

AGRICULTURAL LENDING OF COMMERCIAL AND COOPERATIVE BANKS: A COMPARATIVE STUDY IN THE STATE OF JAMMU AND KASHMIR

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ABSTRACT

The agricultural lending of commercial and cooperative banks has been compared in terms of the distribution and quantum of credit across different categories of farmers. The agricultural lending of commercial and cooperative farmers was compared in terms of their lending for different crop loans and investment loans. Per hectare and per borrower loan was calculated to study the coverage and quantum of credit across different categories of farmers. Effective cost of credit was calculated for both commercial and cooperative banks to determine the more affordable source of credit for the farmers. Several constraints faced by farmers in acquiring agricultural credit were identified and studied using factor analysis.

Introduction

Agriculture is a dominant sector of Indian economy and credit plays an important role in increasing agricultural production. Availability and access to adequate, timely and low cost credit from institutional sources is of great importance especially to small and marginal farmers. Credit, as one of the critical non-land inputs, has two-dimensions from the viewpoint of its contribution to the augmentation of agricultural growth viz., availability of credit (the quantum) and the distribution of credit.

Before the nationalization of banks, co-operatives were the sole players in the rural credit delivery system. After nationalization of banks and setting of Regional Rural Bank (RRB) in 1975, the commercial banks and RRBs joined the co-operatives in the pursuit of India's rural development. The increasing importance of scheduled commercial banks over other rural credit institutions had been highlighted by comparing the contribution of different sources to agricultural credit over time. There was no denial of the fact that the scheduled commercial banks had picked up momentum especially in the post-economic reforms period. Despite this,

an all out effort was required on the part of banks to reorient their policies in order to surmount the obstacles in the way of achievement of 18 per cent share to agricultural sector.

Commercial banks are the major delivery channel, taking almost 75 percent share in the ground level credit. The co-operative banks' share is around 15 percent, while that of RRBs is around 10 percent. The continuous loss in the share of co-operative banks over the years is pertinent as conventionally, small and marginal farmers are their major clients. In their interest, it is essential that the co-operative banks stabilize. (Kataria and Chahal, 2005)

Cooperative banks played essential role in the realization of the agricultural and in local development. They serve both rural and urban population, and are main banks in India supporting development of agriculture and rural areas. Their key role is to give credits financing various rural based entrepreneurships (Soni and Saluja, 2012).

The co-operative sector suffers from non-viability of primary units, overdues, lack of professionalism and high administrative and operational costs. Co-operative structure in many states is at the verge of collapse. High incidence of overdues has made many of these co-operatives weak and ineffective recycling of funds suffered considerably (Priya, 2006).

Under this background, many previous studies have attempted to analyse the distribution of credit. Studies have also been carried out on the technical efficiencies of both co-operative and commercial banks. The credit policy of the commercial and co-operative banks has some variations. Effective cost of credit from commercial and cooperative banks was also compared. Constraints faced by farmers in acquiring credit from both these sources were assessed and recommendations were given for efficient credit delivery for farmers.

Methodology

For the study undertaken in 2014-15, the primary data for the financial year 2013-14 were collected from 100 borrower farmers out of which 50 borrowers were selected from commercial banks and 50 borrowers from cooperative banks. The survey method was used to collect data from the borrower farmers. Schedules were used to collect information from the borrower farmers. Secondary data were collected from web portals, magazines, journals and government websites.

Multi-stage random sampling and purposive sampling were used to select the sample. In the first stage, Baramulla district was selected purposively from Jammu and Kashmir as Baramulla is the hub of apple production in J&K. Besides, various other crops are also being

cultivated in the district. It is therefore one of the highly credit-intensive districts and has access to both commercial and co-operative banks. A multi-stage random sampling procedure was followed for selecting the sample of borrower farmers. In the first stage, one block out of the total 12 blocks of Baramulla district was selected randomly. In the second stage, all the commercial and co-operative banks located in the block were selected and borrower lists were taken from these banks. In the third stage five most credit intensive villages were selected separately for commercial and cooperative banks based on the frequency of borrowers. 10 borrower farmers from each village were selected randomly from the borrowers list.

