

## Measurement of Credit Constraint to Farming Households: A Case Study of Jaipur and Rajsamand Districts in Rajasthan (An Empirical Analysis)

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### Abstract

Agricultural credit is considered a critical input for agricultural development. Keeping in view the importance of agricultural credit in India, government constituted different committees from time to time for suggesting ways and means to increase the credit accessibility to farmers. Following from their recommendations number of policy instruments were put in place to ensure effective and inclusive access to bank credit. These policies have indeed yielded dividends but failures of equitable access to credit are disquieting. Indian agriculture is the source of livelihood of more than 90% of small & marginal farmers. These farmers do not have enough source of money to make adequate investment during production cycle. These farmers face constraints in accessing the credit from banks. Thus, in this paper an attempt has been made to identify the problems and constraints faced by the farmers in Jaipur and Rajsamand districts of Rajasthan in accessing agriculture credit from commercial banks. Multi stage random sampling has been used to collect the sample from both the districts. The result revealed that the farmers are facing constraints in accessing credit from banks. The factors that determine the accessibility of credit are: Age, Age 2, Sex, Education, HH Size, Livestock, HH Assets, Interest Rate, Complicated Procedure, Membership of Cooperatives and Distance from the Bank. The Study suggested that, there is need to increase the flow of credit by removing all constraints, both macro and micro, in accessing credit.

**Keywords:** Agriculture Credit, Farmers, Probit Model, Commercial Banks, Rajasthan

### 1. Introduction

India's formal credit delivery system for agriculture has an aged history starting with the setting up of cooperative credit societies during 1904. However, coverage of societies to meet the credit requirement was so limited in certain pockets and negligible that almost entire credit requirement of the farming community was met by the non-institutional sources till 1950s. Thus, after some time the recommendations of All India Rural Credit Survey Committee (1951-54) laid the foundation of the institutional framework for establishing a sound credit delivery system for financial agriculture and allied activities. Therefore, the need arose to provide rural credit to farmers and agricultural labour for agriculture practices. Rural credit is always referred as backbone of farmers in rural sectors. Access to it is one of the important requirements in the context of agricultural sector.

The economy of Rajasthan is predominantly agrarian <sup>[1]</sup>. Out of the total working population percentage, the portions of main workers are 73.3 percent, 55.3 farmers, 10.6 agricultural

laboures, 31.2 other workers and 2.9 percent house hold industries workers engaged. The state contains, 42.1 work participation rate and which showed the average per-capita at constant prices for the state is 1,72,656. The state has 926 females per 1,000 males and showed 67.07 low level of literacy rate. The total cultivated area of the state includes about 20 million hectares and out of this only 20% of the land is irrigated. According to BARC, it is observed that the contribution of agriculture in the Rajasthan state GDP is declining (it has come down from about 30% in the beginning of this century to the about 20% currently), a large percentage (about two-thirds) of the total population is still depended on agriculture. The study includes two districts of Rajasthan Jaipur and Rajsamand. Almost all financial institutions are providing credit to farmers for the development of irrigation system, land improvement and purchase of farm machinery. The loan share goes to primary land development bank. The credit delivery to the agriculture sector continues to be inadequate. It appears that the banking system is still hesitant on various grounds to purvey credit to small and marginal farmers (Golait, Ramesh, 2007) <sup>[5]</sup>. The contribution of commercial banks to the sector is relatively low. However, there is need to enhance credit flow for infrastructure at this level. To undertake all these activities, supply of adequate credit is very much important. Most of the economics activities in which the farmers and the weaker sections of the society are engaged suffer from 'Credit Gaps'. The gap in credit is high on small farms as compared to medium and large

