Impact of Landholding and farmers characteristics in Obtaining Credit for Agricultural Productivity in District D.I.Khan

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Abstract

This paper examines the impact of farm and farmers' characteristics in obtaining credit for agricultural productivity in D.I.Khan district during 2007-09.A total of 320 respondents were selected by using stratified random sampling technique. A questionnaire from the respondents was filled with the help of enumerator. Chi-square test was applied for comparison of frequenci**es.** The analysis revealed that decision to get credit is successfully predicted by Age, Education, Occupation, Numbers of dependents, Marital status, Farm size, Farm type, Farm status, Tenancy status and farming experience.

Keywords; Farmers' characteristics, Farms' characteristics, agricultural credit

Introduction

Agriculture's role in Pakistan's economy is undeniably like that of a backbone in a human body. According to GOP 2006, it is directly or indirectly connected with all segment of economic life of the country. Fait of the matter is that nearly 65.9 percent people of Pakistan lives in rural areas. Not only rural people are directly attached with agriculture for their earnings but also 44.8 of total country's employment are being produced by it. That is why imports, exports, industrials growth and ultimately GDP are totally dependent on the

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performance of agriculture. So if any thing happens to agriculture, it certainly disturbs the output of the country as a whole.

Agriculture could not perform in accordance with the set target of 4.2 percent during the fiscal year 2005-2006.Although last year growth was 6.7 percent, yet it could grow only 2.5 percent in 2005-2006.The major factors which affected the productivity of agriculture were major and minor crops, forestry and fishery (Ibid, 2005-06). They could not perform up to their full potential. It is also noted that growth of agriculture is far behind then other developing countries of the world and the main reason for it is the lack of funds (Nadeem & Sajida, 2005)

The rural populace of Pakistan and especially living in the province of NWFP are two poor to purchase modern agricultural tools. Poverty is the main obstacle in their way to work on their fields. They can neither buy water, nor certified seed, nor fertilizers and nor costly inputs to increase their productivity (Zubair, 2002). Until and unless productivity in agriculture is enhanced, poverty is not going to be alleviated. For getting rid of all the miseries of agriculture, what is needed are availability of funds and effective management. If the farmers have money, they will be to purchase everything needed. If they have every thing for agriculture, they will need effective management to enhance their productivity (Nadeem & Sajida, 2005).

Farm credit has played tremendous role in increasing the growth of agriculture. However, the process of farm credit has become very complex and tiresome, due to the challenges born out of globalization and liberalization of trade. It is high time to deal with the issues of globalization properly for saving the future of farms in developing countries of Asia like Pakistan globalization does have

demerits especially for developing countries which have united resources , low standard of productivity and meager access to the international market. It has restricted the policy options of the government, credit institutions to make soft rules for the farmers and future of agriculture. Increase in production is dependent on providing credit in time. The government seems to be serious in the regard. That is why state bank of Pakistan has been given the task of monitoring and supervising agricultural credit, which is being provided, by Zarai Taraqiati Bank Ltd, Punjab provincial cooperative bank and 14 domestic private commercial banks. But what if is important in this respect or two issues concerning credit. One is the access of farmers to credit easily, secondly higher interest rate of credit, which can hamper the agricultural production. Agricultural credit should aim at improving the financial position of farmers instead of increasing the production only. Unless and until the farmers are financially strong, dream of high production cannot be realized. And if the farmers have to pay high interest rates on credit, it will further wider the gap between the rich and the poor. The only possible way for the future of Pakistan's agriculture is to provide the farmers with everything necessary for agricultural growth. For it, the government will have to do something for easy, accessible and cheap credit to the farmers.

Literature Review

Credit is seen as a powerful instrument in promoting economic development with equity and social justice and more particularly to increase agricultural production and improve the standard of living of rural population (Gadgil, 1994).