The specific objectives of the study were:

- To study the distribution and quantum of credit from commercial and cooperative banks across different categories of farmers
- To calculate and compare the effective cost of credit from commercial and cooperative banks
- To study the constraints faced by farmers in availing agricultural credit from commercial and co-operative banks

Analytical Framework

Distribution and Quantum of Credit

The coverage and quantum of credit from commercial and cooperative banks across different categories of farmers was assessed for the last one year. Data collected from commercial, cooperative banks and farmers was interpreted through tabular analysis and percentages to study the credit distribution.

Effective Cost of Credit

The effective cost of credit is interest payment plus transaction cost plus opportunity cost. The transaction cost may vary from borrower to borrower depending on the distance of the relevant branch office of bank from their respective homes; cost of transportation and costs incurred in terms of passbook, other stationary, revenue stamp, loss of wages, food, service charges to intermediaries etc.

$$ECC = FC + TC + OP$$

Where;

ECC= Effective cost of credit, FC=Financial cost (interest rate), TC=Transaction cost

OC= Opportunity cost

Factor Analysis

Major constraints faced by farmers in availing agricultural credit from commercial and cooperative banks include accessibility, adequacy, timely availability, transaction cost, complicated procedure, size of land holding and repayment period, low service speed, lack of infrastructure, bribe, collateral, no previous experience, low reputation among community members. These constraints were analyzed by applying factor analysis. Factor analysis helped to identify the relative importance of the problems faced by farmers. More important factors were extracted and the banks should improve on these factors for customer satisfaction. In factor analysis, Bartlett test of sphericity and Kaiser-Meyer-Olkin (KMO) test were applied to determine the appropriateness of factor analysis. Eigen values were

S. No	Farmers' category	Commercial banks		Cooperative banks		Total	
		No.	Percentage	No.	Percentage	No.	Percentage

calculated to determine the total variance explained by each factor.

Results and Discussion

Distribution of Credit

The distribution of agricultural credit was analysed as follows:

To study the credit distribution, the sample farmers were categorized into different groups based on the land holding size, i.e. marginal (<1 ha), small (1-2 ha), semi-medium (2-4 ha), medium (4-10 ha) and large farmers (>10 ha). The categorical distribution of farmers gives a clear picture of the selected sample. The distribution of farmers is given in Table 1 as under:

Table 1: Distribution of sample borrower farmers

1	Marginal	10	20	14	28	24	24
2	Small	11	22	16	32	27	27
3	Semi-Medium	24	48	17	34	41	41
4	Medium	4	8	3	6	7	7
5	Large	1	2	0	0	1	1
	Total	50	100	50	100	100	100

Out of the total sample of 100 borrower farmers, 41 percent fall under the semi-medium category and 27 percent in small category. Medium and large category involves only 7 percent and 1 percent respectively.

Farmers' category-wise distribution of agricultural credit

The distribution of agricultural credit to farmers in the selected block by the commercial and co-operative banks has been depicted in terms of crop loan in Table 2 and in terms of investment loan in Table 3. 76 farmer respondents were the borrowers of crop loan, whereas 33 farmers borrowed investment loan. The total crop loan availed by the borrowers amounted to ₹ 66.05 lakh from commercial banks and ₹ 70.65 lakh from co-operative banks. In crop loan, the number of accounts was highest for semi-medium farmers, followed by small farmers. The total amount sanctioned was also higher for the semi-medium farmers, followed by small farmers.