<sup>1</sup>While editing this section, a glimpse of Rajasthan agrarian economy, we have believed on the following sources: Provisional Population Totals, Human Development Report, Directorate of Census Operation, Rajasthan, Directorate of Economics and Statistics, Rajasthan, Planning Department, Government of Rajasthan, Agricultural Census, Agricultural Statistics at Glance, Ministry of Agriculture, Rajasthan Development Report, Economic survey and Secondary published sources: Recommendations from the conference on Agriculture in Rajasthan, (2010) "Rajasthan Specific Agriculture Policy, (BARC)", pp.1 www.barcjaipur.org

farms. The announcement of the “twenty-point Programme” on 1st July 1975, provided an opportunity for the setting up of some kind of a new institution of ‘Rural Banks’ for providing rural credit and initiated by Mrs. Indira Gandhi than prime minister, which included drastic measures for liquidating rural indebtedness. Various research works have been undertaken to analyze and examine the credit delivery system of banks and agencies in the field of farm progress at the national level by many individual researcher, financial institutions, research institutes and government (See for example Kewal and Gambir, Atual, 2012; Rav, Singh, and Lakera, 2011; Satyasai, 2008; Sharma, Bangarva and Sharma, 2008; Kale and Mali, 1984; Deo, 1976) [9, 15, 23, 35, 24]. But area-specific research works are comparatively limited in nature, which are of essential importance on account of wide inter regional variations of back rural credit system in developing economy like India. There is need for area-specific studies to capture specific factors which have regarded the penetration availability of credit. Hence, an attempt is made in this research work to examine rural credit system disbursement of the banks and credit agencies and problems faced by farmers under guidelines of NABARD. The main focus of this study is to highlight identify of banks and agencies rural credit delivery system in agriculture development at state and districts level. A detailed analyses relating to the impact of banks and agencies on the lending procedures, problems and constraints faced by farmers in accessing to credit in Jaipur and Rajsamand districts are undertaken in this study. It is hoped that the present study will be help for better delivery system of rural credit in the agricultural development the policy for banks, agencies, financial institution etc.

The paper has been organized as follows: Section-I presents the background of the study area and review of literature. Section-II presents the data and sampling procedure with methodology. Section-III discusses the rural banking pattern in the Jaipur and Rajsamand districts of Rajasthan. Section-IV presents the results and discussions of problems and constraints faced by farmers and the determinants of accessibility of rural credit in the study area. Section-V deals with findings and conclusions.

### Review of Literature

Kumar, *et al.* (2012) made a field study to identify the problems faced by farmers in getting agricultural finance by commercial banks in the Kashipur block during 2012 on the base of primary and secondary sources. The researchers divided the farmers in to small, marginal, medium, big categories/classes. The study focused on the farmer’s problems such as complicated process, high rate of interest, lack of cooperation by bank staff. The study has more limited emphasis on fear factor about recovery process. The paper has suggested that marginal and small farmers are more effective with these problems in compare of big farmers.

Rav, *et al.* (2011) [15] attempted field study to find out the features of psycho-social factors with problems and constraints in credit management in Faizabad district of Uttar Pradesh during 2012 with help of primary and secondary sources and face to face interview with farmer borrowers. The researchers used random sampling technique to select farmer’s categories from each chosen village. The paper has shown that the positive, negative and highly significant relationship has direct influence overall constraints.

Satyasai (2008) [23] has studied the evolution of rural credit system in India based on the secondary source. The paper has analysed of structural problems and structural constraints in the rural credit system that hampered the credit delivery. The paper has showed the institutionalization of banks for providing credit to farmers and described also KKC and farm credit package. The paper has suggested as result, the share of private money lender had decreased substantially from 93 percent in 1950s more so for their source-poor with a share of 39 percent by 2002. However, the role played by the co-operatives, RRBs, CBs and multi-agency system was slow prominent in the area.

Sharma, *et al.*, (2008) [35] in their study in Dausa district of Rajasthan analysed that multiple farming occupation can grow high yield profit and employment. The paper has focused on the agricultural input constraints faced by farmers in the study area with help of 360 sample farmers including of marginal, small, big farmers chosen random technique from 5 villages of three blocks in the district. The paper has suggested that there is need to remove financial crisis by taking suitable implementation. They have emphasized various grouped-wise constraints faced by farmers such as transport, institutional, credit, marketing, technical and socio-economic & socio-cultural in the farming sector etc. However, they have analyzed constraints faced by farmers but not referred clear situation of rural credit delivery system of institutional sources.

