

## LOAN PURCHASE AND UTILIZATION BEHAVIOUR OF FARMERS IN A CREDIT COOPERATIVE SET-UP: A CASE STUDY OF GUJARAT STATE CO-OPERATIVE AGRICULTURAL AND RURAL DEVELOPMENT BANK LTD. (KHETI BANK)

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### ABSTRACT

Rural Co-operative credit system provide various loans to farmers for the improvement of their livelihood. The banks consider many parameters before sanctioning a loan to the farmers. Land holding is an important consideration while sanctioning an agriculture loan to a farmer, besides other parameters. Among the regular loan borrowers, it is better to understand their behaviour in terms of their land holdings. A primary research survey was conducted among 450 regular loan borrowers of The Gujarat State Co-Operative Agricultural & Rural Development Bank Ltd. (GSCARDB), from three different regions of Gujarat State covering six districts. Descriptive analysis, Chi-Square test, Correlation analysis and Analysis of Variance (ANOVA) are carried out to understand the differences among the farmers in terms of their land ownership. The study findings shows that medium and large farmers segments are better aware of working of GSCARD bank. Majority of marginal farmers have borrowed the agricultural loan multiple times. Good and very good ratings on the loan services of GSCARD bank are more seen from large farmers segment. Majority from marginal, small and medium segments are 'satisfied' while majority from large farmers are 'high satisfied' with GSCARD bank. There is a significant difference among the four farmer segments in terms of average loan amount taken. Strong relationship exists among large farmers on their rating of loan services and satisfaction level. Banks perform many checks on a loan seeker before sanctioning a loan. Even then, there are loan defaulters who do not pay the loan instalments for a long time. This study aimed to understand their profile and behaviour. This study finding are based on the survey conducted among 150 loan defaulters of The Gujarat State Co-Operative Agricultural & Rural Development Bank Ltd. (GSCARDB), from three different regions of Gujarat. This study was conducted in six districts of Gujarat State. Descriptive analysis, correlation analysis, Chi-Square test and Analysis of Variance (ANOVA) are carried out. The study finding concludes that most loan defaulters are >45 years of age having more years of experience in agriculture. They have not gone through any kind of special training. They have taken loan for a medium to long term period (3 to 5 years and more). It is further observed that age, experience in agriculture, income per annum and number of times loan borrowed have no significant impact on the loan overdue amount. The loan defaulters from the three regions of Gujarat State behave similarly with no significant difference in terms of their opinion on overall loan services rating of the GSCARD bank.

**Keywords:** loan borrower, loan defaulter, co-operative, agriculture, land ownership, anova, chi-square, correlation analysis

### INTRODUCTION

GSCARD bank was established in the year 1951 with its Head Office at Rajkot in the erstwhile State of Saurashtra for providing loans to the tenant farmers in the five districts of the State of Saurashtra. The name of the bank at the time of its inception was The Saurashtra State Central Cooperative Land Mortgage Bank Limited, Rajkot. Consequent upon the bifurcation of the Bombay Sate and on formation of a separate State of Gujarat in the year 1960, this bank had extended its jurisdiction to the whole of Gujarat State in 1961

and accordingly the name of the bank was changed to The Gujarat State Central Cooperative Land Mortgage Bank Ltd., Ahmedabad. To implement the developmental banking from mortgage banking, the bank name was amended in 1965, as Gujarat State Cooperative Land Development Bank Ltd. Subsequently, in the eighties, the bank has started financing for rural non-farm sector activities also. Therefore, the name was restyled appropriately to the present one since 1990.

Peculiar circumstances responsible for the establishment of this bank were the necessity to have banking

agency to provide loans to tenant cultivators to enable them to purchase occupancy rights over the land tilled by them under the Saurashtra Land Reforms Act, 1949. In the initial stage of lending, this bank provided loans amounting to Rs. 2640 million to nearly 56000 tenant cultivators, which enabled them to become owners of the land that had been cultivated by them for years.

This bank is an apex institution in the cooperative structure in the State of Gujarat for providing investment finance for the development of agriculture and allied activities and also rural non-farm sector activities. The bank adopted the unitary structure and does its business through the network of the branches numbering 176. It has 17 district offices to control the working of branches in their jurisdiction and to ensure the advantages of decentralized administration. The bank's registered office is in the city of Ahmedabad, Gujarat.