Table 2: Farmers' category-wise distribution of crop loan from commercial and cooperative banks

Farmers' category	Institutional source of credit				Total no. of accounts	Total amount (₹ in lakh)
	Commercial banks		Co-operative banks			
	No. of accounts	Amount (₹ in lakh)	No. of accounts	Amount (₹ in lakh)		
Marginal	5	5.30	10	7.38	15	12.68
Small	9	17.75	15	29.42	24	47.17
Semi-medium	18	34.00	16	30.35	34	64.35
Medium	2	3.50	1	3.50	3	7.00
Large	1	5.50	0	0	1	5.50
Total	35	66.05	42	70.65	77	136.70

Among the 35 crop loan borrowers of commercial banks, the number of accounts and loaned amount were both higher for the semi-medium category of farmers. Out of 42, crop loan borrowers of co-operative banks, the semi-medium farmers availed higher amount of loan. It was also noted that the amount of crop loan sanctioned by the cooperative banks was higher than by the commercial banks. It showed better access of farmers to cooperative banks.

The investment loan is given by the commercial and co-operative banks to improve the farm infrastructural facilities. Amongst 33 farmers who borrowed investment loan, 22 borrowed from commercial banks and 11 from co-operative banks (Table 3). Among different categories of borrowers of investment loan, semi-medium farmers were the major beneficiaries followed by medium farmers.

Table 3: Farmers' category-wise distribution of investment loan from commercial and cooperative banks

Farmers' category	Institutional source of credit				Total no. of accounts	Total amount (₹ in lakh)
	Commercial banks		Co-operative banks			
	No. of accounts	Amount (₹ in lakh)	No. of accounts	Amount (₹ in lakh)		
Marginal	5	5.40	4	4.80	9	10.20
Small	4	5.60	1	1.90	5	7.50
Semi-medium	9	24.05	5	12.10	14	36.15
Medium	3	7.80	1	10.00	4	17.80
Large	1	4.5	0	0	1	4.50
Total	22	47.35	11	28.80	33	76.15

Crop-wise distribution of crop loan

The crop-wise distribution of loan among various categories of farmers by commercial and co-operative banks has been shown in Table 4 and Table 5. The analysis has revealed that both commercial and co-operative banks disbursed 87.44 percent of total crop loan amount to apple. It was due to the fact that the cultivation of apple dominates in the cropping pattern. The scale of finance fixed by the lead banks for apple crop is also higher and thereby it could avail higher amount of loan. Pear and Walnut followed in the share of crop loan amount contributing 4.88 percent and 4.07 percent of total crop loan amount, respectively.

Table 4: Farmers' category-wise distribution of crop loan for different crops by Commercial banks

Category of farmers	Commercial banks									
	Apple		Pear		Walnut		Paddy		Maize	
	No. of a/c	Amt. (in lakh □)	No. of a/c	Amt. (in lakh □)	No. of a/c	Amt. (in lakh □)	No. of a/c	Amt. (in lakh □)	No. of a/c	Amt. (in lakh □)
Marginal	3	3.90	0	0	1	0.80	1	0.60	0	0
Small	7	16.45	1	0.80	0	0	1	0.50	0	0
Semi-medium	13	30.00	2	2.20	1	0.50	0	0	2	1.30
Medium	2	3.50	0	0	0	0	0	0	0	0
Large	1	5.50	0	0	0	0	0	0	0	0
Total	26	59.35	3	3.00	2	1.30	2	1.10	2	1.30

Table 5: Farmers' category-wise distribution of crop loan for different crops by Cooperative banks

Category of farmers	Cooperative banks									
	Apple		Pear		Walnut		Paddy		Maize	
	No. of a/c	Amt. (□)	No. of a/c	Amt. (□)	No. of a/c	Amt. (□)	No. of a/c	Amt. (□)	No. of a/c	Amt. (□)
Marginal	5	3.80	0	0	3	2.58	1	0.50	1	0.50
Small	13	27.42	1	1.30	0	0	1	0.70	0	0
Semi-medium	12	26.50	2	2.75	0	0	1	0.50	1	0.60
Medium	1	3.50	0	0	0	0	0	0	0	0
Large	0	0	0	0	0	0	0	0	0	0
Total	31	61.22	3	4.05	3	2.58	3	1.70	2	1.10