Sebopetji et al (2009) collected primary data using structured questionnaire in the Greater Letaba Local Municipality from 73 randomly selected small-scale farmers in the 2006 to know the influence household characteristics have on farmers' decision to use credit. According to results farming experience, gender and marital status have significant positive effect on the farmers' decision to use credit and the number of visits by agricultural extension officer and off-farm income had insignificant positive effect. While formal education, membership of a farmer to an association, size of arable land and the farmers' ages have significant negative effect on farmers' decision to use credit. The study recommends training on the benefits of farm credit among both borrowers and non-borrowers in rural areas. Also the full rollout of Micro Agricultural Finance Institutions of South Africa (MAFISA) and the imminent implementation of the Communal Land Rights Act (CLARA) will ease the collateral problems of these categories of farmers. Mergers among small-scale farmers are recommended, as they will most likely improve production capacity and credit worthiness.

Waqar et al (2008) Conducted research on**"** Agricultural Credit Constraints and Borrowing Behavior of Farmers in Rural Punjab" They found collateral and high mark up as major constraints in getting credit. Due to this effect of credit programmes introduced by Govt of Pakistan through institutional sources was less than optimal due. Data regarding not applying credit to a formal institutions, distance of the bank, interest rates of the institutions, time lapsed between application and loan disbursement, purpose of loan, formal institutions and collateral used for the loan from the institutional sources cumbersome and expensive

procedures, was collected from Rural Household Survey (PRHS) 2001 comprising 2642 households from 16 districts of Pakistan. The borrowing behavior of the respondents was estimated through the legit model and identified the determinants of credit constraints. The results showed that the Coefficients of transitory income, education level, and predicted interest rate have important bearing on borrowing behavior. Operational holding and value of implements positively and significantly determined the household consumption expenditure

Okunade (2007) aims to know about the accessibility to the agricultural credits in Isoya rural development project. 105 women were selected for study from 15 villages. Information was collected through interviews. The study disclosed important relationship between the ownership of land (r =0.356) level of education (r = 0.238) occupation (r = 0.1983) and accessibility to the credit facility. Farmers face problems due to lack of information administrative system, high interest and due to distribution of loans commercial banks and co-operative society are the sources of credit 100% of the respondents sourced for loan from cooperative societies. While chemical dealers and OSSADEP are the sources of input available to the farmers. Majority (100%) of the respondents obtained inputs from the chemical dealers. It therefore is imperative to provide loan for agriculture development to increase production and food.

Khalid (2003) studied 300 randomly selected households with the help of questionnaire in some villages of Unguja and Pemba to know the information's that will help small-scale producers in decision-making process for the enhancement of access to credit. Study results show

inadequate flow of formal credit, inadequate piecemeal credit services extended by Government institutions and donor-funded development projects and Poor loan recovery were major constraint. The empirical evidence of the study indicates that age; gender, education, income levels, and degree of awareness on credit availability are factors that influence credit accessibility by smallholder farmers. Age Gender and Income Level show negative but significant relationship with respect to credit access. Education and Awareness were found positive and significant. Farm Size was positive insignificant The T-test results show that the income and assets values of borrowers were almost twice that of non-borrowers but no impact on household labor size and farm size.

Gustavo et al (2006) founded in their research paper on the topic Determinants of Farm Revenue in Pakistan that *Production* would reduce with the reduction of average size land. This deals the factors of rural household and farm related income. Referring to 2001 PIDE household survey the approach developed captures the potential interaction between farm returns and household farm and factor market characteristics. The result shows

a) Returns to the additional schooling and revenue elasticity increases with the farm size

b) Renters of medium and large size would agree to pay more rents, implying an incentive to increase the farm size at the prevailing rental values.

c- Owner operated farms, land owner and fixed rental tenants earn higher revenue than share cropping tenants. The difference between landowner, fix enters and sharecropper income varies with the family and farm size and water use the result also reveals that off farm and

non-farm income sources are relatively more important for small farmers.

Main sources shareholders in financing of agricultural developments and business may be divided into four groups.

