Co-operative Credit Delinquency: Identification of Factors Discriminating Defaulters

Justin, Nelson Michael

Kristu Jayanti College, Bangalore

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CO-OPERATIVE CREDIT DELINQUENCY: IDENTIFICATION OF FACTORS DISCRIMINATING DEFAULTERS

Dr. JUSTIN NELSON MICHAEL

MBA Department
KRISTU JAYANTI COLLEGE
K. Narayanapura
Kothanur PO
Bangalore - 560077

Email: nelson@kristujayanti.com
Nelz.jm@gmail.com

ABSTRACT

Co-operative movement dawned in India a century ago to eradicate indebtedness and to accelerate agricultural production in India. Co-operatives are eminently suited to achieve social, economic changes in rural India. However, credit risk is acute in co-operative credit system, predominantly manifested in short-term credit. Delinquency of co-operative credit is the object of enquiry for many committees and researches. Mounting overdues at the level of Primary Agricultural Co-operative Banks (PACB) contribute to the accumulation of Non-performing Assets (NPA) in the Central Co-operative Banks (CCB). Willful default has been identified as the main reason for mounting overdues. This empirical study of defaulters of co-operative credit has examined the factors discriminating default of co-operative credit, which subsequently increase NPA. Univariate Analysis and Discriminant Function analysis was carried out to identify the factors. Such identification of factors discriminating credit default is crucial to reduce credit delinquency in co-operative credit system.

Key words: credit risk; credit delinquency; co-operative credit; willful default

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Co-operative Banking

The co-operative movement dawned in India a century ago to eradicate the indebtedness of the people and to accelerate the pace of agricultural production in India. Co-operative credit system has been recognized as the most suitable system to rejuvenate the economic fabric of rural India. "It may be regarded as axiomatic that at the rural base, no form of credit organization will be sustainable except the co-operative credit society"(RBI 1954, p.199). The co-operatives are eminently suited to achieve the desired social, economic changes in rural India (GOI 1997, p. 76) Co-operative credit system is suited at the rural base due to local participation, democratic management and responsiveness to local needs" (GOI, 1972, p. 173). Co-operative credit system in India follows a three tier system. The State Co-operative Banks at the state level, the Central Co-operative Banks (CCB) at the district level and the Primary Agricultural Co-operative Banks (PACB) at the village level.

Credit Risk in Co-operative Banks

Banking business is exposed to various risks such as credit risk, liquidity risk, interest risk, market risk, operational risk, and management risk. But, credit risk stands out as the most detrimental of them all (Iyer, 1999). The risk of erosion in asset value due to simple default or non-payment of dues by the borrowers is credit risk or default risk (Sarma, 1996). Credit risk is acute in CCBs, since they are the important vessels of priority sector lending, through their member PACBs. One of the important limitations of the federal character of co-operative credit structure is

that the working of primary societies undermines the capacity of the organization at the immediate higher level to work actively (Rao, 1981). This problem is manifested more in the field of short-term co-operative credit. Heavy overdues at the primary level turn the societies dormant, creating a difficult situation for central banks to channel fresh credit (Puyalvanan, 1998). The Non performing Assets (NPA) level in the CCBs increases simultaneously. When the resources deployed by the CCBs and PACBs are locked up as NPAs and overdues respectively, the credit agencies are impaired from obtaining refinance from the apex lending agencies. Their capacity to undertake fresh lending is impaired, adding woe to the existing resource constraints (RBI, 1989). The lending capacity of the banks is adversely affected due to their inability to recycle the resources (Murty and Durga, 1998) or to raise more resources from higher financing agencies. Any liquidity crisis in co-operative banks will subsequently hinder capital formation in agriculture, which will decelerate economic development, (Georgekutty, 2000) since they play a major role in rural lending. As a defaulter, the borrower is cut-off from any access to credit from institutions. The borrower's productive enterprise is affected. A much higher price has to be paid for any informal source of credit. Thus, the agriculturist and other related enterprises suffer on account of non-availability of adequate credit supply for investment and working capital. Specifically, NPAs affect profitability, liquidity, and solvency of the bank. Continuous decline in profitability due to increase in NPAs would ultimately jeopardize the viability of the bank. Hence, it is imperative to curb overdues at the primary level. Delinquency of co-operative credit is due to default, both non-willful and willful. However, willful default is identified as the main reason for mounting overdues (RBI, 1981). Hence, a probe into the factors discriminating default would enable the reduction of overdues at the primary level, and NPAs at the CCB Level.

