Borrowing Behavior towards Institutional Credit in Punjab- A case study of Faisalabad district

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Abstract

This paper focuses on the borrowing behavior of the Farmers towards financial institutions and identifies credit constraints faced by the farmers for the accessibility of institutional credit and suggests remedial measures to make efficient use of agricultural credit schemes. The contribution of this research is to provide more empirical evidences on determinants of rural household’s borrowing behavior using the data from Faisalabad District. Provision of an efficient rural credit market is a precondition for promoting agriculture of an economy. The estimated demand for borrowing implies that source of loan, size of land holding, predict interest rate, education level, previous year’s income and value of farm implements are the most important factors affecting household’s credit activities.

Keywords: Institutional Credit, Borrowing Behavior, Credit Market

Introduction

Institutional credit has come to perform a leading role in the process of development and expansion of agriculture (Malik, 2003). The rural financial market in Pakistan is comprised of two broad segments, i.e., the formal and informal and they exist side by side. The formal sector of Pakistan is led by Zarai Taraqiati Bank Limited (ZTBL), Commercial Banks, and The Federal Banks for Cooperatives (FBC), Women Banks and Non-Governmental Organizations. The rural
credit market in Pakistan continues to be dominated by informal sources of lending. The Rural Credit Survey 1996 indicated that 78 percent of total credit was disbursed by informal sector (Malik, 1999). Despite of subsidized Government credit programs, small farmers and poor households have had very limited access to institutional source of credit. High covariate risk of agricultural production (Binswanger and Rosenzweig, 1986), the asymmetric information and lack of enforcement of loan contracts (Hoff and Stiglitz, 1993) government reckless interference in credit market and rent-seeking as a result of credit rationing (Braverman and Guasch, 1989) were some of the factors responsible for the meager performance of the Government direct credit programs in many countries including Pakistan.

Agriculture provided most important movement to economic growth by generating supplementary demand of goods and services as a result of higher prices of agricultural produce. As a result of unwarranted impale in prices of major crops, an extra amount of Rs. 342 billion was relocated to the rural areas in 2010-11 solitary. Converse to this only Rs.329 billion were transmitted to the rural areas on account of higher prices of major crops during the eight years (2001-2008).

As the growing period near to start, prices for farm crop continue to decrease, while the expenditure of producing a crop increases. Therefore, the farmers depend on credit to manage their budget but with stricter credit rules, it is harder and more expensive to obtain loan from the formal institutions (Sherrod, 2009). The access to external financing resources (mostly debt and leasing) being limited, farmers’ operations and investments heavily depend on internal financing (Barry and Robison, 2001).

Access to credit affects household welfare outcomes through at least two channels. First, it removes capital constraints on agricultural households. The second channel through which access to credit affects household welfare is by increasing its risk bearing ability. The present study mainly focus on the borrowing behavior of the farmers and what are the constraints faced by the farmers in the production process.

Research Question

What is the impact of Agricultural Credit Schemes/Financial Institutions on the borrowing behavior of farmers?

Rational Of the Study

How Financial Institutions can modify their lending practices for betterment of farmers, as they contribute a reasonable share in the economy of country.
Review of Literature

Many reports have been compiled on the agricultural credit needs and the credit constraints faced by the farmers in Pakistan but few comprehensive studies related directly to the problem under investigation have so far been conducted in the country. However, some studies relevant to this problem are reviewed as under:

It is concluded that that higher interest rate and credit limitations as well as customized lending practices have been proposed to enhance the performance of credit program for small farmers in developing countries. The small farmers credit problems were more sever in Pakistan than Bangladesh and India. In Pakistan the credit cooperatives had been more interested to small farmer needs and offered no substitute but still their impact had been restricted because small farmers were unable to control them through participation at the decision-making level. They also suffered from poor management and financial instability and had not been able to keep up with the repaid increase in the demand for credit in wake of the cash intensive “green revolution” technologies. Kamajou et al. (1980) concluded that higher interest rate and credit limitations as well as customized lending practices have been proposed to enhance the performance of credit program for small farmers in developing countries.

