Research Journal of Finance and Accounting
ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online)
Vol.4, No.8, 2013

Shifters of Participation in Micro Credit and Credit in General in Pakistan

Imran Qaiser
Lecturer, Department of Economics, GC University, Faisalabad
E-Mail: iq_fspk@yahoo.com
Dr. Nadeem Sohail
Principal, College of Commerce, GC University, Faisalabad
E-Mail: Sohail5241@hotmail.com
Muhammad Umar Farooq
M.Phil Scholar, Department of Economics, GC University, Faisalabad
E-Mail: umareco@gmail.com

Abstract
This study explores the determinants of participation in the credit market using Binary Logit Model on a total sample of 185 small scale traders including 85 borrowers and 100 non-borrowers in the third largest city of Pakistan "Faisalabad". Two different models were estimated including one for the micro entrepreneurs and the other for both micro and small scale traders. Results indicate that higher Average Propensity to Consume is a major factor of entrance in the credit market. Family size and the level of education were also positively related with participation in credit market. However number of earners is negatively related with the probability of entrance in the credit market. H-L Statistics shows that model is good fit.
Key Words: Credit Participation, Micro Credit, Logit Model.

1. Introduction

There are different factors why the people are reluctant to entre any of the credit programs. While collecting the data from the non-borrowers, it was found that businessmen generally showed no interest to take loans. Some of the major reasons that they told of not borrowing were. One of the major reasons is the amount of loan that they are interested to get of less than a million is not provided by any of the commercial banks. Another major reason is the non availability of any thing that could be kept as collateral. High interest rate charged is also a major reason to keep the shopkeepers away from loan. Shopkeepers are generally unaware of the fact that they could enhance their profits by adding more money in the business. So there answer is that they do not require credit. Some of the people are not interested in loans due to religious constraints.

Provision of different financial services like insurance, money transfer and the credit to the low-income people at the larger level called microfinance. (ADB2000). Zafar et al. (2009) defined Microfinance as the availability of different financial services like credit, saving, money transfer, payment services and insurance to the low income people and women in the long run. Microfinance can also be defined as provision of loans, insurance and money transfer facility to the micro and small level business or where the commercial banks face heavy transaction cost. Different institutions defined the scale of the business differently. The definition of Micro, Small and medium business by Small and Medium Enterprise Development Authority (SMEDA) is the most comprehensive. Micro level business has been defined as an enterprise that has less than 10 employs and has productive assets of less than 2 million. Small scale entrepreneur has 10 to 35 employs and average value of stock of 2 to 20 million. While medium size firm hire less than 100 employees and have productive assets of less than 4 million Pakistani Rupee.

1.1. Objectives of the study

- To find the shifters of participations in micro credit and credit in general.
- To give policy recommendations in the light of the results that could enhance credit access to the small scale traders.

2. Review of the Literature

Banik (1993) believed that, although low interest credits were allocated to farmers to alleviate the negative effect of pricing policies, these credits could not meet their main targets. In other words, these credits neither had increased investment and rural development nor resulted in decreasing monopoly power of informal sector in increasing interest rate. Khandker (2003) showed that microfinance in Bangladesh has positive effect on weekly expenditure, assets of landless women, registration of girl in school and so on. Chen and Snodgrass (2001) also mentioned positive effects of such credits in case of India. Cheng (2006) described the performance of microfinance programs in China using a large household survey dataset from China and found that the microfinance programs in China have failed to target the very poor automatically in the poor areas, as the

