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IMPACT OF PRIMARY CO-OPERATIVE AGRICULTURAL AND RURAL DEVELOPMENT BANKS' CREDIT IN TIRUVANNAMALAI DISTRICT

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Abstract

Primary Co-operative Agricultural and Rural Development Banks lend long term loans for the agriculturists, non- agriculturists and rural poor and landless agricultural laborers. They provide credit for the purpose of land development, purchase of tractors and motor pumps etc. But in the recent past , as per the guidelines of the NABARD, the banks have started lending for many new diversified purposes like loans for non minor irrigation, non farm sector, goat rearing, dairy development, purchase of tyre cart etc. because traditional lending his been saturated in many states. Against this back ground, a micro study has been conducted in Tiruvannamalai District to study the end results of the diversified loans and this paper attempts to analyze the impact of the PCARDB's credit on the beneficiaries and to find out whether the loans increased the income of the borrowers or not.

1. Introduction

Primary Co-operative Agricultural and Rural Development Banks (PCARDBs) grant long term loans to meet the financial requirements for agricultural and non agricultural needs of the rural people in the district. The main objective of this credit assistance is to increase the production/agricultural output and to increase the income and economic well-being of the beneficiaries. But mere quantitative lending will not ensure the attainment of these objectives. The loans have to be granted at the right time and the credit provided should be sufficient for the purpose for which it is given. Then only the loan will bring in the results and help the borrowers to repay the loan amount. If all these are accomplished, the quality of lending may be considered as sound. Therefore a micro study has been conducted to analyze the impact of PCARDB loan on agricultural production and income of the borrowers in Tiruvannamalai District.

2. Statement of the Problem

The loans provided by the PCARDBs for the traditional purposes alone can not ameliorate the conditions of the agriculturists and the rural poor. Hence as per the guidelines of NABARD,

Primary Agricultural and Rural Development Banks have started diversifying their lending operations from traditional purposes of lending like land improvement, reclamation, farm mechanization and purchase of motor pump sets etc., to non-farm sector, modified farm mechanization and non minor irrigation, dairy development purposes etc. This is mainly to increase the income of the borrowers and rural poor and to create good impact. Therefore, a micro study has been conducted in Tiruvannamalai District to analyze the impact of PCARDB's credit and to find out whether the loan has created the income for the beneficiaries or not.

3. Objective of the Study

The objective of the study is to analyze the impact of bank loan on agricultural production and income during the pre-loan period and post-loan period of the borrowers of PCARDBs in Tiruvannamalai District.

4. Hypotheses

The following hypotheses were framed and tested.

a) Null Hypothesis

Ho : There is no significant difference between

the average income of the pre- loan period and average income of the post- loan period of the borrowers

b) Null Hypothesis

Ho: There is no significant difference between the average incremental incomes in the case of borrowers of the three sectors- NMI, FM & NFS.

5. Period of Study

The period of study was from March 2006 to February 2007.

6. Methodology of the Study

A multi-stage sampling technique has been adopted for the study.

In the first stage, Tiruvannamalai District was selected at random. All the eight primary banks in the district i.e., Arni PCARDB, Cheyyar PCARDB, Chengam PCARDB, Polur PCARDB, Tiruvannamalai PCARDB, Thuringapuram PCARDB, Thandarampet and Vandavasi PCARDB were taken for the study.

In the second stage, three different types of diversified loans advanced by these banks were selected at random. They are (i) non-minor irrigation loans (ii) modified farm mechanization loans and (iii) non-farm sector loans.

In the third stage, in order to study the effect at the end use of loan, out of 2,700 borrowers, 270 borrowers, i.e., ten percent of the borrowers, who obtained loan during the year 2005-2006 under three different sectors, were selected at random. (231 for diversified purposes, 29 for farm mechanization and 10 for non-farm sector from the loan ledger of the banks.) These borrowers were then interviewed with the help of a well- structured interview schedule.

7. Tools Used for Analysis

The statistical tools employed for analyzing the data are Paired 't' Test, Regression Analysis and Analysis of Variance. (ANOVA)

8. Analysis of the Study

In order to ascertain the variations in the generation of (i) agricultural income and (ii) production income, for the three selected sectors financed by the PCARD Banks between the pre- loan and post loan periods, paired 't' test was applied. It has been tested by using Regression Analysis for agricultural/production income of (a) non-MI (b) farm mechanization and (c) NFS categories of borrowers and the results are presented in **Table- 3**.

9. Results and Discussion

Impact on Incremental Income

Table -1 shows that the average incremental income is Rs.6,363 in non minor irrigation, Rs.10, 431 in farm mechanization, and Rs.11, 830 in non - farm sector. The observed value of 't' is 8.779 ($p = 0.0001$), 4.218 ($p = 0.0002$) and 4.555 ($p = 0.01544$) in non-minor irrigation, farm mechanization and non-farm sector respectively.