Default of Co-operative Credit

Delinquency of co-operative credit is the object of enquiry for many Committees and researches. These studies are replete with empirical information and methodological rigour. RBI (1974) estimated that more than three – fourths of the overdues were due to willful default. Dadhich (1977) found that the main causes for willful default were re-lending practices, which enabled to make profit out of the interest margins. The RBI conducted a special study in 1978, which made it clear that the accumulation of overdues was largely due to willful default and partly due to irregular lending, lack of supervision, indifferent recovery efforts, inaction against defaulters, unnecessary interference of State Governments in the recovery of the credit, domination by the vested interest of politicians and the elite. RBI (1981) while endorsing the findings of the ***Study Team on Overdues*** found that in many cases the default was willful and that too it was by the big farmers. Kalyankar (1983) in his study on crop loan overdues of co-operative finance revealed that 60% of the overdues were from 27% of the big farmers who had the capacity to repay but had neither the will nor the intention to do so. Balishter, Singh and Viswajit (1994), in their study in Agra District, found out that willful default was mainly confined to medium and large farmers to the extent of over 90 percent. Singh and Rawat (1999) predicted the default status of crop loan defaulters in Hamirpur district. The relative importance of the variables, viz., operational size of holding, initial amount of loan, gross income from agriculture, family consumption expenditure, in regard to their power to discriminate between the willful and non-willful defaulters was known. Ravichandran (2000) in his study in Tamil Nadu concluded that political exploitation

became the major cause for delinquency, compared to other causes for overdues, viz., crop failures, increasing family expenditure, and social obligations. A significant portion of defaulters were of the opinion that Government waiving schemes was the major cause for this delinquency. Das (2002) unveiled that improper utilization of loan and the insignificant repayment behavior had stood on the way of the development process of rural sector.

Methodology

This is an analytical study based on primary data. The primary data used was collected from sample respondents who were defaulters of co-operative credit. Data was collected by means of a pre-tested, structured interview schedule. The data so collected regarding loan details, overdues, default period, land holding, cultivation, etc. were counter-verified with the assistance of PACB officials. The details regarding farm income and expenditure were verified with the officials of the department of agriculture and district level averages from the Department of Economics and Statistics.

The study focuses on default of co-operative credit in Cuddalore Dist, Tamil Nadu. Since the level of short-term NPAs has been high, and CCBs do not finance short-term credit directly, and sample defaulters of sample PACBs have been studied. A multi-stage sampling procedure was adopted. Cuddalore district in Tamil Nadu has Cuddalore, Chidambaram, Panruti, Kattumannarkoil, Vriddhachalam, and Tittakudi taluks. Based on the recovery performance, the taluks were classified as taluks with high level of recovery (average rate of recovery above 90%), moderate recovery (75% to 90% recovery) and low level of recovery (recovery of less than 75%) respectively. From each category, one taluk was selected. Chidambaram, where recovery is low, Kattumannarkoil with moderate recovery and Cuddalore with high level of recovery

were the taluks selected for the study. There are a number of member PACBs of the bank. From each taluk two PACBs were selected. Thus, 6 PACBs were chosen from a population of 166 PACBs. PACBs maintain a register of default accounts. From the population of defaulters in the selected PACBs, 40 respondents were selected from each of the PACB, randomly with the help of Tippet's Table of Random Numbers. Thus, 240 respondents were chosen from the 6 PACBs representing the 3 taluks of the district. Chi- square test and Discriminant function analysis was used.

Identification of willful defaulters

The term 'willful default' means default of the debts when it is within the capacity of the borrower to repay but is not repaid. Liquidity and marketable surplus method (Dadhich, 1977, Toor, 1998, Ravichandran, 2000) was used to identify wilful defaulters. According to this method, repayment capacity means excess of income over expenditure.

Factors Discriminating Default (Univariate Analysis)

Various committees which studied co-operative credit and various researches, have concluded that willful default is the principal reason for mounting overdues in co-operatives. Overdues in PACBs subsequently increase the level of NPAs in CCBs.