The bank is adopting production oriented loaning system and gives loans for productive purposes which enables the farmers to get sustained rise in his farm output and income. Sanction of loan is subject to technical feasibility and financial viability of the proposed activity. Repayment period of loan is decided on the basis of the economic life of the assets to be created coupled with the repayment capacity of the borrower as per the guidelines of NABARD. Security of the loan is agricultural land and the assets created by the loan, which are taken in to mortgage by the bank.

The Gujarat State Co-Operative Agriculture & Rural Development Bank Ltd. (GSCARDB) provides investment credit for the improvement in rural based farmers across the State of Gujarat. The bank finances medium and long-term agricultural loans to farmers. Land holdings of farmers plays an important role in sanctioning the agricultural loan and the loan amount. The loan borrowers become regular once they start to pay the loan instalments regularly and payback completely. It is better to understand the behaviour of these regular loan borrowers by their land ownership, which would help the bank to frame suitable policy and new schemes for the development of rural farmers.

This rural cooperative credit system works as Long Term Co-Operative Credit Structure for providing investment credit to rural farmers. These are the oldest agriculture credit institution in the country. These types of SCARDBs in our country are operating in 16 States through 602 PCARDBs in 8 States and 1301 branches in others. All such banks which functions under LTCCS are affiliated with National Co-Operative Agriculture and Rural Development Banks Federation Ltd., Navi Mumbai.

GSCARD bank has observed that there are considerable numbers of loan defaulters in various locations

of Gujarat State, wherein they have disbursed the loan. Any financial institution should be aware of their loan borrowers' detailed profile and the profile of loan defaulters. An attempt is made here to learn about the profile and behaviour of loan defaulters of GSCARD Bank.

## **OBJECTIVES**

- (1) To understand the differences and commonalities among the regular loan borrowers of GSCARD bank in terms of their land ownership segments
- (2) To understand the profile of loan defaulters of GSCARD Bank in Gujarat State

## **METHODOLOGY**

A quantitative primary research survey was conducted among regular loan borrowers of GSCARD bank using a pre structured survey questionnaire. North Gujarat, Lower Middle & South Gujarat, and Saurashtra- kutchh are the three zones selected for the study. The research was conducted among the 15 loan borrowers from each 30 branches of GSCARD Bank (North Gujarat=10 branches, Lower Middle and South Gujarat=10 branches, 10 branches from Saurashtra-Kutchh). In total, 450 regular loan borrowers are contacted individually for the survey. To understand the profiling of loan defaulters, from each selected 30 branches, 5 defaulters were selected, hence the total number of loan default respondents were 150. Primary data were received from empirical study through grass root level loan borrowers and loan defaulters.

### **Hypothesis framing for loan borrowers**

Hypothesis-1 : The average agriculture loan amount is same among the different land ownership segments of regular loan borrowers.

Hypothesis-2 : Regular loan borrower's rating on loan services of GSCARD bank is independent of their land ownership segments.

Hypothesis-3 : The loan services rating and overall satisfaction level with GSCARD bank is strongly related across the farmer land ownership segments.

### **Descriptive analysis loan borrowers profiling comparisons of loan borrowers among the land ownership segments**

The major findings from the descriptive analysis of regular loan borrowers are the following:

The land ownership segments is spread across three selected regions of Gujarat. The survey coverage includes 42% of small farmers having 1 to 2 hectares of land, 31% of medium farmers having 2 to 4 hectares of land. Marginal and large farmers are comparatively less.

Table 1. Land ownership segments

(n=450)

Land ownership segments	No. of farmers	Percent
Marginal Farmers (Up to 1 Ha)	53	12.00
Small Farmers (1 to 2 Ha)	190	42.00
Medium Farmers (2 to 4 Ha)	138	31.00
Large Farmers (More than 4 Ha)	69	15.00
<b>Total</b>	<b>450</b>	<b>100.00</b>

(Source: Survey Data)

The experience in agriculture is distributed as below:

Table 2 : Experience in agriculture (Years)

(n=450)

Experience in agriculture	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
Up to 10 years	07.5%	05.3%	02.2%		03.8%
10.1 to 15 years	09.4%	08.9%	02.9%	02.9%	06.2%
15.1 to 20 years	20.8%	20.5%	13.8%	15.9%	17.8%
20.1 to 25 years	13.2%	13.7%	15.2%	14.5%	14.2%
25.1 to 30 years	24.5%	18.4%	16.7%	24.6%	19.6%
30.1 to 35 years	05.7%	06.8%	10.9%	07.2%	08.0%
35.1 to 40 years	05.7%	11.6%	18.8%	21.7%	14.7%
40.1 to 45 years	03.8%	06.8%	09.4%	04.3%	06.9%
45.1 to 50 years	09.4%	04.2%	05.1%	05.8%	05.3%
More than 50 years		03.7%	05.1%	02.9%	03.6%

(Source: Survey Data)

Majority (33.8%) of farmers have 20 to 30 years of experience in agriculture. Experience of 35.1 to 40 years is observed more among large farmers (21.7%).