Table 6: Crop-wise credit plan of Baramulla district for the year 2013-14

S. No.	Crop	Amount (□ thousands)per ha
1	Apple	17334.00
2	Walnut	268560.00
3	Pear	63360.00
4	Apricot	14940.00

5	Peach	15300.00
6	Paddy	66024.00
7	Maize	38232.00
8	Pulses	20709.00
9	Potato	61803.00
10	Pea	19764.00

Source: District Credit Plan, 2013-14, Lead Bank (J&K Bank, Baramulla)

Table 6 shows the crop-wise credit allotment plan of Baramulla district for the year 2013-14. It is shown in terms of credit amount per hectare of crop cultivation. The perusal of the table interprets that Apple is the crop having highest credit allotment (₹ 268560.00) followed by Paddy (₹ 66024.00).

Coverage and quantum of credit

To find the coverage and quantum of credit, distribution of loan in terms of per account and per hectare were computed for all the categories of farmers and the values have been shown in Table 7 for both crop and investment loans. A perusal of Table 7 revealed that per borrower crop loan disbursement had a positive relationship with farm size except semi-medium and medium categories in commercial banks. In co-operative banks there is also a positive relationship between crop loan amount and land size except semi-medium farmer category. It was because the loans were given by the banks to the farmers on the basis of scale of finance for different crops and also the size of operational landholdings. The crop loan per hectare from both commercial and cooperative banks also declined with the size of landholding.

The amount of investment loan per borrower distributed by the commercial bank was found to be higher for semi-medium farmers' category, in spite of their larger number. It was due to the fact that semi-medium farmers had availed the loan for the purchase of tractors for which the scale of finance was higher.

Table 7: Distribution of crop loan and investment loan per borrower and per hectare

Farmers' category	Per borrower (₹ in lacs)		Per hectare (₹ in lacs)	
	Commercial banks	Cooperative banks	Commercial banks	Cooperative banks
Crop loan				

Marginal	1.06	0.73	1.68	1.34
Small	1.97	1.96	1.82	1.51
Semi-medium	1.89	1.90	0.71	0.83
Medium	1.75	3.50	0.43	0.82
Large	5.50	-	0.45	-
Investment loan				
Marginal	1.08	1.20	2.16	1.75
Small	1.40	1.90	1.33	1.90
Semi-medium	2.67	2.42	0.89	1.27
Medium	2.60	1.70	0.60	1.11
Large	4.50	-	0.37	-

On the other hand, it was also higher for semi-medium borrower farmers from the cooperative banks. The investment loan per hectare declined as the landholding size increased for both commercial banks and co-operative banks. It indicated less need of loan for infrastructure development by larger farmers. The per capita investment loan was higher for marginal farmers from both commercial and cooperative banks.

Effective Cost of Credit

Analysis of the cost of credit forms the base of effective lending. The effective cost of credit is interest payment plus transaction cost plus opportunity cost. The effective cost of credit may vary from source to source. Therefore it forms an important factor regarding the selection of source of credit. Under this objective, the effective cost of credit was calculated for commercial and cooperative banks by categorizing various costs into financial costs, transaction costs and opportunity costs.

Table 8: Effective cost of credit from commercial banks

Cost of Credit	Different Costs	Average Effective Cost (%)	Total (%)
Financial Cost	Interest Rate	12.305	12.305
Transaction Cost	Travelling Cost	0.15	0.43
	Processing Cost	0.15	
	Documentation Cost	0.11	
	Communication Cost	0.02	
Opportunity Cost	Loss of Wages	0.8	0.8
Total		13.53	13.53

The effective cost of credit from commercial banks worked out to be 13.53 per cent (Table 8), 0.58 per cent higher than effective cost of credit from cooperative banks i.e. 12.95 per cent (Table 9). It indicated that the cooperative banks serve as a more affordable alternative for agricultural credit. Farmers generally prefer cooperative banks for borrowing, may be due to low acquisition cost of credit.