Sharma, *et al.*, (2007) [22] have assessed that the inadequate availability of rural credit has identified as a major cause of low productivity and also slow adoption of technology in majority of our farms. Using the LOGIT analysis and on the basis of data pertaining to a sample of hill farms of sub-divided in to four agro-climatic zones in Himachal Pradesh. The result has shown that more than 75 percent of the households borrowed credit from the institutional agencies with contribution of banks is found 68 percent. It was observed that the respective credit requirements for these four zones being 75 percent and need to provide adequate credit facilities in farms.

Deo (1976) [24] has made a study on the problems of agricultural credit allocation has emphasized that the problem of credit allocation in agriculture sector is much and requires adequate attention. He has suggested that the financial experts, social scientists and a team of bank personnel have to work together and have to wed micro-level planning for expansion of credit. He has further said that only quantitative approach is not sufficient but the far flung and main essential impact is all the more significant.

The matter of rural credit delivery to the farming community is widely investigated by many researchers with help of available review of literature. However, there is a wide gap about the matter of rural credit for the rural cultivators. In this current study, the basic aspect has been addressed by the existing review of literature confined to the rural credit delivery system in sampled districts of Rajasthan with reference to cultivator community and identify the problems and constraints faced by cultivators in accessing to rural credit by the banks and financial credit agencies those who are providing rural credit to cultivators. The situation worsens further when we discuss this specific issue in the case of Rajasthan as no study has hitherto addressed the issue of disparities in access to credit delivery in this state.

## Objectives of the Study

The principal objectives of the study are.

- ❖ To study and review the current status of formal agricultural credit system in sampled districts of Rajasthan.
- ❖ To identify the problems and constraints faced by the farmers in accessing to agriculture credit by commercial banks.
- ❖ To study the determinants of accessibility of rural agricultural credit to farmers in the sampled districts of Rajasthan.

## 2. Data Sources and Methodology

The study is based on the both primary and secondary data. Primary data was gathered through the field survey by conducting the face-to-face interview with the borrowers only those farmers have been considered as who are getting to agriculture credit by banks and agencies for the productive purposes. The present study is undertaken with help of design questionnaire during the period of November 2014 and January 2015 in 28 villages and 4 blocks with using multiple sampling techniques of the Jaipur and Rajsamand districts of Rajasthan. The secondary data were collected from Ministries of Agriculture and Finance (GoI), Planning Commission of India, Economic Survey, Trend and Progress of Banking India, District Potential Credit Linkage Plans (PLPs), Reserve Bank of India, various issues Directorate of Economics & Statistics, GoR and State Level Banker Committee (SLBC) etc. The Probit Model has been used for estimating the relationship between the factors that determine the accessibility to institutional credit in Jaipur and Rajsamand districts of Rajasthan. The estimated probit model is as follows

$$Y_i = \alpha_0 + \sum \beta_j x_j + U_i$$

Where  $Y_i$  is credit access which takes the value of 1 for those that have access and 0 otherwise,  $x_j$  is a vector of exogenous variables assumed to influence accessibility of credit;  $\beta_j$  represents estimated probability of the determinants of accessibility;  $U =$  stochastic error term

## 3. Rural Banking Pattern in Sample Districts

**Table 1:** Delivery of Commercial Bank Branches in Selected Districts of Rajasthan

(In numbers)				
Districts	Branches 1991	Branches 2001	Branches 2011	Population per Bank Branch 2011
Jaipur	295	403	640	7324
Rajsamand*	N.A.	59	72	12367
Total	295	462	712	19691

\*Newly created district after 1991 census.

Source: Compiled from Banking Statistics, (Various Issues), Reserve Bank of India and Census Report of India 2011

The delivery of commercial bank branches are presented in the Jaipur and Rajsamand districts as 1991, 2001, 2011 respectively by table no.1. This table shows that Jaipur district has 295 branches in 1991 it is further increased as 403 in 2001 and 640 in 2011 and Rajsamand district has no available branches in 1991 it is further increasing with very slow progress as 59 in 2001 and 72 in 2011 it is due to the backward and remote area but it observed that Jaipur is the good-banked district serving 7324 persons per branch and Rajsamand, the less - banked district serving 12367 only persons per branch.