Table 3. Education of farmers

Education	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
Illiterate	01.9%	06.3%	06.5%	05.8%	05.8%
Primary	39.6%	41.1%	34.8%	42.0%	39.1%
High School	39.6%	41.1%	44.9%	44.9%	42.7%
Diploma	-	-	00.7%	-	00.2%
Graduate	18.9%	10.0%	12.3%	05.8%	11.1%
Post Graduate	-	01.6%	00.7%	01.4%	01.1%

(Source: Survey Data)

Primary and high school qualified loan borrower farmers are found more, (39.1% and 42.7% respectively). Among medium and large farmers, high schools qualified

are found more (44.9%). Comparatively more graduates are found in marginal farmers (18.9%).

**Table 4 : annual income of farmers**

(n=450)

Annual Income	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
Up to ₹ 1,00,000	13.2%	04.2%	-	-	03.3%
₹ 1,00,001 to ₹ 2,00,000	39.6%	38.4%	22.5%	18.8%	30.7%
₹ 2,00,001 to ₹ 4,00,000	41.5%	48.4%	52.2%	42.0%	47.8%
₹ 4,00,001 to ₹ 8,00,000	05.7%	08.4%	24.6%	31.9%	16.7%
₹ 8,00,001 to ₹ 16,00,000	-	0.5%	0.7%	07.2%	01.6%

(Source: Survey Data)

Around 48% of farmers have an annual income of Rs. 2, 00,001 to Rs.4, 00,000. Small and medium farmers have comparatively higher income than marginal farmers.

**Table 5 : Cultivation method followed**

(n=450)

Cultivation method	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
Traditional	62.3%	72.6%	66.7%	78.3%	70.4%
Modern	37.7%	27.4%	33.3%	21.7%	29.6%

(Source: Survey Data)

Traditional method of agriculture is mainly followed by respondents as stated by 70.4% and the rest 29.6% follow modern method of agriculture.

**Table 6. Awareness on working of GSCARD**

(n=450)

Working Awareness of GSCARD	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
Yes	88.7%	94.7%	97.8%	100.0%	95.8%
No	11.3%	5.3%	2.2%	-	4.2%

(Source: Survey Data)

Almost all from medium and large farmers segments are aware of working of GSCARD bank. About 11.3% of marginal farmers are not aware of it. Loan Purchasing behaviour:

**Table 7 : Number of times loan borrowed from GSCARD Bank**

(n=450)

No. of times loan borrowed	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
One	26.4%	37.4%	20.3%	37.7%	30.9%
Two	41.5%	32.1%	27.5%	18.8%	29.8%
Three	20.8%	17.4%	30.4%	24.6%	22.9%
Four	11.3%	08.4%	13.8%	11.6%	10.9%
Five and more	-	04.7%	08.0%	07.2%	05.6%

(Source: Survey Data)

Nearly 42% from marginal farmers have borrowed the agricultural loan twice. Three times loan borrowing is reported by more from medium farmer's category (30.4%).

More than 90% of farmers in each segment are aware of loan schemes offered by the GSCARD bank. Almost

all except some farmers from medium and Large Farmers are aware of such schemes. Similarly, more than 90% from each segment have visited the bank branch at least once for getting loan. Some farmers from small and medium land ownership segments have reported two times visit to the bank branch for the loan purpose.

(n=450)

**Table 8 : Loan Period (Years)**

Loan Period (years)	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
One year	01.9%	05.3%	05.8%	02.9%	04.7%
Two years	-	-	-	01.4%	00.2%
Three years	64.2%	49.5%	48.6%	26.1%	47.3%
Four years	01.9%	00.5%	-	-	00.4%
Five years	28.3%	35.3%	31.9%	43.5%	34.7%
Seven years	01.9%	02.1%	04.3%	15.9%	04.9%
Nine years	01.9%	06.3%	08.7%	07.2%	06.7%
Ten years	-	01.1%	00.7%	02.9%	01.1%

(Source: Survey Data)

Three years period loan was commonly borrowed by marginal (64.2%), small (49.5%) and medium farmers (48.6%), while majority of large farmers (43.5%) have reported to taken loan of five years period.

