function the major characteristics considered together are sufficiently discriminating borrowers into two groups. This implied that the level of education (X_3), intensity of cropping in percentage (X_7), annual per capita family consumption expenditure (X_9) and working capital used in rupees per acre (X_{12}) of defaulters borrower are significantly different from non-defaulter

borrowers. The defaulters' major characteristics do not resemble the non-defaulters' major characteristics.

The four sufficient characteristics percentage contribution to the total distance measured is calculated and has been given in Table 3.

From the Table 3 it has been revealed that intensity of cropping in percentage (X_7) is the characteristic in top most level in discriminating the defaulters from non defaulters. This characteristic contribution to the total distance is 88.91 per cent, and other followed characteristics are annual per capita family consumption expenditure in rupees (X_9) and level of education (X_3) and their percentage contributions to the total distance are 23.29 and 1.51 respectively. The relative importance of each characteristic is determined by its percentage contribution to total distance.

Discriminant Function for Willful and Non-Willful Defaulters

Table 4 shows the mean and their difference with regard to the socio-economic characteristics of the willful defaulters and non willful defaulters.

$$\begin{aligned} Z = &+1.6811X_1 - 12.4125X_2 + 0.44622X_3 \\ &-1.3624X_4 + 0.00196X_5 - 0.03453X_6 \\ &+0.01944X_7 + 0.2162X_8 + 0.6129X_9 \\ &+0.04693X_{10} - 0.0074X_{11} + 0.4122X_{12} \end{aligned} \tag{3}$$

From the Equation (3) all the characteristics turned out to be significant in classifying the defaulters into willful defaulters and non-willful defaulters. Relative importance of the characteristics' percentage contribution to the total distance is measured and is given in Table 5. Important major characteristics which classified the defaulters into willful defaulters and non-willful defaulters are shown in Table 5.

The 't' value is calculated for all the selected characteristics and is found that X_2, X_3, X_8 and X_{10} are significant. These characteristics are considered to be major characteristics for willful defaulters and non willful defaulters. These characteristics discriminate one group of borrowers from other, by operational size of land holdings (X_2), level of education (X_3), percentage of income from agriculture (X_8) and per acre fertilizer used in Rs. (X_{10}) are the major and significant characteristics and other characteristics X_1, X_4, X_5, X_6, X_7, X_9, X_{11} and X_{12} are found to be insignificant and therefore excluded in the new equation for further analysis.

Discriminant function is returned by taking only these four major characteristics X_2, X_3, X_8 and X_{10} in the equation to inquire whether these characteristics alone are able to discriminate non-wilful defaulters and willful defaulters in a significant manner. The new discriminant equation is given in (Equation 4).

$$Z = -6.0114\,X2 + 0.73112\,X3 + 0.046691\,X8 - 0.00076\,X10 \qquad (4)$$

From Equation (4) the percentage contribution of major characteristics to the total distance and ordering of characteristics are easily found. Operational size of land holdings (X_2), level of education

(X_3), percentage of income from agriculture (X_8) and per acre fertilizers used in Rs. (X_{10}) are high and would contribute higher value of Z and thereby placing the borrowers into non-willful category and vice versa.

The new function is found to be significant. This means that the four characteristics considered are useful in classifying the borrowers into non-willful defaulters and willful defaulters. The percentage to the total distance is measured in order to know the relative importance of these characteristics. This calculation is presented in Table 6.

From the Table 6 it has been revealed that, the operational size of land holdings in acres (X_2) is the first major characteristic which discriminates one group from the other, level of education (X_3) and per acre fertilizers used in rupees (X_{10}) are getting second and third places in discriminating willful defaulters and non willful defaulters. These characteristics have their weights to the total distance measured as 100.96 and 0.36 per cent respectively.

Major Findings

The exact amount of non-performing assets and overdues percentage wise as well as absolute amount-wise are going on increasing. The bad and doubtful debts, funds blocked in suit-filed accounts and decreased debt and funds in the hands of willful defaulters are showing an upward trend. Most of the borrowers are non willful borrowers in selected areas [18,19].

Conclusions

Thus it could be concluded that the marginal farmers had performed well not only in the prudent investment they had made on the financial and physical assets, but also in the better and more efficient utilization of factors and inputs in the study area. Agricultural credit, particularly commercial bank credit, promoted agricultural inputs to meet their various day-to-day agricultural expenses. Besides it had also motivated them to adopt intensive methods of cultivation. It could also be inferred that the recovery performance, which was found to be better in the study area, had in its turn induced the effective functioning of the Lead Bank in the study area.

Sl. No.	Socio Economic Characteristic of the Borrowers	Mean Value		Differences
		Non-willful Defaulters	Willful Defaulters	
1.	X_1	2.8611	3.6011	-0.7400
2.	X_2	2.8611	8.6024	-5.7413
3.	X_3	0.9534	1.4621	-0.5087
4.	X_4	0.7345	0.9732	-0.2387
5.	X_5	41.2011	39.4314	1.7697
6.	X_6	23.3141	25.1621	-1.8480
7.	X_7	131.4514	121.4911	9.9603
8.	X_8	58.4314	64.211	-5.7796
9.	X_9	2462.9261	2399.2411	63.6850
10.	X_{10}	839.2143	1003.2482	-164.0339
11.	X_{11}	8422.4121	7578.2161	844.196
12.	X_{12}	776.2243	513.2913	262.9332

Table 4: Mean and their Differences with Regard to the Socio-Economic Characteristics of the Defaulter Borrowers for Non-Willful Defaulters and Willful Defaulters.