The factors which discriminate defaulters, were probed. Various socio-economic, agro-economic and credit factors that could discriminate defaulters were studied through univariate analysis. Table 1 categorizes the defaulters on the basis of these factors. The following variables were identified as significant variables using chi square test through univariate analysis - social grouping, predominant occupation, landholding, amount borrowed, overdues, utilization, annual income, annual expenditure, type of crop, market surplus and expectation of waiver.

i. While 59% of the forward caste defaulters were willful, a majority of the defaulters in the other caste groups were non-willful.

ii. Among the willful defaulters 58.1% of them did not have agriculture as their predominant occupation and among non-willful defaulters 60.7% had agriculture as their predominant occupation.

iii. A simple majority i.e., 56.39% and 55.14% of the non-leaders and leaders were non-willful defaulters. The rest were willful defaulters.

iv. About 86.2% of the marginal farmers and 56.9% of the small farmers were non-willful defaulters. But 77.6% of the large farmers and 51.9% of medium farmers were willful defaulters A majority of large farmers were willful defaulters but a majority of marginal farmers were non-willful defaulters.

v. While 60.9% of willful defaulters had overdues of ₹ 20,001 and ₹ 30,000, 72.9% of the non-willful defaulters had overdues of less than ₹10,000. While 62.9% of defaulters who had used the loan fully for the specified purpose were willful, 59.1% of those who had used it partially were non-willful. The non-willful defaulters formed majority of the two groups who had diverted loans to various unproductive purposes. It was seen that 70.3% of those who had used loans for domestic consumption were non-willful defaulters and 60% who had diverted loans start other businesses were non-willful.

vi. The wilful default status was higher in the higher income groups.

vii. Among those cultivating only food crops, 60.1% were non-willful and among those cultivating only commercial crops, 75% were willful.

viii. The willful default status was high with those who had more marketable surplus. It was seen that 88.6% of those with market surplus of above ₹ 1,00,001 were willful defaulters.

ix. While 62.5% of those expecting waiver were non-willful, the two groups were equally distributed with regard to non-expectation.

Factors Discriminating Defaulters (Discriminant Function Analysis)

Discriminant function analysis can be used to predict to what extent a borrower of co-operative credit would default wilfully or non-willfully. An understanding of these factors would help predict default and subsequently willful default. The bank could use these factors to predict the repayment behaviour of the members thereby preventing default and willful default. The following variables which were identified as significant variables through univariate analysis were chosen for discriminant function analysis - social grouping, predominant occupation, landholding, amount borrowed, overdues, utilization, annual income, annual expenditure, type of crop, market surplus and expectation of waiver. The stepwise discriminant function analysis was carried out. In the first step of analysis, the variable annual income was taken up by the program. In the second step annual expenditure was taken. Landholding and amount of overdues were considered in the third and fourth steps respectively.

The unstandardized discriminant function coefficients estimated are shown in Table 2a. The group centroids based on unstandardized canonical discriminant functions evaluated at group means are indicated in Table 2b. With these coefficients,

it is possible to predict whether a borrower is a willful defaulter or a non-willful defaulter.

The significant variables considered for the analysis were coded as follows:

a) Landholding was coded as: marginal farmer (1), small farmer (2), medium farmer (3), and larger farmer (4)

b) Annual income was coded as: less than ₹ 50,000 (1), ₹ 50,001–1,00,000 (2), above ₹ 1,00,001 (3)

c) Annual expenditure was coded as: less than ₹50,000 (1), ₹50,001–1,00,000 (2), above ₹ 1,00,001 (3)

d) Amount of overdues was coded as: less than ₹ 10,000 (1), ₹ 10,001–20,000 (2), ₹ 20,001–30,000 (3), ₹ 30,001– 40,000 (4), above ₹ 40,001 (5).

Let us assume the case of a large landholder (as per coding – 4) with an annual expenditure of ₹ 50,001-1,00,000 (as per coding – 2) annual income above ₹ 1,00,001 (as per coding – 3) has overdues between ₹10,001–20,000 (as per coding – 2).