The time lag for the loan varies among the farmer segments as below:

**Table 9 : Time lag for loan approval**

(n=450)

Time lag for loan	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
Up to 15 days	56.6%	53.2%	50.0%	47.8%	51.8%
16 days to 30 days	28.3%	33.7%	35.5%	43.5%	35.1%
31 days to 60 days	11.3%	12.1%	13.0%	05.8%	11.3%
More than 60 days	03.8%	01.1%	01.4%	02.9%	01.8%

(Source: Survey Data)

- More than 50% of farmers from each segment have reported a time lag of up to 15 days. Considerable portions (43.5%) from large farmers have reported a time lag of 16 to 30 days as well.

**Table 10 : Opinion on repayment period of loan**

(n=450)

Repayment period	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
Sufficient	96.2%	96.3%	95.7%	97.1%	96.2%
Not sufficient	03.8%	03.7%	04.3%	02.9%	03.8%

(Source: Survey Data)

Across all the four farmer segments, more than 95% of respondents have stated that the loan tenure for repayment of loan was sufficient for them.

**Table 11 : Feedback on loan procedure of GSCARD bank** (n=450)

Loan procedure	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
<b>Rigid and complicated</b>	05.7%	05.8%	01.4%	04.3%	04.2%
<b>Moderate</b>	58.5%	51.6%	44.9%	34.8%	47.8%
<b>Simple</b>	35.8%	42.6%	53.6%	60.9%	48.0%

(Source: Survey Data)

- Overall, for about 48% of farmers the loan procedure was moderate, and other 48% have found it to be simple. Nearly 61% from large farmers segment have stated that the loan procedure is simple, while 58.5% of marginal farmers have reported it as moderate.

**Table 12 : Feedback on loan recovery procedure of GSCARD bank** (n=450)

Recovery procedure	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
<b>Liberal</b>	26.4%	20.0%	18.1%	47.8%	24.4%
<b>Moderate actions</b>	45.3%	32.6%	43.5%	36.2%	38.0%
<b>Strict recovery procedure</b>	26.4%	44.7%	37.0%	14.5%	35.6%
<b>Very Strict actions</b>	01.9%	02.6%	01.4%	01.4%	02.0%

(Source: Survey Data)

The loan recovery procedure is found to be moderate for 38% of farmers at overall level. Majority of large farmers (47.8%) have stated it as liberal, 45.3% have mentioned it as moderate, and 44.7% from small farmers mentioned it as strict recovery procedure.

**Table 13 : Feedback on rating of loan services of GSCARD bank** (n=450)

Rating of loan services of GSCARD bank	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
<b>Moderate</b>	07.5%	09.5%	06.5%	01.4%	07.1%
<b>Good</b>	45.3%	53.7%	46.4%	31.9%	47.1%
<b>Very good</b>	47.2%	36.8%	47.1%	66.7%	45.8%

(Source: Survey Data)

About 93% of farmers have rated the bank’s loan services as good and very good. Good and very good ratings are more seen from large (66.7%) farmer segment.



Table 14 : Overall satisfaction with GSCARD bank

(n=450)

Overall Satisfaction with GSCARD bank	Marginal farmers (Base=53)	Small farmers (Base=190)	Medium farmers (Base=138)	Large farmers (Base=69)	Total (450)
Highly dissatisfied	01.9%	-	-	-	00.2%
Neutral	-	01.6%	02.2%	01.4%	01.6%
Satisfied	52.8%	50.0%	51.4%	29.0%	47.6%
Highly satisfied	45.3%	48.4%	46.4%	69.6%	50.7%

(Source: Survey Data)

Similarly, more than 95% have expressed higher level of satisfaction with the GSCARD bank. Majority from marginal, small and medium segments are 'Satisfied' while majority (69.6%) from large farmers are 'Highly satisfied' with GSCARD bank.

#### Hypothesis testing for regular loan borrowers

These tests was performed with 95% confidence interval and 5% error margin ( $\alpha=0.05$ ).

Hypothesis-1 : The average agriculture loan amount is same

among the different land ownership segments of regular loan borrowers.