demand for micro-loans is positively related to the household incomes, the opportunities for off farm investment and the educational level of female borrowers. The study also concluded that the current microfinance programs in China, even failed to target the very poor in the very poor areas of China, had contributed positively to poverty reduction. Bakhshoodeh and Karami (2008) investigated the key factors affecting access to credit allocated by the Iranian Agricultural Bank as the main supplier of micro-credits to poor in the rural areas using ordered probit model. The required data were collected by completing 198 questionnaires from farmers in Kohgiloieh-Bovirahmad province in southern Iran. Results indicated that variables such as levels of farmers' literacy, their total revenue and acreage of land under cultivation have positive effects and distance to bank branches has negative effect on credit accessibility. Distances to the branches are recognized to be one of the major handicaps in poor access to the credits. Shah, et al. (2008) explored the determinants of participation in credit program using Binary Logit in the rural areas of Sargodha. Age of the household was found to be negatively related with the odd ratios revealed that households of younger age were found to be more interested to take the loan. Education was also found to be negatively related with odd ratios, concluded that with an increase in education of the household head results in a decrease in the credit participation. Family size of the household had a positive and the significant impact on credit participation. Revealed that households of higher family size had to borrow. Number of earners in the family was also positively and significantly related with credit participation. More interestingly interest rate was found to have a positive impact on the credit access. Households having their own house were significantly more interested to take the loan than those who were living in a rented house. Presence of any financial institutions, banks or organization in the area showed an increase of 3.29 times more than that the odd ratios of absence of such formal institutions. Balogun and Yusuf (2011) examined critically the key factors influencing demand for micro credit among rural households in Ekiti and Osun states, Nigeria using multistage sampling. Data on household demographic characteristics, social capital and microcredit variables were collected with structured questionnaire. The result of multinomial model showed that household social capital variables, dependency ratio and credit variables significantly explained households demand for credit. Our analyses suggested that policy makers interested in improving the living conditions of households might be advised to consider promoting social capital. Islam, et al. (2011) explored the determinants of participation in micro credit in the agriculture sector of Bangladesh. It was found that higher age farmers were less interested to take loan. Larger land holders and the wealthier household had a negative impact on the probability to enter in the credit market. However the education of the farmer and the family size had an insignificant impact on the probability to enter in the credit market.

3. Data and Methodology

3.1. Source of the data

Data was collected from different beneficiaries of institutional credit and non beneficiaries by the help of a questionnaire. Micro level shopkeepers whose average value of stocks are less than 2 million and small scale traders whose average value of stocks are from 2 million to 20 million according to the definition of Small and Medium Enterprise Development Authority given in Introduction, have been chosen for this study. Borrowers have been classified in to two groups, microfinance and small scale borrowers on the basis of loan amount. Borrowers who have taken a loan of less than 1 million are microfinance borrowers as they do not have an access to the commercial banks. More interestingly they do not benefit even from microfinance institutions due to fewer amounts offered, return of loan in installments and high interest rate. Therefore only such microfinance borrowers have been selected who took the loan few years ago from commercial banks and rescheduled their loan. Small scale borrowers are those who took loan of an amount of 1 to 3 million.

3.2. Sampling Technique and Sample Size

Simple Random Sampling Technique was used for this study. Sample was taken from different parts of Faisalabad.

While doing the econometric analysis, it is necessary to obtain a large sample that make the parameters consistent. Sample size should be such that it represents the whole population. Therefore a sample of 185 was taken including 85 borrowers and 100 non-borrowers.

3.3 Variables of the Model

Different variables were kept as the regressors to find the determinants of participation in micro credit and credit in general. House ownership, shop ownership, type of customer and scale of the business have been quantified by creating dummy variable. However education and business experience have been taken in years.

3.4. Binary Logit Model

To estimate the determinants of participation in credit program, Binary Logit model was used. Depended variable is of dichotomous nature so applying OLS on such model may lead to unreliable results. Applying OLS on an equation having depended variable of dichotomous nature is called Linear Probability Model (LPM). LPM may have following consequences mentioned in Gujrati 2004.

- Error term of LPM model is not normally distributed.
- Error term of LPM is of heteroscedastic nature.
- Estimated Y values may lie out side thee range of probability that is 0 to 1.
- R2 of LPM is generally quite low and does not explain the true variation of the model.

Therefore Logit model is preferred over LPM. Probabilities are the non linear function of the explanatory variables and it is based on cumulative Logistic Distribution Function. However log of odd ratios are the linear function of the explanatory variables.

Following equation was found by using Logit model.

Credit = β_0 + β_1(Family Size) + β_2(Customer) + β_3(BExp) + β_4(Education) + β_5(BOwn) + β_6(HOwn) + β_7(APC) + β7(Earners) + μ

Above equation was estimated for both determinants of micro credit and credit in general. BOwn = Ownership of Business Premises, HOwn = Ownership of House, APC Average Propensity to Consume and BExp = Business Experience.

3.5. Hosmer-Lemeshow Test for Logit model

To check whether Logit model or the Logistic regression is good fit or not, Hosmer-Lemeshow Test is used.

Test of Hosmer-Lemeshow has the following statistical form.

$$H = \sum_{g=1}^{n} \frac{(O_g - E_g)^2}{N_g \pi_g (1 - \pi_g)}.$$

Where O_g, E_g, N_g, and π_g represent the actual events, estimated events, no of observations, predicted risk for the g^{th} risk quintiles group, and n is the number of groups. It follows chi – squared distribution with n-2, df.