We can predict his / her default status thus, using the coefficients,

Default status = (-) 1.869 + 0.452 (Land – 4) – 1.162 (expenditure – 2) + 1.887 (income – 3) – 0.276 (overdues – 2)

= 2.724

Since the calculated value is more than zero (positive), based on the group centroid, we can predict the defaulter to be willful.

Further, the model was tested and the classification results are shown in Table 2c. The result indicates that 76.7% of the cases were correctly predicted by the discriminant function analysis. Therefore, the annual income, landholding, annual expenditure, and overdues were the four significant variables that could discriminate the defaulters as willful or non-willful.

Conclusion

The CCBs play a significant role in the economy of Tamil Nadu. But the increase in the credit disbursed through them was dampened by mounting gross NPAs. Three-fourth of the NPAs were short-term. Since short-term NPAs occupied a bulk of the NPAs, the study of default of co-operative credit in the PACBs in the district identified factors like annual income, landholding, annual expenditure and overdues as significant in discriminating between willful and non-willful defaulters. Stringent measures to control and prevent NPAs besides effective credit monitoring and use of effective execution of decrees besides various avenues of recovery, especially compromise settlements would contain the problem of NPAs effectively.

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Table 1
Factors Discriminating Defaulters

Variables	Defaulters			Calculated χ^2 Value	P Value
	Willful N = 105	Non-willful N = 134	Total N = 240		
1. Taluk					
Chidambaram	33 (41.3)	47 (58.8)	80 (100)		
Kattumannarkoil	36 (45)	44 (55)	80 (100)	0.413	0.814
Cuddalore	37 (46.3)	43 (53.8)	80 (100)		
2. Age					
Below 30 years	13 (32.5)	27 (67.5)	40 (100)		
31-40 years	38 (51.4)	36 (48.6)	74 (100)	4.291	0.232
41-50 years	36 (46.2)	42 (53.8)	78 (100)		
Above 51 years	19 (39.6)	29 (60.4)	48 (100)		
3. Education					
College	23 (60.5)	15 (39.5)	38 (100)		
Higher Secondary	15 (37.5)	25 (62.5)	40 (100)		
High School	27 (47.4)	30 (52.6)	57 (100)	8.300	0.217
Elementary	22 (36.1)	39 (63.9)	61 (100)		
No formal education	19 (43.2)	25 (%6.8)	44 (100)		
4. Social Grouping					
Forward Caste	46 (%9.0)	32 (41.0)	78 (100)		
Backward Caste	33 (37.1)	56 (62.9)	89 (100)	10.275	0.006
SC/ST	27 (37.0)	46 (63.0)	73 (100)		
5. No. of Dependents					
0	13 (43.33)	17 (56.67)	30 (100)		
1-3	70 (46.05)	82 (53.95)	152 (100)	0.706	0.702
4-7	23 (39.66)	35 (60.34)	58 (100)		
6. Predominant Occupation					
Agriculture	70 (39.3)	108 (60.7)	178 (100)	6.548	0.011
Others	36 (58.1)	26 (41.9)	62 (100)		
7. Leadership					
Non-leader	58 (43.61)	75 (56.39)	133 (100)	0.846	0.475
Leader	48 (44.86)	59 (55.14)	107 (100)		

Table 1 (Continued)

Variables	Defaulters			Calculated χ^2 Value	p Value
	Willful N = 105	Non-willful N = 134	Total N = 240		
8. Landholding					
Marignal	9 (13.8)	56 (86.2)	65 (100)		
Small	31 (43.1)	41 (56.9)	72 (100)	47.708	<0.001
Medium	28 (51.9)	26 (48.1)	54 (100)		
Large	38 (77.6)	11 (22.4)	49 (100)		
9. Amount Borrowed					
Less than ₹10000	7 (23.3)	23 (76.7)	30 (100)		
₹. 10001 – 20000	39 (41.1)	56 (58.9)	95 (100)		
₹. 20001 – 30000	24 (53.3)	21 (46.7)	45 (100)	8.689	0.069
₹. 30001 – 40000	13 (52.0)	12 (48.0)	25 (100)		
Above ₹. 40001	23 (51.1)	22 (48.9)	45 (100)		
10. Overdues					
Less than ₹ 10000	9 (27.3)	24 (72.7)	33 (100)		
₹ 10001 – 20000	41 (38.0)	67 (62.0)	108 (100)		
₹. 20001 – 30000	28 (60.9)	18 (39.1)	46 (100)	12.329	0.015
₹. 30001 – 40000	12 (52.2)	11 (47.8)	23 (100)		
Above ₹ 40001	16 (53.3)	14 (46.7)	30 (100)		
11. Period					
Less than 1 years	18 (60.0)	12 (40.0)	30 (100)		
1-3 years	66 (45.5)	79 (54.5)	145 (100)	6.166	0.104
3-6 years	18 (35.3)	33 (6.7)	51 (100)		
Above 6 years	4 (28.6)	10 (71.4)	14 (100)		
12. Borrowings from other sources					
No	49 (47.6)	54 (52.4)	103 (100)	6.166	0.104
Yes	57 (41.6)	80 (59.4)	137 (100)		
13. Utilization					
Full	22 (62.9)	13 (37.1)	35 (100)	5.811	0.016
Partial	84 (41)	121 (59.1)	205 (100)		