According to Singh (1981) the small farmers credit problems were more sever in Pakistan than Bangladesh and India. This was partially due to the slower growth of credit cooperatives; especially those geared to the small farmers needs. Khandker and Faruqee (1999) observed the role of financial institutions for the welfare of rural household in Pakistan. Chloupkova and Bjornskov (2003) revealed that in the agriculture sector the access to credit is necessary to invest in production structure and capacity.

Access to credit is the real problem among the countries in Central European and East African, as well as a whole range of other countries. Ibrahim et al. (2007) revealed that credit markets were slightly segmented and that the informal sector was not only the major source of loans in rural areas in Ethiopia as shown by Krishnan and Sciubba, 2004, but also dominates the urban areas. Kaur R. (2009) revealed that farmers of Punjab mostly relied on non-institutional sources for their credit needs and the share of non-institutional sources of credit for productive loans was 54 percent, whereas share of unproductive loans was 46 percent. The study showed that there was a positive correlation between the size of holding and the amount of credit availed. And Malik (1987) revealed that one of the most existing and fundamental challenges in the development of agriculture were effective and feasible transmission of modern technology to small farmers. Aleem (1990) indicated that contrast to formal finance, informal finance provides a much easier conditions to get loan.

Stiglitz and Weiss (1992), described credit constraints in two terms-redlining and credit rationing. Credit rationing refers to a situation in which, among observationally identical borrowers, some get loans and others are denied. Qureshi (1993) indicated that over the last
thirty years, Pakistan had pursued a supply-led approach to boost rural credit. He also revealed that between 1973 and 1985, the share of institutional credit increased from 10 to 31 percent of total rural credit. Despite the rapid increase in institutional credit, only 6 percent of cultivator households had access to the institutional credit for their input needs. World Bank (1995) reported after examining the extend and degree of rural finance in Pakistan that the access by poorer household to institutional source of credit was constrained by complex procedures, and informal sources were much simpler and more reliable, often requiring little costrel.

Zeller et al. (1997) defined that access to credit affects household welfare outcomes through at least two channels. First, it alleviates the capital constraints on agricultural households. Expenditures on agricultural inputs must be incurred during the planting and growth periods of crops, while returns are received only after the harvest several months later Eswaran and Kotwal (1990) defined the second channel, through which access to credit affects household welfare, was by increasing its risk-bearing ability and altering its risk-coping strategy.

Iqbal M. et al. (2003) analyzed the impact of institutional credit on Production in Pakistan. A large availability of institutional credit for operational expenditure was made possible during the mid periods of 1980s-1990s. Nuryartono et al. (2005) revealed that many rural households had lack access to either formal or informal credit market. The study showed that only 21.5 percent of the household had access to formal credits in the rural areas of Central Sulawesi Province while only 18.1 percent of the households were not credit constrained. Gilligan et al. (2005) revealed that there were two indicators of credit constraints based on reports from agricultural production models. One was excess demand for credit and other was self-imposed credit rationing due to default risk. Both indicators yield plausible results in estimates of the determinants of the probability of being credit constrained. Ahmad T. and Gill Z. (2007) concluded that commercial banks were the most important pillar of Pakistan’s financial sector and at the same time and vital source for agricultural credit. The technical efficiency of commercial banks functioning in Pakistan was estimated by employing Data Envelopment Analysis (DEA) under Variable Returns to Scale (VRS) after intensive agricultural lending by commercial banks.

Data and Methodology

The success of any econometric analysis ultimately depends on the availability of the appropriate data.