Ho : There is no significant difference among the land ownership segments in terms of the average loan amount taken from the bank.

H1 : There is a significant difference among the land ownership segments in terms of the average loan amount taken from the bank.

Analysis of variance test (ANOVA) is used here.

The results are presented here.

Table 15 : ANOVA: Average loan amount by farmer segments

(n=450)

Farmer segment	n	Average loan amount (₹ 000')	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Marginal Farmers	53	161.62	092.05	12.64	136.25	186.99
Small Farmers	190	235.75	106.38	07.72	220.53	250.98
Medium Farmers	138	306.65	162.39	13.82	279.31	333.98
Large Farmers	69	386.97	229.70	27.65	331.79	442.15
<b>Total</b>	<b>450</b>	<b>271.95</b>	<b>161.79</b>	<b>07.63</b>	<b>256.96</b>	<b>286.94</b>

(Source: Survey Data)

The lowest mean value here is Rs. 161.62 (000') from marginal farmers, and the highest mean value is Rs. 386.97 (000') is from large farmers. This shows that the average loan amount taken by these farmers segments varies. However, it needs to be proved statistically.

The Homogeneity of Variance Assumption is further checked.

Table 16 : ANOVA table (Using Tukey HSD)

		Sum of Squares	Degree of freedom	Mean Square	F	Sig.
Loan amount (₹ 000)	Between Groups	1973056.2	3	657685.4	29.992	0.001
	Within Groups	9780172.6	446	21928.7		
	Total	11753228.7	449			

(Source: Survey Data)

Variable	Levene Statistic	df1	df2	Sig.
Loan amount (₹)	13.917	3	446	0.001

Here the p-value is 0.001, which is lesser than 0.05.

Hence it is concluded that the variances of loan amount taken are significantly different.

Here, the mean square is arrived by dividing the sum of square by its degrees of freedom. F ratio is calculated by dividing mean square between-groups by mean square within-groups. The final column gives the significance of the F ratio, the p value. If the p value is less than or equal to  $\alpha$  level, then we can reject  $H_0$  that all the means are equal.

It is observed here that the p-value =0.001 is lesser than 0.05, Hence the null hypothesis is rejected. There is a significant difference among the four farmer segments in terms of average loan amount taken. The loan size is directly related with the land holding ownership. Small Farmers are given lesser amount while larger farmers are given higher loan amount.

Hypothesis-2 : Regular loan borrower’s rating on loan services of GSCARD bank is independent of their land ownership segments.

Chi-Square test of independence of attributes is used to examine this hypothesis,

$H_0$  : There is no significant difference among the farmers’ category in terms on their response on rating of loan services of GSCARD bank.

$H_1$  : There is a significant difference among the farmers’ category in terms on their response on rating of loan services of GSCARD bank.

**Table 17 : Chi-Square analysis: Observed and expected frequencies** (n=450)

Rating of bank loan services		Farmers Category - Land Holding				Total
		Marginal farmers	Small farmers	Medium farmers	Large farmers	
Moderate	Count	4	18	9	1	32
	Expected Count	3.8	13.5	9.8	4.9	32.0
Good	Count	24	102	64	22	212
	Expected Count	25.0	89.5	65.0	32.5	212.0
Very good	Count	25	70	65	46	206
	Expected Count	24.3	87.0	63.2	31.6	206.0
Total	Count	53	190	138	69	450
	Expected Count	53.0	190.0	138.0	69.0	450.0

(Source: Survey Data)

	Value	Degree of freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.841	6	0.003
a. 2 cells (16.7%) have expected count less than 5.			

The chi-square value as per Chi-square test is 19.84 (6 degrees of freedom, 5% significance level). The significant value  $p=0.003$  is lesser than 0.05. The null hypothesis has to be rejected. It is concluded that there is a significant difference among the four farmer categories on their response on ratings of bank loan services. More of very good ratings are seen from large farmers.

Hypothesis-3 : The loan services rating of the bank and overall satisfaction level with the bank are strongly related across the farmer land ownership segments.

Correlation analysis is used to examine this hypothesis statement.