The Null Hypothesis of the Hosmer-Lemeshow Test is that the Model is good fit or there is not a significant difference between the actual and the estimated values against the alternative hypothesis that Logit model is not good fit on the given equation or there is a significant difference between the fitted values and the actual values. If the calculated Chi Squared test statistics is less than the critical value of Chi Squared distribution or if the probability calculated from this statistics is greater than the given level of significance then accept the Null Hypothesis that Logit model is good fit. Same if the calculated Chi squared Test Statistics is greater than the tabulated value or the P-value is less than the given Alfa then reject the null hypothesis. (Hosmer and Lemeshow(2000).

4. Results and Discussion

Table 1: Frequency distribution In terms of Scale of the Business.

Type of Entrepreneur	Micro entrepreneur	Small entrepreneur	Total
Borrowers	43	42	85
Non-Borrowers	79	21	100
Total	122	63	185

4.1. Socio Economic Factors of Participation in Micro Credit

Table 2: Logit Model on Determinants of Micro Credit:

Variable	Coefficient	Std. Error	z-Statistic	Prob.
TCus	-0.891965	0.745092	-1.197121	0.2313
LOG(BExp)	1.510556	0.598794	2.522664	0.0116
BOwn	-1.141783	0.686748	-1.662595	0.0964
LOG(SIZE)	2.371095	1.312093	1.807109	0.0707
LOG(EARNERS)	-3.378313	1.012378	-3.337009	0.0008
HOwn	0.934486	0.824239	1.133756	0.2569
APC	12.35149	2.901961	4.256258	0
C	-17.28121	3.915268	-4.413801	0

Dependent Variable: CREDIT
Method: ML - Binary Logit (Quadratic hill climbing)
Sample: 1 122

Included observations: 122
Convergence achieved after 6 iterations
Covariance matrix computed using second derivatives
Different demographic and economic factors have been taken as the regressors. Borrowing from any bank has been taken as the depended variable. If the person has taken the loan, he has been assigned 1 whereas if the person has not taken loan, he has been assigned 0. So applying OLS on an equation having dichotomous variable as the depended, results found are not reliable due to the problems mentioned in Chapter 3. Business experience is positively related with participation in credit program. Traders having higher experience prefer to take loan. Traders working in a rented shop prefer to take loan as shone by the negative sign of BOWN. Traders of higher family size have low savings therefore prefer to entre in credit market. Number of earners is negatively and significantly related with participation in credit. Because such people usually are financed from inside the family. Higher propensity to consume is also a major and highly significant factor to entre in the credit market. Shopkeepers having higher APC or in other words low Average Propensity to Save (APS) take loan from banks to meet working capital requirements of the business.

Table 3: Hosmer-Lemeshow Test for the Model of Determinants of Micro Credit.

Goodness-of-Fit Evaluation for Binary Specification

H-L Statistic 6.6178 Prob. Chi-Sq(8) 0.5784

The null hypothesis of the Hosmer-Lemeshow Test is that there is an insignificant difference between the estimated and the actual values and the model is good fit. Against the alternative that there is a significant difference between the actual and the estimated values and that the model is not good fit.

Above found Hosmer-Lemeshow Test Statistics is less than the critical value and its probability is greater than the Alfa at 1, 5 and 10% level of significance, which indicates that the null hypothesis is accepted or can not be rejected. Thus it is concluded that model is good fit.

4.2. Socio Economic Determinants of Participation in Credit in General

Table 4: Logit Model on Participation in Credit in General.

Variable	Coefficient	Std. Error	z-Statistic	Prob.
TCus	-0.93968	0.49843	-1.885281	0.0594
LOG(EDU)	-1.092172	0.741146	-1.473625	0.1406
LOG(BExp)	1.676312	0.418726	4.003364	0.0001
BOWN	0.032516	0.421621	0.077122	0.9385
HOWN	-0.953166	0.575915	-1.655047	0.0979
APC	7.540654	1.560219	4.833075	0
LOG(SIZE)	0.294198	0.688326	0.42741	0.6691
LOG(EARNERS)	-1.306891	0.526901	-2.480333	0.0131
C	-6.438716	3.141041	-2.049867	0.0404

Dependent Variable: CREDIT
Method: ML - Binary Logit (Quadratic hill climbing)
Sample: 1 185
Included observations: 180
Convergence achieved after 5 iterations

Covariance matrix computed using second derivatives

Again participation in credit has been taken as the depended variable. Type of customer (TCus) is negatively related with participation in credit program. Retailers whose customers are general public are less interested than those whose customers are retailers. Retailers are 0.93 times less interested than whole sellers and it is significant at 10%. Business related experience is positively and significantly related with the entrance in credit market at 1% level of significance. Education has been found to be an insignificant factor for entrance in credit market. Again average propensity to consume (APC is one of the most significant determinant of taking loan. Its positive sign reveals that traders who expand most part of the income on consumption expenditures have less to save, therefore have to borrow. Increasing inflation in last few years have devalued the stocks. So traders have to invest more money on the business to overcome the problem of inflation. Inflation during last few years has been of cost push nature. Over all business is going through depression. So higher APC or low APS force the traders to borrow. Number of earners is negatively related with borrowing as traders having higher number of earners in the family finance the business from inside the family.