**Table 2:** Delivery of Total Deposits of Commercial Banks in Sampled District of Rajasthan

(Rupees in crores)

State/Districts	1991		2001		2011			CGR
	Deposit	% to total	Deposit	% to total	Deposit	% to total	Deposit per Branch	
Jaipur	1385	23.98	6908	25.08	31479	24.59	19.87	16.04
*Rajsamand	N.A.	N.A.	404	1.46	1427	1.11	6.34	N.A.
Rajasthan	5774	100	27538	100	128000	100	14.83	15.90

\*Newly created district after 1991 census.

Source: Compiled from Banking Statistics (Various Issues), Reserve Bank of India.

Table no.2 shows that the deposits of scheduled commercial banks Jaipur District accounted for in the 24.59 per cent of the total of Rajasthan State 31479 crores rupees during the period 2011 and whereas in case of Rajsamand district the deposits of scheduled commercial banks turned out to be 1427 crores rupees this is about 1.11 per cent of the total of Rajasthan State during the period under references. It is also clear that

Jaipur District recorded 16.04 percent compound growth in its deposits, it is estimated at the state level average to 15.90 percent and found that is at the state level during the period of 1991 to 2011. In case of Rajsamand district, the compound growth rate of deposit could not be computed due to non-availability of comparable data.

**Table 3:** Bank-wise Delivery of Rural Credit to Agriculture in Sampled Districts of Rajasthan

(Rs. in lacs)

Institutions of Rural Credit									
Year / Districts	Banks	2003 -04		2004 -05		2005-06		2006-07	
		Credit	%	Credit	%	Credit	%	Credit	%
Jaipur	CBs	11000	69.74	9211	38.68	61405	77.10	147457	87.05
	RRBs	3521	22.33	10592	44.47	12720	15.47	14891	8.79
	Coop.	1251	7.93	4013	16.85	5519	6.93	7045	4.16
Rajsamand	CBs	930	35.37	1241	43.07	1527	34.95	1758	33.17
	RRBs	1550	58.98	1406	48.81	2660	60.88	3413	64.36
	Coop.	149	5.65	234	8.12	182	4.17	131	2.47

Source-Based on NSSO-59<sup>th</sup> Round (2005) Situation Assessment Survey of Farmers: Indebtedness of Farmer Households

As per the table no.3 describes the bank-wise rural credit delivery to agriculture sector in the sampled district of Jaipur and Rajsamand. The data focuses on the bank-wise performance of the commercial banks, regional rural banks, and Cooperative banks. In the Jaipur district, the scheduled commercial banks disbursed a more growth from 69.74 percent during the period of 2003-04 to 87.05 percent during the period of 2006-07 as against the decrement of cooperative banks from 7.93 percent to 4.16 percent in the period same period. The share of regional rural banks was about 22.33 percent during the period of 2003-04 to 8.79 percent during the period of 2006-07 whereas in case of Rajsamand district, the

regional rural banks recorded a more growth from 58.98 percent in the period of 2003-04 to 64.36 percent during the period of 2006-07 as against the deficiency of cooperative banks from 5.65 percent to 2.47 percent in the period same period. The share of commercial banks was about 35.37 percent during the period of 2003-04 to 33.17 percent in the period of 2006-07. Thus, data analyses about comparative performance of credit delivery to farm sector in both sampled districts where, the commercial banks is mainly source of rural credit in the Jaipur district and the regional rural banks provided a significant amount of rural credit in the Rajsamand district.