Household and farm survey of 80 farm households was conducted in September 2009 from Faisalabad District. The researcher mostly at farmer’s farms personally interviewed all the farmers included in the study sample. However, some of the respondents were interviewed at other locations like home, Deras etc. Interview schedule was developed in English but the respondents were interview in their local language, or Punjabi. The survey collected information of household as a whole, such as personal profile, education, health facilities, employment, agriculture production, consumption, credit and saving activities. For information
about credit, many questions were asked from households whether they borrow any money from informal sector and information of loan they taken including source of loan, credit constraints, borrowing amount, duration, interest rate and collateral used for the source of loan from the formal institutions. In this way researcher had obtained all information necessary for research. Univariate analysis was used to explain all these variables. The credit market in Pakistan is mainly comprised of formal and informal components. There is differential borrowing of the farmers due to credit constrains. This is causing the problem of selection biasness that farmers are going to behave in one or other way. To overcome this problem Heckman, 1979 provided the solution.

The elements of the Heckman approach were laid out as follows:

\[ y_i = \beta' x_i + \varepsilon_i \text{ if } \beta' x_i + \varepsilon_i > 0 \]
\[ = 0 \text{ if } \beta' x_i + \varepsilon_i \leq 0 \] 

(1)

Where:

\[ y_i \] is the dependent variable and the \[ x_i \] were regressors. In addition, there was a censoring indicator, \[ z_i \] which was as follows: \[ z_i = 1 \text{ if } y_i > 0 \text{ and: } z_i = 0 \text{ if } y_i \leq 0 \]. It was expressed that:

\[ E[y_i | z_i = 1] = \beta' x_i + \sigma \lambda_i \] 

(2)

Where \[ \lambda_i \] is the inverse Mill's Ratio defined as:

\[ \lambda_i = \frac{\phi(\alpha + \beta' x_i)}{\Phi(\alpha + \beta' x_i)} \] 

(3)

Where: \[ \phi \] and \[ \Phi \] were, respectively, the probability density function (p.d.f) and cumulative density function (c.d.f) of the standard normal distribution. Here value of the \[ \lambda_i \] depends on \[ \beta \] and \[ \sigma \].

It is the three step procedure which can be applied as: First, run a Logit regression of INT was run on the Dependency ratio, Education of males, Transitory income, Farm experience, Total Operated areas in acres, Source Dummy( specified as one if govt institution is providing credit otherwise zero. The logit model can be written as:

\[ \text{Logit } [p(INT=1)] = \log \frac{p(INT=1)}{1-p(INT=1)} = \alpha + 81(dpratio) + 68(edu)+63 (ltinc) +64 (farmexp) + 85 (opertarea) + 86 (sorcdm) \]
From this Inverse Mill’s Ratio was computed and saved and added as explanatory variable among the other explanatory variables, Initial liquid assets, Value of farm implements, Previous year’s income, land owned in acres, Farm experience, Number of males. The functional form of the function is

$$\text{MAXINT} = \alpha + \beta_1 \text{(lnaset)} + \beta_2 \text{(lnimplmnt)} + \beta_3 \text{(lnprevincm)} + \beta_4 \text{(landownd)} + \beta_5 \text{(farmexp)} + \beta_6 \text{(male)} + \beta_7 \text{(λi)}$$

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In the next step predicted interest rate was included as explanatory variable in the borrowing function. The remaining explanatory variables are Initial liquid assets, Value of farm implements, Previous year’s income, land owned in acres, Dependency ratio, and Education level.

$$\log \text{BORR} = \alpha + \beta_1 \text{(lnaset)} + \beta_2 \text{(lnimplmnt)} + \beta_3 \text{(lnprevincm)} + \beta_4 \text{(landownd)} + \beta_5 \text{(dpratio)} + \beta_6 \text{(edu)} + \beta_7 \text{(predint)}$$

Resultantly we have estimated two equations interest rate function and borrowing function from three sets of exogenous variables. The equations are exactly identified from this procedure.

**Results And Discussion**

**Household Characteristic Of Respondents**

**Age**

Age is the one of the most important indicator to determine the behavior of human beings. It shows the ability to do work, efficiency, willingness to progress, experience and attitude towards various social and economic aspects of life. In the present study according to age categorization majority of the borrowers falling in the age category between 46 to 66 years while majority of the non-borrowers are between 25 to 45 years. This can be seen in the rural Punjab that in the early age the farmers are cultivating their land as whole family unit. But as the natural division of land took place the farmers are facing financial constraints which compel the farmers to look for different financial resources for the cultivation of separate unit of land.