- Commercial banks
- International financing institutions (WB, EBRD, USAID)
- NGO'S, MGO'S, charities etc
- Governmental initiatives

Oboh et al (2009) found significant effect of the coefficients of annual income, distance, farm size and previous loan status on loan size to farmers in their research work on the topic Socio-economic Determinants of Farmers' Loan Size in Benue State, Nigeria. While age, gender and household size showed insignificant but positive effect on loan size to farmers. Farming experience showed insignificant effect with negative sign. Cross-sectional data was collected from 300 randomly selected loan beneficiaries of the Nigerian Agricultural, Cooperative and Rural Development Bank (NACRDB), in Benue State for the 2005 cropping season through structured interview schedule. Frequency, percentages and means were used to describe the socio-demographic characteristics of respondents, the paired sample t-test was employed to test for any significant difference between the amounts of loan demanded by and supplied to farmers.

Mpuga(2004) conducted research on "Demand for Credit in Rural Uganda:" Using probit, tobit and multinomial logit model estimations on Uganda household surveys; 1992/93 and 1999/2000. The educated and the young farmers were found more likely to demand credit among

other independent variables of marital status, Farm size, Occupation, Household size. demand for credit is positive and significant for those in the age group 31-40 years but, although positive, the coefficients are not significant for those aged 41-50 and 51-60 years while for the retired, (age 61 years and above) the coefficient is negative and significant. Education of the individual positively affects the decision to apply for credit

Sidhu et al (2008) Institutional agricultural credit has played a significant role in the fast and widespread adoption of modern production technologies and promotion of private investments on farms through it's Increasing as well as cheap supply. Primary and secondary data were used to estimate demand-supply situation of institutional Agricultural credit as well as its contribution to agricultural growth. Secondary data were taken from the published documents of Reserve Bank of India. Primary data were collected from a randomly selected sample of 160 farmers on use of intermediate production inputs such as seed, Fertilizers, agro-chemicals, labor hiring, machinery hiring, fuel and oil, electric motor charges, and manures, pesticides, marketing expenses, minor repairs, etc. The private investments were estimated for irrigation facility, tractor, farm machinery, land development, etc. The production credit increased from Rs 555.4 core in 1984-85 to Rs 2657.8 core in 2003-04 at the rate of 9.54 per cent per annum, while investment credit increased from Rs 167.7 core to Rs 500.5 core, respectively during this period at the rate of 5.1 per cent. The association of variable inputs with production credit disbursement was found to be very high and significant. Tractorization, especially on small and semi-medium holdings, is largely financed by easy availability of institutional credit

in the state. The number of tube wells has gone up from 6.0 lakh in 1980-81 to 11.9 lakh in 2005-06 and the proportionate area irrigated by them has increased from 57.3 per cent to 72.3 per cent during this period. The study has shown that institutional credit has contributed positively to the adoption of modern production inputs and private investments in tube well irrigation, tractorization and other farm machinery in the state.

Methodological Framework

The population for this particular study comprises of farmers practicing agriculture in Dera Ismail Khan's district of North West Frontier Province. The population for this particular study is too large and it was not possible for researcher to contact each and every member of the population. To overcome this difficulty the study was delimited to certain boundaries, easily approachable to the researcher. Therefore the study was to be confined to a selected numbers of respondents from within the population based on time and cost constraints i.e.320. To give maximum chance of selection to each and every member of the population as respondent stratified sampling method was used.

For the purpose of collecting data from the concerned quarters, questionnaire was used as a tool. In this connection, a structured questionnaire was developed, containing appropriate number of questions. Along with most of the closed form of questions, few questions were of unscheduled form to allow the respondent to provide maximum information and not bound them to just researcher's maneuvered question -answers.

Due to largely scattered and mostly unknown population to the researcher and also to avoid risk of meager responses researcher himself delivered the questionnaire to the respondents and gets back, dully filled by them. Though the task would be tedious and laborious but would ensure to a greater extent, the safe return of the questionnaires.

Primary data collected during the course of this study was subjected to statistical analysis by using SPSS (Statistical Package for Social Sciences) version 11. Chi square test was used to determine statistical significance among the categories.