**Table 18 : Correlation analysis: Rating on loan services vs. Overall satisfaction with the bank branch** (n=450)

Correlation analysis	Correlation with satisfaction level with the bank branch				
	All farmers	Marginal farmers	Small farmers	Medium farmers	Large farmers
No. of farmers	450	53	190	138	69
Rating of loan services of GSCARD bank	0.519**	0.207	0.536**	0.579**	0.655**

(Source: Survey Data)



At overall level, the correlation analysis shows that there is a moderate level relationship between loan services rating and satisfaction level with the bank branch and it is significant at 0.01 level. Among marginal farmers, there is no strong relationship exists. Comparatively strong relationship exists among large farmers on their rating of loan services and satisfaction level, and it is significant at 0.01 level. Moderate level relationship between rating of loan services and satisfaction level is shown in small farmers and medium farmers, and they are significant at 0.01 level.

### **Hypotheses framing for loan defaulters**

Hypothesis-1 : Age, experience in agriculture, income per annum and number of times loan borrowed have significant impact on the loan overdue amount

Hypothesis-2 : Overall loan services rating of the GSCARD bank: There is no significant difference among the zones in terms of the overall loan services rating on the bank

Hypothesis-3 : Loan recovery procedure is independent of land ownership

Hypothesis-4 : Defaulters' rating on loan services of GSCARD bank is independent of their land ownership segments.

### **Descriptive analysis loan defaulters**

The major findings from the descriptive analysis of loan defaulters are the following:

#### **Profiling of loan defaulters**

Out of 150 loan defaulters, majority (37%) belongs to the age group 56 to 65 years, followed by 45 to 55 years with 30%. About 52% of 150 defaulters belong to OBC category, followed by General category with 25%. Nearly 57% of them have primary school education. Land ownership shows that 51% of them are small farmers, owns 1.1 to 2 Hectare of land, and 29% of them are medium farmers who have 2.1 to 4 Hectare of land. About 34% have agriculture experience of 26 to 35 years. Of them, 75% follow traditional agricultural practices and the rest 25% follow modern techniques. Majority (47%) of the defaulter have an annual income of Rs. 1.1 to 2 Lakh, followed by 29% reported an annual income of Rs 2.1 to 4 Lakh. Almost all except a few have not gone through any special training (97%). Most of the defaulters (95%) know about how GSCARD bank is working, and they

know the various schemes of the bank.

### **Loan Borrowing**

Nearly 47% have reported that they have borrowed loan once, and 32% have stated that they took the loan twice. 76% of them have utilized the loan taken for the actual purpose it was taken, while 24% have not. The loan amount ranges from Rs. 50,000 to Rs. 8, 00,000. Nearly 45% have taken Krishi Vikas Loan. For about 78% of defaulters, the loan tenure is 3 to 5 years. 70% of loaners have mentioned that their agricultural income is increased due to impact of utilization of credit facilities, and 30% have stated that there is no change of agricultural income for them.

Majority (56%) of the defaulters have indicated that the loan procedure followed by bank was moderate, and 40% have mentioned that it was simple and easy procedure. About 51% have stated that loan recovery procedure followed by the bank is strict, while 31% have mentioned that it is moderate.

About 85% of them have rated the bank's loan services as good and very good. This leads that more than 90% of them are satisfied with GSCARD bank.

### **Hypothesis testing for loan defaulters**

Hypothesis-1 : ge, experience in agriculture, income per annum and number of times loan borrowed have significant impact on the loan overdue amount.

Hypothesis-2 : There is no significant difference among the zones in terms of the overall loan services rating of the bank.

Hypothesis-3 : Loan recovery procedure is independent of land ownership category.

Hypothesis-4 : Defaulters' Rating on Loan Services of GSCARD bank is independent of their land ownership category.

Test was carried out with 95% confidence interval and 5% error margin ( $\alpha=0.05$ ).

Hypothesis-1 : Age, experience in agriculture, income per annum and number of times loan borrowed have significant impact on the loan overdue amount.

Correlation analysis is used to test this hypothesis.

		Correlation value with Overdue Loan Amount	
Age	Pearson Correlation	0.021	
	Sig. (2-tailed)	0.803	>0.05
Experience in Agriculture (Years)	Pearson Correlation	0.034	
	Sig. (2-tailed)	0.682	>0.05
Income per Annum	Pearson Correlation	0.203*	
	Sig. (2-tailed)	0.013	
No. of times Loan borrowed	Pearson Correlation	0.154	
	Sig. (2-tailed)	0.060	>0.05

The correlation coefficient values (0.021, 0.034, 0.154) indicate that age, experience in agriculture, income per annum and number of times loan borrowed have no strong relationship with loan overdue amount. The significant values are more than 0.05. It is concluded that these aspects have no major impact or relationship with loan overdue amount.