Comparison : Non minor irrigation : This means the probability of observing by chance a value as much as or greater than 8.779 is less than 0.05. Hence, as the observed value of 'p' is < 0.052 , there is no evidence to accept the null hypothesis.

Comparison : Farm mechanization : The test result reveals that the probability of observing by chance a value as much as or greater than 4.218 is less than 0.05. Hence, we reject the null hypothesis since 'p' is < 0.05 .

Comparison : Non Farm Sector : The paired 't' test shows that the probability of observing by chance a value as much as or greater than 4.555 is less than 0.05. Hence we reject the null hypothesis since the observed 'p' = 0.01544, < 0.05 .

This further implies that there is significant difference between the average income of pre-loan period and average income of post-loan period of the borrowers, as the corresponding

'p' values are less than 0.05 in all the above three sectors. Thus it can safely be concluded that PCARD Bank loan has a positive impact on income of the borrowers, as there is considerable increase in income after taking loan from PCARD banks.

In order to test whether the difference among the averages of incremental income in the three sectors is significant, one way ANOVA was applied and the results are provided in **Table -2**.

Table- 2 establishes that there is a significant variation in incremental income among the three sectors since $F = 8.223$, and the observed 'p' value = 0.0463 which is less than 0.05. Respondents, who took loan under NFS purposes, recorded a maximum income of Rs. 11,830 in the production income, in FM sector recorded Rs. 10,431 in their production income and non minor irrigation recorded Rs. 6,363 in their production income.

Table -3 proves that in the three selected sectors, significant linear relationship is observed between $y =$ agricultural production income and $x =$ bank loan. Then regression co-efficient of bank assistance, when placed in relation to the increase in agricultural production income, are 0.4071 0.3344, and 0.3273 under non minor irrigation, farm mechanization, non farm sector loans respectively. This analysis further indicates a moderate magnitude of R^2 values i.e., 13 percent, 12 percent and 10 percent in non-minor irrigation respectively.

The observed value of 't' is 5.875 ($p=0.0182$) in the case of non-minor irrigation, 6.734 ($p=0.0243$) in the case of farm mechanization and in non-farm sector 5.101, ($p=0.0341$) respectively. This means the probability of observing by chance a value as much as or greater than the above 't' values in all the sectors is less than 0.05. Hence, we reject the null hypothesis that X and Y are independent since 'p' is < 0.05 .

Thus, the PCARD bank credit has contributed significantly to the increase in agriculture production income of the borrowers in the post loan period in all the three sectors. Therefore, it can statistically be concluded that the PCARD bank finance have a positive impact on the agricultural/ production income of the borrowers in all the three selected sectors for the study.

10. Conclusion

The PCARDBs are lending loan for diversified purposes mainly to increase the income of the borrowers and to increase the subsidiary occupation not only in Tiruvannamalai District, but also in entire Tamil Nadu .It is evident from the above inference that the findings may suit the other districts which have the same topographical conditions . It is suggested that the banks should give higher impetus to higher income yielding projects under diversified purposes also. The State Co-operative Agriculture and Rural Development Banks should identify and introduce many schemes and direct the PCARDBs to finance agriculturists and landless laborers to augment their income to improve their standard of life.

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Table-1
't' test Results on Agricultural / Production Income

Sectors	\bar{Y} = mean of pre-income	\bar{X} = mean of post income	$d = \bar{Y} - \bar{X}$	Calculated 't' value	Probability value
	Rs.	Rs.	Rs.		
Non-MI	8.193	14.556	6,363	8.779	0.0001
F.M	16,732	27,163	10,431	4.218	0.0002
NFS	46,104	57,934	11,830	4,555	0.01544

Source : Primary data

Non-MI : Non Minor irrigation ; **F.M** : Farm Mechanization ; **NFS** : Non Farm Sector

Table - 2
Variation in the Incremental Income of Agricultural / Production - ANOVA – Table

Sources of variation	Sum of squares	Degrees of Freedom	Mean Sum of Square	'F' value	Probability Value
Between sectors	52.013	118	0.441	8.223	0.0436
Within sector	8.095	151	0.05361		
Total	60.108	269			

Source : Primary data

Sectors : Non Minor irrigation ; Farm Mechanization ; Non Farm Sector

Table- 3
Agricultural / Production Income - Regression Analysis

Sectors	Regression Co-efficient	R ² (%)	Calculated 't' value	Probabilityvalue
Non MI	0.4071	13%	5.875	0.0182
F.M	0.3344	12%	6.734	0.0243
NFS	0.3273	10%	5.101	0.0341

Source : Primary Data

Non-MI : Non Minor irrigation ; **F.M** : Farm Mechanization ; **NFS** : Non Farm Sector



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