**Table 4:** Agency-wise Flow of Rural Credit to Agriculture in Sampled Districts and Rajasthan (In percentage)

Source of Rural Credit	Jaipur	Rajsamand	Rajasthan
Government	4.47	4.72	1.57
Cooperative Societies	12.62	5.48	10.84
Commercial Banks	11.08	8.97	15.36
Non-institutional	79.97	76.26	68.13
Others	7.09	4.56	4.09

Source: Based on NSSO-59<sup>th</sup> Round (2005) Situation Assessment Survey of Farmers: Indebtedness of Farmer Households

The table no. 4 showed a vital picture of the proportion of farmer rural credit through the formal and informal sources in the sampled districts and Rajasthan. According to the Satiation Assessment Survey of Farmers Government, Cooperative Credit Societies, Commercial Bank are the main institutional sources. Non-institutional were found to be the important agencies for credit delivery system in Rajasthan. The table analyses the significant proportion of formal sources supplying was 28.17 percent recorded in the Jaipur district in the 2005 and it was there about 19.17 percent estimated in Rajsamand district at same period, however, it was founded about 27.77 percent in the Rajasthan. On the other side informal sources play an important role in the contribution to

provide the rural credit in farm sector of Rajasthan? It is clearly mentioned through existing data which shows a dismal picture of formal rural credit delivery system in both districts and state level. Whereas, informal sources supplying was 87.06 percent noted in the Jaipur district and it was about 80.82 percent found in Rajsamand district during the period of 2005, however, the contribution in Rajasthan was about 72.22 percent. Thus, it is clear that commercial banks are primarily significant sources of rural credit in agriculture sector and there is an urgent need to improve the rural banking expansion in rural area of backward districts of Rajasthan.

#### 4. Credit Delivery System to Farmers

**Table 5:** Descriptive Statistical Analysis of Problems and Constraints faced by Cultivators in the Sampled Districts from Banks and Other Credit Agencies

Problems and Constraints	Jaipur District						Rajsamand District					
	While getting the Rural Credit											
	Yes	%	No	%	Total	Total %	Yes	%	No	%	Total	Total %
Complicated Procedures	72	51.4	68	48.6	140	100	93	66.4	47	33.6	140	100
Illiteracy & Ignorance	62	44.3	78	55.7	140	100	92	65.7	48	34.3	140	100
No loan without security	91	65.0	49	35.0	140	100	98	70.0	42	30.0	140	100
Bank Staff is not cooperative	60	42.9	80	57.1	140	100	94	67.1	46	32.9	140	100
Distance of the Bank from household	30	21.4	110	78.6	140	100	58	41.4	82	58.6	140	100
After getting the Rural Credit												
Inadequate Loan	76	54.3	64	45.7	140	100	105	75.0	35	25.0	140	100
High Rate of Interest	51	36.4	89	63.6	140	100	54	38.6	86	61.4	140	100
Untimely Loan	38	27.1	102	72.9	140	100	55	39.3	85	60.7	140	100

Source: Data compiled from Study area

#### Problems and Constraints of Farmers while getting rural credit from Banks & Credit Agencies

In order to determine the problems and constraints of rural credit delivery system in Rajasthan two districts of Rajasthan, Jaipur and Rajsamand were selected purposively. The discussions were held with respondents to find out the

essential reasons why they have not been availing credit from the banks or other formal agencies. The table no.5 shows essential reasons that affected the access to credit.

**Complicated Procedures:** The farmers face various type of problems during the time of access to rural credit such as, credit transaction dilemma, time spending procedures, push

and shove. Due to these constraints farmers are forced to move towards the informal credit institutions due to easy availability. It was mentioned by our late Prime Minister Smt. Indira Gandhi, "The procedure of getting agricultural credit is complicated one." A significant proportion of the farmer 51.4 percent mentioned that complicated procedure was specific problem for getting the rural credit in the Jaipur district and 48.6 percent informed complicated procedure was not an obstacle to get the rural credit. In contrast, only 66.4 percent of the sample cultivator households in the Rajsamand district reported complicated procedure and 33.6 percent told complicated procedure were not a serious constraint to access the credit.