Table 5: Hosmer-Lemeshow Test for the Model of Determinants of Credit in General

Goodness-of-Fit Evaluation for Binary Specification			
H-L Statistic	5.0277	Prob. Chi-Sq(8)	0.7546

The null hypothesis of the Hosmer-Lemeshow Test is that there is an insignificant difference between the estimated and the actual values and the model is good fit. Against the alternative that there is a significant difference between the actual and the estimated values and that the model is not good fit.

Above found Hosmer-Lemeshow Test Statistics is less than the critical value and its probability is greater than the Alfa at 1, 5 and 10% level of significance, which indicates that the null hypothesis is accepted or can not be rejected. Thus it is concluded that model is good fit.

5. Conclusions and Policy Recommendations

5.1. Conclusions

The most significant determinant of participating in micro credit and credit in general is the higher Average Propensity to Consume (APC). People having high APC have to borrow in order to keep the worth of the business stable. So the most significant determinant of participating in micro credit and credit in general. Business experience is positively related with entrance in the credit market. Shopkeepers having high experience prefer to borrow. Family size is positively related with entrance in micro credit. As people belong to a large family size have very low saving rate. More over to fulfill the domestic needs. They have to borrow. Number of earners is significantly and negatively related with entrance with opting for loan or not. Reason of which is that they are financed from with in the family.

5.2. Policy Recommendations

Microfinance institutions give loans up to the limit of 150000 Pak Rupee whereas commercial banks give loans not less than an amount of 1 million Pak Rupee. So loans should be provided of an amount from 150000 to 1 million Pak Rupee by either of the two financial systems with soft terms and conditions. Traders are quite reluctant to take loan from MFI's because the loans taken from MFI's have to be returned in monthly installments. Which make the loans less efficient and less productive. So the return of loan should be in one go rather than in monthly installments.

References

Asia Development Bank (2000) Finance for the Poor: Microfinance Development Strategy, Manila.

Bakhshoodeh, M. and Karami, A. (2008). Determinants of poor accessibility to micro credits in rural Iran. International Conference on Applied Economics, 67-71.

Balogun, O.L. and Yusuf, S.A. (2011). Determinants of Demand for Microcredit among the Rural Households in South-Western States, Nigeria. Journal of Agriculture and Social Science, 7: 41–48

Banik, A. (1993). Structure of the Credit Market and its Link with the other Market, an Analysis of Village Survey Data in Bangladesh. Indian Economic Review, 28(1):55-71.

Cheng, E. (2006). The Demand for Micro-credit As a Determinant for Microfinance Outreach-- Evidence from China. Centre for Strategic Economic Studies Victoria University, Melbourne, Australia.

Gujarati, D. N. and Bernier, B. Basic Econometrics (2004) McGraw-Hill Book Company, New York. Fourth Edition

Hosmer,D.W., Lemeshow,S. (2000) Applied Logistic Regression New York, Wiley

Islam Z. Backman S. and Sumelius J. 2011, Technical, Economic And Allocative Efficiency Of Microfinance Borrowers And Non-Borrowers: Evidence From Peasant Farming In Bangladesh, European Journal of Social Sciences, 18(3): 361 – 377.

Khandker, S. (2003). Micro-finance and Poverty: Evidence Using Panel Data from Bangladesh. World Bank Policy Research Paper 2945, World Bank, Washington.

Shah R. S., Hashmi, A. A., Bukhari T. A. and Anwer, S. (2008) Determination of Credit Program Participation and Socioeconomic Characteristics of Beneficiaries: Evidence from Sargodha, Pakistan Development Review, 47(4): 947 – 959.

Zafar, R., Afzal, A. and Khan, N. (2009) Microfinance Sector in Pakistan, Pakistan Institute of Legislative Development and Transparency, www.pildat.org.

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage: http://www.iiste.org

CALL FOR PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** http://www.iiste.org/Journals/

The IISTE editorial team promises to the review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar