

The Impact of Pakistan Poverty Alleviation Fund on Poverty in Pakistan: An Empirical Analysis

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Abstract: This paper examines the impact of the Pakistani Poverty Alleviation Fund (PPAF) on poverty by using PPAF (2005) data. The analysis was conducted in two stages. The first stage determined the factors influencing access to PPAF microfinance and the second stage examined the impact of PPAF on poverty. Access study was conducted using the logit model. The full model containing all the predictor was statistically significant, indicating that the model was able to distinguish between respondents who have access and those who do not have. The second stage was divided into two steps. The first step examined the difference in the income between PPAF recipients and non recipients. The two incomes were found to be statistically significant but with little effect. The second step used logit model to determine the impact of credit on the poverty status of the beneficiaries. It was found that microcredit has no significant effect on poverty status of the beneficiaries, however six of the factors specified in the model were found to be significant with the model explaining 25 to 35 percent of the factors that determine the poverty status of the respondents.

Key words: Access • Poverty • PPAF • Microcredit • Logit

INTRODUCTION

Poverty alleviation has been one of the leading goals of development. Many studies have been undertaken to examine poverty alleviation and its long run social and economic effects. Three international reports published at the dawn of this millennium (World Bank 2000; IFAD 2001 and ILO 2000) have all focused on means to end the rural poverty [1]. Poverty has being a major problem in Pakistan [2] and mostly it was a rural phenomenon. However with incessant rural - urban migration, urban poverty is now on the increase in Pakistan. Rural poverty is as a result of few opportunities opened to the rural dwellers to meet their basic needs which lead to their exodus in large number to urban areas [3].

There have been various programs initiated by different government in Pakistan to alleviate poverty. One of these is the provision of microcredit to the poor. Micro credit increases the income generating potential of the poor [3]. In her bid to increase the income generating ability of the poor, the government of Pakistan

established Poverty Alleviation Fund (PPAF) in 2000. PPAF is a private, non-profit, organization that provides funds to the poor with the help of non-governmental organizations (NGOs) and participatory organizations (POs). Its target is institutional and capacity building to improve the coverage of the NGOs and social organizations that partners with it. At the start, PPAF signed agreements with five Partner Organizations (POs) to disburse Rs. 5 billion over the first five years. These five POs are: Taraqee Trust, Quetta (Balochistan), Agha Khan Rural Support Program (AKRSP) - Gilgit (Northern Areas), National Rural Support Organization (NRSP) - Islamabad (Federal Area), Family Planning Association of Pakistan (FPAP) - Lahore (Punjab) and Kashf Foundation - Lahore (Punjab). Latter on, several other partners entered into agreements with PPAF and the Soon Valley Development Program is one of such enthusiastic organization. The target population of the PPAF project is poor and disadvantaged rural and urban communities. The benefits of the project will accrue directly to poor through: (a) income generation

opportunities; (b) improved community physical infrastructure in the underserved areas; and (c) greater economic integration of women. Importantly the project is to complement government efforts in improving the living condition of the poor sections. Over the last one decade, PPAF has become a major player in the development sector in Pakistan [2].

The study on the impact of micro-credit on poverty is relatively new. Most of the studies on the impact of micro credit are conducted after 2000. Few NGOs in Pakistan carry out regular study to evaluate the effect of microfinance on their participants [4]. In line with this, PPAF commissioned the most comprehensive national level studies on the impact of its fund on its clients. The first survey was done in 2002 with 1800 participants. This was followed by the second study in 2005 with over 3000 samples of households from both borrowers and non borrowers of the fund. These surveys were commission to Gallup Pakistan [2]. This paper used the 2005 PPAF survey to analyze the impact of access to Pakistani Poverty Alleviation Fund on the poverty alleviation in Pakistan. Specifically, the study examines the determinants of access to microcredit programme of PPAF; and the effect of participation in PPAF microcredit programme on the poverty status of respondents [4].

Literature Review: Rahman [5] describes microcredit as an extension of a small amount of collateral free credit to individual or organized group of people for their self employment and/or income generation activities, thereby assisting them in supporting their livelihood. Microcredit offers broad based range of financial and non financial services: these include deposit, insurance, money transfer among others to the poor and low income households and their micro enterprises [6]. It is established on the concepts of flexibility to the needs of the client by pooling members' deposits and extending loans to members after a given period thus enabling those who are excluded by the conventional lending institutions to access capital. This is because small loans help the poor and self employed to increase their income, allowing them to improve their standard of living and hence rise out of poverty [7].

The inability of the formal and informal financial systems to provide credit to non-bankable poor has led to innovations in the rural financial markets by designing low cost credit facilities that are formal but more accessible to the poor [8], with the main goal of alleviating poverty with particular emphasis on employment and income generation among the poor [9]. These programs

are aimed at mobilizing the resource poor and particularly rural women who in most cases lack productive assets and property rights.