**Illiteracy & Ignorance:** Illiteracy of farmers and their ignorance have shown serious impact on access to credit. Illiterate cultivator is unable to understand the transaction process of credit delivery system by banks or other formal agencies. Due to ignorance many farmers are exploited by the corrupted bank staff for giving credit. A proportion of the farmer borrowers 44.3 percent approximately informed that Illiteracy of farmers and their ignorance were serious problems for accessing the rural credit in the Jaipur district and more than 65 percent farmers reported that Illiteracy and ignorance as hurdles for getting farm rural credit in the Rajsamand district.

**No Loan without Security:** The crop loans are also known as short term loans for "seasonal agricultural operations." The seasonal agricultural operations connote such activities as are undertaken in the process of raising various crops and are seasonally recurring in nature. Basically, these completely depend on seasonally aspects. In order to find out the activity of the rural household regard security approach they were asked to describe their feelings about no loan without security. About 65 percent farmers reported that no loan without security disappointed them to borrow loan from bank and other formal agencies, only 35 percent borrowers were satisfied with the collateral in case of Jaipur district whereas in case of Rajsamand district 70 percent of the sample farm households informed security approach and 30 percent revealed problem was not a serious constraint.

**Bank Staff is not cooperative:** A consequential problem and constraint was mentioned in the institutional rural credit market structure that is the prejudiced attitude of the bank staff. About one-two (half) part of the sample rural farmer households in the selected districts observed that the cooperation of the bank staff is not cooperative. A significant proportion of the farmer household 42.9 percent stated that the bank staff was not cooperative and it was a specific problem for getting the rural credit in the Jaipur district and 57.1 percent felt above said was not an obstacle to get the rural credit. In contrast, only 67.1 percent of the sample farmer households in the Rajsamand district reported about attitude of the bank staff and 32.9 percent told said problem was not a serious constraint to access the rural credit. However, this situation is fewer than in other parts of economy. This factor has been noted by (Vogel, 1986), (Bell, 1990), (Benjamin 1981), where more than 33 percent reported that they were affected due to corruption and the non-cooperation of the bank staff. More than 51 percent of the farmer households felt that

cumbersome procedures and approach of the bank staff were the major constraints to access.

**Distant Location of the Bank from Household:** With a modern approach about an intense diffusion of the bank branch network structure distance has not been found as a major determining factor. It is clearly mentioned that rural farmer household closer the banks and credit agencies have a residential benefit and can access the rural credit and information the banks and agencies easily in comprised to those who stay at distant and remote area. Thus, residential benefit was hoped to expand access to the rural credit from the said institutions. In Jaipur district, a significant proportion of the farmer borrowers 21.4 percent informed that distance to the bank and lending credit agencies was problem in accessing in rural credit while 78.6 percent farmers reported that distance as no problem in accessing in rural credit. In case of Rajsamand district about 41.4 percent told that distance to the bank and lending credit agencies was problem while 58.6 percent farmers informed that distance as no particular trouble in accessing credit in rural credit market structure.

#### **Problems and Constraints after getting the Farmers rural credit by Banks & Credit Agencies**

**Inadequate Credit:** A crucial proportion of the rural farmer household in Jaipur district showed the problem of inadequate loan. As many as 54.3 percent of the respondents in the district stated that the amount of credit is inadequate 45.7 percent said that credit inadequacy was not a problem to get the rural credit. In contrast, only 75 percent of the sample households in Rajsamand district showed that the amount of credit is inadequate and 25 percent informed it is not an obstacle to get the rural credit from the bank and other formal lending credit agencies.

**High Rate of Interest:** Interest rate plays a significant role in agriculture sector of an economy that determines the credit facility to the farmers. The major aspect of decision making of the rural farmer households for the agriculture credit was rate of interest. The household borrowers faced the problem of exorbitant interest rate in the both sampled districts. About 36.4 percent of the farmer households in the Jaipur district stated that rate of interest is high and 63.6 percent reported that it is not a problem to access the agricultural credit from the banks. In contrast, only 38.6 percent of the sample households in Rajsamand district opined that high rate of interest discouraged them to borrow from banks and 61.4 percent reported that it is not a problem.