Results and Discussion

The table 1 below reflects that among 320 sample middle aged farmers (31-45) years old are greater in number i.e. they are 124 leading to 102 old aged (46-above) years' old farmers. Chi square value shows significant (U- shape) effect of age in credit taking (p>.003). Middle age farmers are more willing in taking credit for agriculture business.38.75% middle aged farmers have taken credit leading to 31.87% farmers of old age who have availed credit facility. Elder farmers due to their long Farming experience accepts risk-bearing capacity of adopting new farm technology confirming the results with Sebopetji et al (2009)

Table: 1 **Impact of Farm & Farmer Characteristics in obtaining credit**

Farm/ Farmer Characteristics	**Level**	**No of times (in years) credit attained**					**χ^2 value**	**Sig.**
		1-2	3-5	6-10	Total	%		
Age	15-30	24	36	34	94	29.36	32.237	.003
	31-45	16	76	32	124	38.75		
	46-above	42	44	16	102	31.88		
Education	Up to Primary	26	24	10	60	18.75	49.502	.000
	Up to Secondary	30	82	14	126	39.38		
	Above Secondary	26	50	58	134	41.88		
Tenancy status	Owner	62	144	72	278	86.88	13.227	.002
	Tenant	20	12	10	42	13.13		
Occupation	Farming	66	82	26	174	54.38	39.728	.000
	Farming + Others	16	74	56	146	45.63		
Farming Experience	1-10 years	2	38	28	68	21.25	32.015	.002
	11-20 years	28	52	30	110	34.38		
	Above 20 years	52	66	24	142	44.38		
Marital Status	Married	74	132	52	258	80.63	21.995	.004
	Un married	8	24	30	62	19.38		
Farm size	1-400	66	102	34	202	63.13	32.421	.003
	401-800	8	28	16	52	16.25		
	801and above	8	26	32	66	20.63		
Numbers of dependence	1-5	12	62	20	94	29.38	27.740	.000
	6-10	58	74	38	170	53.13		
	11-above	12	20	24	56	17.50		
Farm status	Tractor operated	62	144	72	278	86.88	13.227	.001
	Bullock operated	20	12	10	42	13.13		
Farm Type	Irrigated	74	112	76	262	81.88	21.006	.001
	Unmitigated	8	44	6	58	18.13		

Source: Field Survey

Education

Frequency table 1 shows that Out of 320 sample size 134 farmers have education above secondary level, 126 farmers have education up to secondary level whereas 60 farmers falls below primary level education group. Chi square value shows significant effect of education in credit taking (p>.000). Higher educated farmers do not hesitate in taking credit for agriculture business. From the table 1 it has been revealed that farmers having educations above secondary level (42%) are taking more credit compared to farmers having education below secondary level (39%) but above primary level. The results revealed that higher educated farmers are taking credit more frequently than other education level farmers. It may be that educated farmers can easily understand and follow credit attainment process, new technology and gain economic efficiency. These results are in conformity with the findings of Sebopetizi (2009),Waqar *et al*. (2008), Okunado (2007), and Mohamed (2003)

Occupation

Frequency table 1 reflects that Out of 320 sample farmers 174 farmers have only farming as occupation 146 farmers have farming and other occupations as well. Chi square value shows significant effect of occupation in credit taking (p>.000). Farmers having farming as an occupation are more willing to take credit. Table 1 reflects that 54.4% farmers who have only farming occupation are taking credit more as compared to farmers having farming and other occupations as well.

The big reason behind this is that the farmers having only farming as occupation have no other income source for their agriculture business enhancement. If they require capital they have to rely upon credit supplying source only. Confirming with the results of okunade (2007), Khalid (2003).

Farming Experience

From frequency table 1 it is clear that out of a sample size of 320 farmers 142 farmers have more than 20 years farming experience 110 farmers have farming experience below 20 years but more than 10 years.68 farmers less than 10 years farming experience. Chi square value shows significant effect of farming experience in credit taking (p>.002). Farmers with more farm experience like to get credit than farmers with less farming experience. Table 1 reflects that 44.4% farmers with more than 20 years farming experience make use of agriculture credit more than farmers (34.4%)having farming experience between 10 to 20 years. It is because experienced farmers can easily make use of credit in adopting, new technology and gaining economic efficiency confirming the results with sebopetizi (2009).