Hypothesis-2 : Ho: There is no significant difference among the zones in terms of the overall loan services rating of the bank.

H1: There is a significant difference among the zones in terms of the overall loan services rating on the bank.

Analysis of variance test (ANOVA) is used here. The results are presented here.

(n=150)

Zone	N	Mean: The Overall Loan services rating on the GSCARD bank (out of 5)	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
North Gujarat	50	4.02	0.589	0.083	3.85	4.19
Lower Middle & South Gujarat	50	4.26	0.664	0.094	4.07	4.45
Saurashtra-kutchh	50	4.04	0.638	0.090	3.86	4.22
Total	150	4.11	0.636	0.052	4.00	4.21

The mean values for these zones are above 4 and below 4.3. The standard deviation values are reasonable.

The Homogeneity of Variance Assumption is further checked.

Variable	Levine Statistic	df1	df2	Sig.
Overall loan services rating of the GSCARD bank	3.039	2	147	0.051

Here the p-value is 0.051, which is greater than .05. Hence it is concluded that the variances of overall loan

services rating of three zones are same.

**ANOVA Table (Using Tukey HSD)**

(n=150)

		Sum of Squares	Degree of freedom	Mean Square	F	Sig.
Overall loan services rating of the GSCARD bank	Between Groups	1.773	2	0.887	2.227	0.111
	Within Groups	58.520	147	0.398		
	<b>Total</b>	<b>60.293</b>	<b>149</b>			

Here, the mean square is arrived by dividing the sum of square by its degrees of freedom. F ratio is calculated by dividing mean square between-groups by mean square within-groups. The final column gives the significance of the F ratio, the p value. If the p value is less than or equal to  $\alpha$  level, then we can reject Ho that all the means are equal.

Hypothesis-3 : Loan recovery procedure is independent of land ownership.

To examine this hypothesis, Chi-Square test of independence of attributes is used.

Ho : There is no significant difference among the farmers' category on their response on recovery procedure.

It is observed here that the p-value =0.111 is greater than 0.05 (5% level). Hence the null hypothesis is accepted that there is no significant difference among the three regions in terms of overall loan services rating of the GSCARD bank.

H1: There is a significant difference among the farmers' category on their response on recovery procedure.

Farmers' Category	Recovery procedure Opinion			Total
	Very strict actions	Strict recovery procedure	Moderate actions	
Marginal farmer (Up to 1 Hectare)	03	11	05	19
Small farmer (1.1 to 2 Hectare)	13	41	22	76
Medium farmer (2.1 to 4 Hectare)	07	20	17	44
Large Farmer (More than 4 Hectare)	04	05	02	11
<b>Total</b>	<b>27</b>	<b>77</b>	<b>46</b>	<b>150</b>

	Value	Degree of freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.545 <sup>a</sup>	6	0.603
a. 3 cells (25.0%) have expected count less than 5.			

The chi-square value as per Chi-square test is 4.545 (6 degrees of freedom, 5% significance level). The significant value  $p=0.603$  is greater than 0.05. The null hypothesis has to be accepted when the p-value is greater than the significance level (0.05). In this case, the null hypothesis has to be rejected. It is concluded that there is a significant difference among the four farmer categories on their response on recovery procedure.

Hypothesis-4: Defaulters' rating on loan services of GSCARD bank is independent of their land ownership category.

To examine this hypothesis, Chi-Square test of independence of attributes is used.

Ho : There is no significant difference among the farmers' category on their rating on the loan services of GSCARD bank

H1: There is a significant difference among the farmers' category on their rating on the loan services of GSCARD bank

(n=150)

Farmers' Category	Rating on Loan services of GSCARD Bank			Total
	Moderate (average)	Good	Very good	
Marginal Farmer (Up to 1 Hectare)	03	08	08	19
Small Farmer (1.1 to 2 Hectare)	12	48	16	76
Medium Farmer (2.1 to 4 Hectare)	07	26	11	44
Large Farmer (More than 4 Hectare)	01	06	04	11
	<b>23</b>	<b>88</b>	<b>39</b>	<b>150</b>

	Value	Degree of freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.567 <sup>a</sup>	6	0.600
a. 4 cells (33.3%) have expected count less than 5			

The chi-square value as per Chi-square test is 4.567 (6 degrees of freedom, 5% significance level). The significant value  $p=0.600$  is greater than 0.05. The null hypothesis has to be accepted when the p-value is greater than the significance level (0.05). In this case, the null hypothesis has to be rejected. It is concluded that there is a significant difference among the four farmer categories on their rating on the loan services of GSCARD bank.