**Untimely Credit:** Agricultural credit at an appropriate time is referred as an important requirement. The farmer household needs agriculture credit for transplantation and it is provided to farmer during mowing for different types of reasons. Therefore, requirement of rural credit at an appropriate time is limited to contrarily bounded impact the output. It problem was mentioned in the study area. About 27.1 percent reported that untimely credit was particular problem in the Jaipur district and 72.9 percent informed that untimely credit was not a problem. In case of Rajsamand district, only 39.3 percent of the farmer households revealed untimely credit was a major constraint and 60.7 percent mentioned it is not a constraint to access the rural credit.

## Analytical Study of Determinants of Accessibility of Rural Credit in the Study Area

**Table 6:** Relationship between the factors that determine the Accessibility to Institutional Credit in Jaipur and Rajsamand Districts of Rajasthan

Sampled Districts	Jaipur		Rajsamand	
Probit Regression	No. of observations =140		Number of observation =140	
	LR chi2(12) =113.64		LR chi2(12) =134.85	
	Prob> chi2 =0.000		Prob> chi2 =0.000	
Log likelihood = -38.787505	Pseudo R2 =0.5943		Pseudo R2 =0.739	
Dependent Variable	Coefficient	P>z	Coefficient	P>z
Age	.1528115	0.051*	.2376392	0.074**
Age <sup>2</sup>	-.0012217	0.470	-.0021061	0.336
Sex	-.1784549	0.755	.3076272	0.708
Education	.185028	0.063**	.0726879	0.762
House Holds Size	-.2351628	0.166	-.2486057	0.175
Farm Size	.1994812	0.000	.2759191	0.000
Membership of Co-operative	.0123554	0.975	.1486133	0.773
Households Assets	7.20e-06	0.089**	.0000196	0.032*
Live Stock	7.97e-07	0.880	5.87e-06	0.302
Complicate Procedures	-.7974244	0.138	-.8706991	0.084**
High Rate of Interest	-.2273183	0.053	-.7909738	0.041
Distance Location from Bank	-.5005853	0.249	-.458308	0.089**
Constant	-6.257165	0.101	-8.688809	0.116

Source: Data estimated from Study area

Probit regression model was used to identify factors influencing access to credit to farmers. The factors affecting access to credit has been categorized into two categories: the individual/household characteristics. Among the individual/household characteristics, we have the variables like: Age, Age<sup>2</sup>, Sex, Education, HH Size, Livestock and HH Assets. Among the attributes of the financial institutions that may affect an individual's/household's access to credit from that source are the Interest Rate, Complicated Procedures, Membership of Cooperatives and Distance from the bank.

The Probit Model results are presented in the Table no.6. Twelve variables have been used for the analysis in order to determine of accessibility to credit in Jaipur and Rajsamand districts of Rajasthan. The maximum likelihood estimates of the Probit Model showed the best fit model. In the model, coefficients of five out of twelve explanatory variables are significant in Jaipur district and six variables are significant in case of Rajsamand district. It is evident from the table no. 6 that the age of farmers, education of farmers, farm size, household assets and high rate of interest are significant variables that influence credit accessibility to farmers in Jaipur district. In case of Rajsamand district along with these five variables complicated procedures was also found significant factor to determine the access to credit.

The age of respondents was found to be statistically significant at 5% in Jaipur district and 10% in Rajsamand District. The coefficient of age variable found to be positive and significant in both the districts whereas age square is negative but insignificant in both the cases. This indicates that higher the age of the farmers or the older they become, the greater the likelihood of being credit constrained. This might be because the younger farmers are still agile and more receptive to new technologies and activities that will generate income for them, aside this, banks will not like to lend out money to old people for the fear that they may not live long enough to pay back the money. Another significant variable is gender, it was found to be negative but insignificant. This means that males are associated with increasing levels of probability to access credit compared to their female counterparts. Education was found to