Martial Status

Frequency table 1 shows that out of 320 sample farmers' 258 farmers are married. Chi square value shows significant effect of marital status in credit taking (p>.004). Married farmers are taking credit more than unmarried farmers. Table 1 tells that 81%-married farmers are taking credit than credit taking farmers who are unmarried. It means married farmers need credit more and do not hesitate in taking credit than unmarried farmers. Reason behind this is that mostly farmers have small farm size. They can hardly meet their household consumptions from their agriculture produce due to small piece of land. For more production from this small piece of land they have to employee new farm technology. But mostly farmers are poor they have to take credit for their agriculture growth. Confirming with the result of Sebopetizi (2009).

Tenancy Status

Frequency table 1 shows that out of 320 sample farmers' 278 farmers are owners.42 are tenants. Chi square value shows significant effect of tenancy status in credit taking (p>.002). Owners take credit more than tenants.81% credit taking farmers are owners. It is because owners work more willingly on their fields rather than tenants. More the production more the owners enjoy and have not to share with others. Also owners are free to decide regarding use of farm inputs etc but being small farmers, they need credit to employee new farm technology and inputs to increase their agricultural production. Confirming with the result of Okunade (2007) Gustavo et al (2006).

Farm Size

From frequency table 1 it is clear that out of 320 sample farmers 202 farmers have unto 400 canal farm land.52 farmers have more than 400canal but less than 800 canal of farm land. Only 66farmers have more than 800 canal of farmland. Chi square value shows significant effect of farm size in credit taking (p>.003). Small farm size owners take credit more than farmers having more size of farmland .63%. Credit taking farmers belong to small size of farmland holder. From this small piece of farmland they cannot get much profit to employee new farm technology and inputs in order to increase their agricultural production. Therefore they have to depend upon credit. Confirming with the result with Sebopetizi (2009) Okunade (2007)

Numbers of dependence

Out of 320 samples 170 farmers, which are 53.12%, belong to a group having 6 to 10 persons depending upon them and take credit. They lead to a group having 1 to 5 persons depending upon them and take credit.

They are 29.37% of sample size. Chi square value shows significant effect of dependence in credit taking (p>.000). Only 56 farmers who are 17.5% of sample size have 11 and above persons depending upon them and they take credit. This is because that dependence group between six to ten cannot meet consumption requirements of their family also they cannot use dependants as labor force. Farmers with small dependence group can meet financial requirements of their family from agricultural income and large dependants groups can use their dependants as labor force and save labor charges therefore mediums dependence group require more credits confirming the results with cuong H.Nguyen (2007).

Farm status

Frequency table 1 shows that out of 320-sample farmers 278 farms are tractor operated. Chi square value shows significant effect of farm status in credit taking (p>.001). Farmers using tractors in their farms are taking credit more than farmers using bullocks in their farms. Table 1 tells that 86.88% farmers with tractorization are taking more credit than credit taking farmers who use bullocks in their fields. It means tractor operated farms need credit. Reason behind this is that mostly farmers are poor. They cannot employee new farm technology for lack of required finance to enhance their agriculture with economy confirming the results with Sidhu et al (2008)

Farm Type

Frequency table 1 shows that out of 320-sample farmers 262 farms are irrigated. Chi square value shows significant effect of farm type in credit taking (p>.001). Farmers having irrigated farms are taking credit

more than farmers having unirrigated farms. Table 1 tells that 81.88% farmers with irrigated farms are taking more credit than credit taking farmers who have rainfed farms. It means irrigated farms need more credit. Reason behind this is that mostly farmers are poor. They cannot employee means of irrigation from their own for lack of required finance to enhance their agriculture with economy confirming the results with Sidhu et al (2008)

Conclusions and Recommendations

From the findings of the present survey, it can be concluded that participation in credit for agriculture purposes depends upon farms and farmers characteristics. Present study show that farmers decision to participate in agriculture credit for there agricultural growth is significantly predicted by Age, Education, Occupation, Numbers of dependents, Marital status, Farm size, Farm type, Farm status, Tenancy status and farming experience Chi square results show that all independent variables effect significantly on dependent variable Participation in credit at 5% level of significant rejecting the null hypothesis.

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