## CONCLUSION

GSCARD Bank is rural cooperative credit structure dispensing investment credit to farmers of the Gujarat State through 176 branches as its retail credit delivery units.

Bank performs through unitary structure. Powers for the management of the bank are vested with Board of Directors of the bank. Major areas hampering the progress of GSCARD Bank are low recovery, overdue, rising NPAs, lesser growth in loans & advances, limited scope for deposit mobilization, non-availability of Government guarantee, lack of skilled and professional staff, acute shortage of staff, weak internal systems, checks and controls, resource crunch for expansion of Credit, non-computerization, not availability of interest subvention scheme and high number of loss making branches.

The farmers are classified based on the area of land they own. Majority of respondent loan borrower farmers have long

years of experience (20 to 30 years) in agricultural activities. Very high education (graduate and more) are found to be less among the farmers. The annual income is pretty low (₹ 2, 00,001 to Rs.4, 00,000) for many farmers as compared to other occupations. As these farmers have taken loan from GSCARD bank, almost all from medium and large farmers segments are aware of working of GSCARD bank. Majority of marginal farmers have borrowed the agricultural loan twice. More than 90% of farmers in each segment are aware of loan schemes offered by the GSCARD bank. The loan procedure was moderate for nearly half portion of farmers covered, while rest of them said it is simple. The loan recovery procedure is found to be moderate for 38% of farmers. Good and very good ratings are more seen from large farmers segment. Majority from marginal, small and medium segments are 'Satisfied' while majority from large farmers are 'Highly satisfied' with GSCARD bank.

There is a significant difference among the four farmer segments in terms of average loan amount taken. Lesser land owners have got less amount of loan and larger land owners have got high amount of loan.

More of very good ratings of the bank are seen from large farmers. Comparatively strong relationship exists among large farmers on their rating of loan services and satisfaction level. Land ownership is directly related to the loan amount, as the bank considers land holdings as an important parameter for loan sanctioning.

Major findings on the loan defaulters' profiling indicate that majority are > 45 years of age, attained primary school level education, having at least 2 hectare of land which falls under category of marginal & small farmers and have higher agricultural experience. They have not gone through any kind of special training. Most of them are aware of the loan schemes of GSCARD bank and functioning of the bank. Majority have taken Krishi Vikas Loan (KVL), taken the loan for a medium to long term period (3 to 5 years). Majority have stated that the loan recovery procedure of the bank is strict.

Age, experience in agriculture, income per annum and number of times loan borrowed have no significant impact on the loan overdue amount. There is no significant difference among the three regions in terms of overall loan services rating of the GSCARD bank. It is concluded that there is a significant difference among the four farmer categories on their response on recovery procedure and their rating on the loan services of GSCARD bank.

## **RECOMMENDATIONS**

All the loan borrower farmers should be given awareness about different loan schemes, processing of loan

and repayment schedules, providing trainings to the borrower farmers. Short term loan products and computerization (CBS) should be introduced by GSCARD Bank to facilitate borrowers. This will further increase the portfolio, reputation and trust on GSCARD across all levels of borrower farmers.

To reduce the loan defaulters in GSCARD bank, it is suggested that strict procedures as per norms should be followed while sanctioning the loans. Also, incentives or loan interest rebate shall be provided for those who repay the loan instalments regularly. Strengthening of loan policy, effective loan appraisal, exclusive monitoring of loans disbursed could further control the number of loan defaulters.

Bank requires urgent need of reforms to address deficiencies in its design as a non-resource based institution with the only business of providing term loans to farmers. The GSCARD Bank is required to bestow immediate attention for taking corrective steps to tackle the above major areas of concern for up scaling the business and financial performance. GSCARD Bank need to prepare effective action plans to step up lending, resource mobilization and timely recovery of loan instalments. GSCARD Bank shall seek enhanced support from Government of Gujarat and NABARD.

## **POLICY IMPLICATIONS**

The research can be useful for SCARDB in Gujarat for strengthening their position for performance planning, monitoring and implementing effective and timely action plans to step up their business activities. This research can also be useful to authorities related to GSCARDB and policy makers as well as researchers.

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## **CONFLICT OF INTEREST**

The authors of the paper declare no conflict of interest.

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