**Size of Land Holding:**

Sharif (1983) had stated that the size of land holding was one of the major determinants of the financial status of a farmer, which in turn affects farmer’s ability to adopt modern production practices. The present study in table 2 reported that land distribution in Punjab is very much squeezed and small farmers are more inclined towards the borrowing though both borrowers and non-borrowers have small land holdings.

**Education Status of the Respondent Farmers**
Unfortunately the literacy rate in Pakistan and especially in rural areas is very low. Information with regard to education of the respondents was collected and given in table 3. Result shows that education has significant effect on the mind of the borrower farmers.

**Family Size of the Respondent Farmers**

Family is the basic unit of a society and plays very important role in family income, consumption, availability to labor, level of expenditures and credit requirements also increase. Analysis showed that the majority of the borrowers having the family size 5-7 as the age increased the family size increased means that with increase in age size and family pressure force the farmers for the borrowing.

**Total Operated Areas of Land in Acres**

In the present study the total operated area was categorized in table 5. Analysis shows that 22.5 percent borrowers have 1 to 10 acres operated land, 11.25 percent of the borrower’s have 11 to 20 acres operated land, 3.75 percent borrowers have 21 to 30 acres operated land and 1.25 percent of the borrowers have 31 to 40 acres operated areas. The result shows that majority of the borrowers have 1 to 10 acres operated land. Farmers with small land holding have more thirst for credit to meet financial constraints to cultivate the land.

**Farm Experience of the Respondents**

Table 6 shows that majority of the borrowers (17.5 percent) had 26 to 46 years farming experience while majority of non-borrowers (47.5) were having farming experience between 5 to 25 years. The farmers with more farming experience are borrowing the credit for the cultivation of the land.

**Credit Information**

Table 7 shows that only 31 respondents were borrowing from formal or informal credit market. While 49 respondents were not getting loan because of high interest rate, due to religion, enough income, fear of loss in business and lack of requirement to guarantee the lender.

**Level of Satisfaction from Repayment Criteria of Credit**

It is psychological fact that for the success of any scheme, the people involvement should be satisfied. The level of satisfaction may be fully satisfied or not satisfied. Table 8 shows that
26.25 percent borrowers were satisfied from repayment criteria of the credit while 12.5 percent of the borrowers were not satisfied from repayment criteria. 1.25 percent of the non-borrowers were satisfied from repayment criteria of the credit but they did not borrow because they had enough income. 60 percent of the non-borrowers were not satisfied from repayment criteria of the credit. Overall 78 percent were not satisfied from the repayment criteria of credit.

**Borrowing Amount of the Respondents**

The borrowing amounts of the respondents are useful to mention for the improvement of the rural credit provided by the different credit institutions. If the agricultural inputs are costly, the farmers’ borrowing amount would be increased. Table 9 depicts that majority (87.09 percent) of the respondents borrowed between up to Rs 400,000 to meet various farm expenses. It means that the demand from the farmers is for the small and timely loan to meet their expenses.

**Purpose of the Borrowed Credit**

Purpose for which loan is drawn means the attitude of the farmers about the utilization of credit. Purpose is directly related to the awareness of the farmers about different modern farm innovation. Table 10 shows that the major share of agriculture/rural credit (61.29 percent) issued to the farmers was spent on agricultural production, 16.12 percent was spent for the purchase of agriculture land, 9.67 percent for the purchase of tube well and 12.90 percent for marriage or death expenses.

**Source of Agriculture/Rural Credit of the Respondents**

The rural financial market in Pakistan is comprised of two broad segments, i.e., the formal and informal and they exist side by side. Table 11 shows that majority of (54.83 percent) respondents borrowed agriculture credit from ZTBL, 9.67 percent of the respondents borrowed agriculture credit from Commercial Banks, 29.03 percent of the borrowers borrowed from Arthies and 6.45 percent borrowers obtained credit from friends.