Table 1 (Continued)

Variables	Defaulters			Calculated χ^2 Value	p Value
	Willful N = 105	Non-willful N = 134	Total N = 240		
14. Diversion[a]					
i. Re-lending	14 (42.4)	19 (57.6)	33 (100)		
ii. Repayment of old debts	39 (43.3)	51 (56.7)	90 (100)		
iii. Domestic consumption	11 (29.7)	26 (70.3)	37 (100)	2.726	0.742
iv. Business / Profession	8 (40.0)	12 (60.3)	20 (100)		
v. Ceremonies	6 (50.0)	6 (50.0)	12 (100)		
vi. Medical	6 (46.2)	7 (53.8)	13 (100)		
15. Annual Income					
Less than ₹ 50000	14 (16.5)	71 (83.5)	85 (100)		
₹ 50001 – 100000	35 (4.2)	50 (58.8)	85 (100)	66.162	<0.001
Above ₹ 100001	57 (81.4)	13 (18.6)	70 (100)		
16. Annual Expenditure					
Less than ₹ 50000	30 (34.88)	56 (65.12)	86 (100)		
₹ 50001 – 100000	50 (46.30)	58 (53.70)	108 (100)	6.051	0.049
Above ₹ 100001	26 (56.52)	20 (43.48)	46 (100)		
17. Type of crop					
Food crops	55 (39.9)	83 (60.1)	138 (100)		
Commercial crops	9 (75.0)	3 (25.0)	12 (100)	5.895	0.052
Both	42 (46.7)	48 (53.3)	90 (100)		
18. Market surplus					
Less than R ₹ 50000	32 (25.8)	92 (74.2)	124 (100)		
₹ 50001 – 100000	35 (48.6)	37 (51.4)	72 (100)	52.82	<0.001
Above ₹ 100001	39 (88.6)	5 (11.4)	42 (100)		
19. Waiver					
Expecting	42 (37.5)	70 (62.5)	112 (100)	3.785	0.052
Not expecting	64 (50.0)	64 (50.0)	1.28 (100)		

Source : Primary Data

Note : [a] Only 205 respondents diverted the loans (Chidambaram – 65, Kattumannarkoil – 77, Cuddalore – 63)

Figures in parentheses indicate percentage to total

Table 2a
Unstandardized Canonical Discriminant Function Coefficients

Variables	Function (1)
Landholding	0.452
Annual Expenditure	-1.162
Annual Income	1.887
Overdues	-0.276
Constant	-1.869

Source : Computed from Primary Data

Table 2b

Unstandardized Canonical Discriminant Functions at Group Centroids[a]

Default Status	Function (1)
Willful	0.909
Non-willful	-0.719

Source : Computed from Primary Data
Note : [a]Unstandardized canonical discriminant functions evaluated at group means

Table 2c

Classification Results of Canonical Discriminant Analysis[a]

Default Status	Predicted Group Membership		Total
	Willful	Non-willful	
Original Count			
Willful	76	30	106
Non-Willful	26	108	134
Percentage			
Willful	71.7	28.3	100.0
Non-willful	19.4	80.6	100.0

Source : Computed from Primary Data
Note : [a]76.7% of original group cases are correctly classified