Table 9: Effective Cost of Credit from Cooperative Banks

Cost of Credit	Different Costs	Average Effective Cost (%)	Total (%)
Financial Cost	Interest Rate	11.74	11.74
Transaction Cost	Travelling Cost	0.09	0.1
	Processing Cost	0.14	
	Documentation Cost	0.14	
	Communication Cost	0.03	
Opportunity Cost	Loss of Wages	1.11	1.11
Total		12.95	12.95

Factor Analysis- Constraints in Availing Credit

Major constraints faced by farmers in availing agricultural credit from commercial and cooperative banks include inaccessibility, inadequacy, timely unavailability of loan , high transaction cost, complicated procedure, small land holding size and short repayment period, low service speed, lack of infrastructure within the banks, bribe, collateral, no previous experience, low reputation among community members. These constraints were analyzed by applying factor analysis. Factor analysis helped to identify the relative importance of the problems faced by farmers. In factor analysis, Bartlett test of sphericity and Kaiser-Meyer-Olkin (KMO) test were applied.

The hypothesis of the factor analysis is that the constraint factors are uncorrelated to each other.

Bartlett's Test of Sphericity

Bartlett's Test of Sphericity is a test statistics used to examine the hypothesis that the variables are uncorrelated in the population. In this case the null hypothesis related to the appropriateness of the factor analysis has been rejected, (as significant level is beyond the .05 level). So the data collected were found to be appropriate for the factor analysis.

Sample Adequacy

The sample adequacy has been proved by statistical value of KMO (Kaiser-Meyer-Olkin Measure of sampling Adequacy) to examine the appropriateness of factor analysis. Here the value of KMO is 0.746 (Table 10). This indicates higher sampling adequacy for the factor analysis.

Table 10: KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.746
Bartlett's Test of Sphericity	Approx. Chi-Square	274.584
	Df	78
	Sig.	.000

Determining the number of factor extracted

The factors having Eigen value greater than 1 (as indicated in Table 11) were extracted. The principal component method using Varimax procedure reduced the 13 explanatory variables to 5 factors having Eigen values greater than 1. For the purpose of interpretation, each factor was composed of variables with factor loading 0.40 or higher on that factor. But the cumulative percentage of variance technique by combining all the factors was also taken into consideration. The rule of thumb is that the factors extracted should account for at least 60 percent of the variance. Here the number of the factors extracted was found to be five, and the cumulative percentage of variance explained by all these five factors accounted for more than sixty percent (63.370 percent).

Table 11: Total variance explained

Component	Initial Eigen values			Rotation Sums of Squared Loadings		
	Total	percent of Variance	Cumulative percent	Total	percent of Variance	Cumulative percent
1	3.347	25.750	25.750	3.018	23.215	23.215
2	1.459	11.220	36.970	1.438	11.059	34.274
3	1.318	10.139	47.109	1.404	10.800	45.074
4	1.112	8.552	55.660	1.305	10.038	55.113

5	1.002	7.709	63.370	1.073	8.257	63.370
6	.997	7.666	71.035			
7	.779	5.992	77.028			
8	.770	5.922	82.950			
9	.622	4.783	87.733			
10	.565	4.344	92.078			
11	.475	3.652	95.729			
12	.323	2.483	98.213			
13	.232	1.787	100.000			

The first factor alone explained 25.750 percent of the total variability. The second factor alone explained 11.220 percent of the total variability and the first two factors, in combination, explained 36.970 percent of the total variability. The third factor explained alone 10.139 percent of the total variability and the three factors, in combination, explained 47.109percent of the total variability. The fourth factor explained 8.552 percent and the fifth factor explained 7.709 percent of total variability (Table 11). Varimax rotation procedure was applied for the selected 13 attributes (Table 12). The factor loadings of the 13 variables were then observed and variables were clubbed into five factors.

Table 12: Rotated component matrix

Factors	Component				
	1	2	3	4	5
Inaccessibility				.636	
Inadequacy	.617				
Untimely loan			.819		
High cost			.613		

Complex procedure	.769			
Small landholding			.815	
Short repayment time		.752		
Low Service speed	.705			
Less infrastructure	.802			
Bribe				
Collateral				.942
Inexperience		.659		
Community reputation				

The factors along with their component variables were named accordingly.