**Credit Constraints in Formal Credit Markets**

Credit constraints mean restrictions on access to credit at market rates. These can arise from quantity rationing due to weak enforcement mechanisms or information asymmetries in credit contracts (Stiglitz and Weiss, 1981).

The number of households with access to formal credit among the whole sample of households was 32 households or 43.75 percent. This means that those households gave a positive
response when they were asked about the maximum amount of money they could borrow from any source of formal credit institutions. Of the 35 households, 31 households participated in the formal credit markets. Approximately 70 percent of the households (22 households) out of total number of borrowers were classified as partially quantity constrained because they did not receive the full amount that they proposed to the institutional credit.

On the right hand side of the figure, one can see that 56.25 percent of the household sample (45 households) had no access to formal credit markets. In which 8 households had no access credit and were classified as non-credit constrained. They did not need to be engaged in the formal credit markets because they had enough money. However, most of the households that had no access to formal credit were categorized as credit-constrained households (39 households). There were many credit constraints that showed why the households were not involved in formal credit markets. 43.58 percent households faced collateral problem, 30.76 percent households faced the problem of transaction cost, 17.49 percent of the households said that the procedure was time consuming and 7.69 percent of the household faced the problem of lack of information about credit.

Econometric Analysis

Application Of Heckman’s Approach

Model Results

The results of Logit model were obtained in Table 12 which revealed that most of coefficients were having expected signs but were not significant except source dummy (p=0.01). It revealed that institutional sources are supplying the credit in justified manner and on demand side it is reducing the transaction cost. This is providing an opportunity to the farmers to obtain credit with lesser transaction cost. The results were consistent with (Carter, 1988); (Carter and Weibe, 1990), (Stiglitz and Weiss, 1981),

In the second step, the Inverse Mill’s Ratio was computed and added as the explanatory variable in the regression of MAXINT on the explanatory variables. The results revealed in Table 13. Interestingly, the land was with expected sign and statistically significant. This is evidence that the land is main collateral for landing institutes. ZTBL is accepting land as collateral nearly 100 percent cases. In the equation (2) Inverse Mill’s ratio was introduced to control the selection biasness. The coefficient has negative sign and significant. This confirms the reliability and unbiasness of model

The demand for borrowing was estimated from equation (2) and the results are given in Table 14. In this equation the coefficient of land, value of initial liquid assets and dependency ratio was not significant and had no impact on borrowing behavior. The coefficient of education was significant exhibiting that education played a major role in decision making for credit and to understand the credit procedure which ultimately reduce the transaction cost of the borrower.
Borrowing behavior is also influenced by previous year’s income which used as proxy for the welfare of borrower. In this analysis the coefficient was significant. This implied that the strong financial position of the household will reduce the probability of being constrained. Similarly, farm implement has significant impact on the amount of borrowing. The predicted interest rate was also positive and significant. (Malik, 1999) and (Akram, 2008).

Conclusions

Credit plays an important role in the development of the economy. It plays an important role in production process as the farmers short of financial resources. Despite many Governments efforts by the introduction of credit policies and schemes the result revealed that only 43.75 percent of the respondents have access to formal credit market. Most of the households that had no access to formal credit were categorized as credit-constrained households. There were many credit constraints that showed why the households were not involved in formal credit markets. In which collateral was one of the major constraints, 43.58 percent of the households faced collateral problem. It was also confirmed by the interest rate function that land mainly used as collateral. The estimated demand for borrowing implies that source of loan, size of land holding, predict interest rate, education level, previous year’s income and value of farm implements are the most important factors affecting household’s credit activities.

Suggestions

Collateral requirements should be relaxed so that credit has its desired impact. The crops and livestock can also be used as collateral especially for tenants and land less poor.

Many respondents were credit constraints due the religious obligation. In this respect the Islamic banks should take initiative to launch interest free credit schemes.

Awareness building programs about credit for farmers and special training programs for institutional credit should be arranged. It is thus required that workshops and seminars should be arranged for the field staff.

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