be positive and statistically significant in Jaipur district while in case of Rajsamand district it was found to be insignificant. Increase in educational status will increase the probability of the farmer to access credit. Household size was found to be negative but statistically insignificant. This indicates that the more the number of household members, the less is the access to credit. This might be because more the member of the household more is the household per capita expenditure therefore reducing the amount of money that they can invest in productive assets less is the repaying capacity. Household size in the study area is fairly large with an average of 7 members and this is expected to have a multiplier effect on the poverty status of the respondents. Farm size was also found to be positively related to farmers' access to credit from the banks for their farming activities. This was found to be significant at the 5 per cent level in both the districts. Large land holding farmers' own more capital, than small land holding farmers because land is the biggest capital for cultivators. The households with more land are expected to need more money to buy input resources such as seed, fertilizer, pesticide, etc. and to hire labours during the progression of crop seasons therefore their demand for credit is more and banks hereby lend money to large farmers because of less risk to credit default. Cooperative Membership was found to be positively related to access credit from the banks but the relationship was found insignificant. The implication of this finding is that farmers who are actively affiliated to "cooperatives" were most likely to access credit from banks. This can have positive implications on repayment the banks because of the fact that farm group or organization become as a guarantor to repay the credit. This implies that formation of economic and social associations had helped to improve access to credit since there was a joint guarantee by association members. Household assets come out to be positively related to the access to credit from banks. This relationship was also found to be significant at 10% and 5% level for Jaipur and Rajsamand district respectively. Mostly in rural areas the productive assets of household include: land and livestock. These assets can easily be converted into cash when demand arises. Due to this

reasons banks lend more to households having more household assets. As the total value of household assets increase, the household would be more likely to access credit. This can be attributed to increase in wealth and income base of farm households which makes additional income available in the households. Household assets were found to be an important factor determining credit accessibility. Rate of Interest was found significant determinant of the access to credit from banks by farmers at 5% level in both the districts. The estimated results implied that individuals access less credit from formal sources as the rate of interest increased. At the higher rate of interest farmers may delay investment which in turn obstructs the agricultural production. Give the risk and uncertainties in agricultural operations farmers avoid borrowing on high rate of interest. This implies that farmers who perceived the interest charged by the banks to be high are less likely to access credit from them. The distance from the residence to the nearest bank conformed found to be negative to the probability of farmers to access credit from banks. But it was found to be insignificant in case of Rajsamand District the reason may be because of high density of bank branches the average distance was between 1-2 km. less as compared to Jaipur district. This is because those close to the banks tend to know more about the services rendered by the banks and are most likely to demand such services. The insignificant relationship implies that distance is a constraint but it may not always the dissuade farmers to access credit due to development of communication, roads, transport etc. Complicated procedures were found to be negatively influencing the access to credit. The relationship was found to be significant in case of Rajsamand District. To get formal credit farmers were expected to pass through different processes, which are time consuming, cumbersome and sometimes difficult to understand. Complicated procedure negatively affects farmer's access to credit from the formal credit sources. Live Stock was found to be positively related to access credit but the relationship was statistically insignificant. Household's having more livestock population had high access to credit and vice versa. This may be because livestock acts as an asset to support their expenditures. Therefore, more likely to having repaying capacity. It also act as collateral to access credit from banks.

## 5. Findings and Conclusions

In this paper an attempt has been made to identify the problems and constraints faced by the farmers in Jaipur and Rajsamand districts of Rajasthan in accessing agriculture credit from commercial banks. The result showed that accessibility of credit is determined by socio-economic, household and institutional factors. Among the individual/household characteristics, we have the Age, Age<sup>2</sup>, Sex, Education, HH Size, Livestock and HH Assets. Among the attributes of the financial institutions that may affect an individual's/household's access to credit from that source are the interest rate, complicated procedure, membership of cooperatives and distance from the bank. Limited access to formal credit is one of the critical constraints in expanding farmers' agricultural productivity, which restrains farmers from improving their living conditions. Institutional finance was introduced to India as an anti-poverty programme aiming to facilitate access to credit by farmers and mitigate rural poverty. Therefore, there is need to increase the flow of credit

by removing all constraints, both macro and micro, in accessing credit.

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