Component 1: Operational inefficiencies (banks): Inadequate loan amount, complex loan procedure, Low service speed of banks, inadequate infrastructure within banks

Component 2: Borrowing risks: Short repayment time, inexperience of taking loan

Component 3: Ineffective lending: Untimely credit, high cost of credit

Component 4: Banking coverage: Inaccessibility, small land size

Component 5: Credit security: Collateral

From the above interpretation, it is concluded that not only banking inefficiencies and borrowing risk factors were important but ineffective lending, banking coverage and credit security factors were also equally important. Banks need to concentrate on improving the above parameters for effective agricultural lending.

Conclusion

Based on the findings of the study, the following conclusions are drawn:

The study showed that the majority of the farmers in the study area were semi-medium farmers (2-4 ha) having 41 percent share followed by small farmers (1-2 ha) with 27 percent share out of the total number of farmers. This indicates that the landholding within the study area is very fragmented. The study has revealed that in case of crop loan, semi-medium

farmers have the higher number of accounts i.e. 34 (44.16 percent) and higher sanctioned amount i.e. ₹ 64.35 lacs (47.07 percent). Semi-medium farmers have also been the major beneficiaries of investment loan. Out of the total disbursed investment loan amount, i.e. ₹ 76.15 lacs, semi-medium category farmers had a share of ₹ 36.15 lacs (47.47 percent) followed by medium category farmers of ₹ 17.8 lacs (23.37 percent).

Out of the total disbursed crop loan amount (₹ 136.7 lacs), cooperative banks were leading with a share of ₹ 70.65 lacs (51.68 percent) and commercial banks had a share of ₹ 65.05 lacs (47.58 percent). This indicates that cooperative banks are more active in crop specific lending than commercial banks. In case of investment loan, commercial banks were at the edge with a share of ₹ 47.35 lacs (62.18 percent) out of the total ₹ 76.15 lacs. Cooperative banks had the share of ₹ 28.80 lacs (37.82 percent) out of the total amount. This indicates that the commercial banks are more involved in long term financing for improving the infrastructural facilities in farms.

The commercial and co-operative banks have provided higher loans for fruit crops particularly apple, followed by pear and walnut. This is because the cultivation of apple and other fruit crops dominates in the cropping pattern. The scale of finance fixed by the lead bank for these crops is also higher. The effective cost of credit for commercial banks worked out to be 13.53percent and for cooperative banks it was 12.95percent, 0.58percent lesser than that of commercial banks. It indicated that the cooperative banks serve as a cheaper alternative for agricultural credit. Farmers generally prefer cooperative banks for borrowing, may be due to low acquisition cost of credit. The factor analysis extracted five factors out of the total 13 problem factors and these factors were clubbed with various component variables. It was concluded that not only operational inefficiencies of banks and borrowing risk factors are important but ineffective lending, banking coverage and credit security factors are also equally important.

Suggestions

1. The crop loan and investment loan per borrower for marginal farmers is comparatively lesser for both commercial and cooperative banks. The financial institutions have neglected them, may be due to fear of repayment. As the land

holding in the study area is very fragmented. Adequate amount of loan should be provided to the marginal farmers.

2. The crop specific lending of cooperative banks is good but they need to improve their lending of investment loans, while commercial banks are good at lending investment loans but need to provide more crop specific credit to improve the local agriculture and horticulture.
3. The loan per hectare sanctioned by both commercial and co-operative banks is not in proportion to the landholding size. Banks need to provide credit taking into consideration the farm requirements of farmers.
4. Cooperative banks acts as more affordable source of agricultural credit, moreover their banking penetration within the study area is much deeper than the commercial banks. They need to focus on improving their banking service reputation by improving the infrastructure and service speed. Cooperative banks need to specifically target the younger generation of farmers, as they are the future customers of banking industry. The study has indicated that the younger farmers and those having higher landholdings prefer to take credit from commercial banks. Cooperative banks need to improve on these attributes.
5. Cost of credit and accessibility shouldn't be neglected while designing any credit product for rural people.

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