Sl. No.	Socio-Economic character-istics Cs	Co – efficient (lk)	Mean differences (dl)	Co-efficient x Mean differences (lk x di)	Percentage	t values
1.	X_1	1.6811	-0.740	-0.1244	-0.2033	0.87941
2.	X_2	-12.4125	-5.7413	-71.2639	-116.4646	5.19622*
3.	X_3	0.4462	-0.5087	-0.2270	-0.3709	3.71418*
4.	X_4	-1.3624	-0.2387	0.3252	0.5315	0.4979
5.	X_5	0.00196	1.7697	0.00351	0.0057	1.04614
6.	X_6	-0.03453	-1.8420	0.06360	0.1039	0.54762
7.	X_7	0.01944	9.9603	0.1936	0.3164	1.74022
8.	X_8	0.2162	-5.7796	-1.2495	-2.0420	2.30114*
9.	X_9	0.6129	63.6850	39.0325	63.7897	0.51623
10.	X_{10}	0.04693	-164.0339	-7.6981	-12.5808	2.08293*
11.	X_{11}	-0.0074	844.196	-6.3809	-10.2095	1.13491
12.	X_{12}	0.4122	262.983	108.3809	177.1239	1.04891

*Significant at 5 per cent level

Table 5: Percentage Contribution of Individual Characteristics to the Total Distance Measured.

Sl. No.	Socio-Economic Characteristics Cs	Co – efficient (lk)	Mean differences (dl)	Co-efficient X Mean differences (lk x di)	Percentage	t values
1.	X_2	-6.0114	-5.7413	34.5133	100.9660	0.19713*
2.	X_3	0.73112	-0.5087	-0.3719	-1.0880	3.71421*
3.	X_5	0.04691	-1.7697	-0.0830	-0.2428	2.01435
4.	X_{10}	-0.00076	-164.0339	0.1247	0.3648	2.41621*

*Significant at 5 per cent level

Table 6: Percentage Contribution of Individual Characteristics to the Total Distance Measured - July 2013-14.

Suggestions

- Agriculture in India, viewed as a way of life, was not considered a productive proposition by the socially, economically and technologically backward population. The inter-sectoral mobility of personnel, resources and technology was very limited and it had created a vicious circle of technological isolation in the agricultural sector.

- There is need for simplification of procedures for recovery of overdues of the commercial banks.

- There is need for collecting, compiling, tabulation of data relating to recovery of overdues made from time to time.

- Extension of repayment period in terms of successive crop failure due to natural calamities also is required.

- Fixing appropriate due dates in relation to crop calendar ensuring timely disbursement and recovery of loans is advisable.

- It is earnestly felt that the findings arrived at, and the valid suggestions made, in the wake of intensive study of agricultural credit with reference to commercial banks in Tamil Nadu carried out by the present writer will go a long way in enhancing the socio-economic level of farmers not only in the study area but all also over the entire country.

References

1. Bedi IS, Saxena PB (1965) Improved Agricultural Practices: Behaviouristic Pattern of Farmers in Punjab and Uttar Pradesh. AICC Economic Review, New Delhi 16(21): 27-33.

2. Pattle RV (1969) Credit: Powerful Force for Agricultural Development, All India Central Land Development Banks. Co-operative Union Ltd Journal 6(2): 2-13.

3. Dasgupta S (1980) Class Relations and Technical Changes in Indian Agriculture, Institute of Economic Growth, New Delhi: 29.

4. Agarwal, Kundanlal (1990) Rural Economy of India. Vikas Publishing House Pvt Ltd New Delhi.

5. Hill B, Ray D (1987) Economics of Agriculture, Food, Farming and Rural Economy. Prentice Hall of India.

6. Desai (1981) A Study of Rural Economics and Credit. Ashish Publishing House, New Delhi.

7. Dhawan BD (1998) Studies in Agricultural Investments and Rural Savings. Common Wealth Publishers, New Delhi.

8. Hopkin JA, Barry PG, Baker CB (1973) Financial Management in Agriculture. The Interstate Printer and Publisher Inc, New York.

9. Madani GMK (1988) Introduction to Econometrics, Principles and Applications. Oxford and IBH Publishing Co Pvt Ltd, New Delhi.

10. Mathur BS (1994) Co-operative in India. Shaitya Bhavan, Agra.

11. Mellor JW (1992) The Economics of Agricultural Development. Asia Publishing House, Bombay.

12. Memoria CP (1979) Agricultural Problems of India. Kitab Mahal, Alahabad-Delhi.

13. Misra SK, Puri VK (2001) Indian Economy. Himalaya Publishing House, Mumbai.

14. Rao, Hanumantha CH (1994) Agricultural Growth, Rural Poverty and Environmental Degradation in India. Oxford University Press, New Delhi.

15. Agarwal ML, Kumawat RK (1974) Potentialities of Increasing Farm Income through Credit and New Technology. Agricultural Situation in India 28(9).

16. Alhavale MS, Yadav KS, Mishra JP (1971) Green Revolution and Short Term Co-operative Credit – A Study in Two Districts of Madhya Pradesh. Indian Journal of Agricultural Economics 26(1).

17. Anderson JR, Joblhs NS (1973) Cobb-Douglas and Related Myths, Economic and Political Weekly. Review of Agriculture.

18. Nambbodri NV (1996) Capital Formation in Agriculture: Role of Institutional Finance and Government Investments. Indian Journal of Agricultural Economics 51(4).

19. Natarajann B (1977) Agricultural Credit and Banking. Tamil Nadu Journal of Co-operation 68.