The front runner in this area is the Grameen Bank project of Bangladesh founded in 1974 to operate a microcredit system where peer group serves as the loan security and the loan granted tied to a self employment objective. The credits are given to the poor without any collateral, but with an obligation to save which is seen largely as a means to promote discipline and ensure repayment. The success achieved by the Grameen Bank propelled governments, NGOs and private sector in developing nations with the support of local and international donors to sustain the intervention in the rural financial market to replicate the Grameen project. In 1997, the microcredit summit launched the global campaign to expand the coverage of micro finance to 100 million of the world's poorest micro entrepreneurs by 2005.

Microfinance leads to the attainment of the development goal through four ways. The first is by poverty reduction through ensuring service delivery to the poor families who possess the capacity to better their livelihoods but lacked the financial resources to achieve this potential. The second is the establishment of functional financial markets especially in rural communities for households that were hitherto without proper access to financial facilities. Organizations using this method are most focused on income and wealth generation that give the poor more control over their financial security. The third approach is the micro enterprise development where the concern is on encouraging and strengthening the micro enterprise activity in the localities they serve. This facilitates job creation or income and wealth creation and in addition to credit provision, provides business and technical skills training, access to business information and marketing services. The fourth approach, known as community economic development approach, combines one or more of the other approaches with the broadened of unit of analysis in the community and it normally overlaps with the poverty alleviation focus in which a community is identified based on need with an objective to create a healthy regional economy with successful businesses and opportunities for people with low income [10].

Most literature that justify microcredit have argued that providing targeted production credit to the rural poor through microcredit schemes is likely to initiate a virtuous cycle of increased household income through increased savings and investment, however, its success or failure

will depend on the household human and physical capital resources such as size and age structure of the household, its wealth and the market imperfections it faces and the economic opportunities in the area among others. Many studies have been conducted to measure the impact of micro credit schemes on the welfare status of the beneficiaries [11]. Chowdhury [12] assesses the impacts of participating in the micro credit programme of the Grameen Bank on consumption of participating households. They found that the participation of a household in the micro credit programme of the Grameen Bank increases consumption of participating households significantly. However, there is non-linearity in the increasing trend in consumption of participating households. The consumption level goes up gradually with the increase in the membership duration up to five years of membership, but the growth rate starts declining after that period of membership.

Wydick [13] examines the impact of microenterprise credit programs on class structure mobility in developing countries. He develops a model that endogenously generates an eight-fold class structure. Theoretical predictions from the model were compared with data on class structure mobility collected in western Guatemala. His empirical results show that upward class structure mobility increases substantially with access to credit and that the combined effect of innate entrepreneurial ability and credit access has a greater impact on upward class structure mobility than the interaction between formal schooling and credit access. Swain [14] reviews the existing impact assessment literature to examine empirical evidence to see if microfinance is a good poverty alleviation strategy. In addition to the effects of microfinance at the micro (enterprise, household and individual), meso (regional) and macro (national) level, the long-term ability of microfinance to reduce poverty is also evaluated by investigating its sustainability. The evidence suggests that microfinance has a higher impact for households closer to the poverty line, rather than the poorest of the poor.

Aroca [15] uses two different sources of data to evaluate Brazilian and Chilean banks and NGOs microcredit programs. Using propensity score and matching techniques, He compares the average income of individuals that received microcredit to that of control groups, formed by people with similar characteristics. The results for the Brazilian data show a high positive impact of microcredit programs, especially for those associated with banks. In the Chilean case the evidence is weaker for the microcredit administered by bank. As for

NGO-based programs, the evidence suggests that their impact on the average income of their clients is actually negative. Kavane and Wydick [16] compare the performance of female and male entrepreneurs in a microenterprise credit programme in Guatemala by developing a model to show that increases in value of home time during childbearing years for women may substantially account for gender differences in responses to credit access. Their empirical results show that during childbearing years in which women allocate much of their time to caring for children, female entrepreneurs are restricted in their ability to generate employment within their enterprises compared to other entrepreneurs in the sample.

Mosley [17] analyses four microfinance organizations: one 'commercial' and one NGO-based operation in both urban and rural areas to compare between income, asset and vulnerability measures of poverty between a group of borrowers and a 'control group' of non-borrowers socio-economically similar to the borrowers except in terms of not receiving credit. He finds out that in all the case-study institutions had positive impact on asset levels. Poor borrowers tend to have lower levels and also different patterns of asset accumulation. The income impacts increase (at a decreasing rate) as borrower income increases and declines to zero before the line of extreme poverty is reached. Priya [18] studies the effect of participation in microfinance programs on incomes using a regression model. The model found that there is a significant positive relationship between microfinance programme participation and log of income. It provides evidence that participation leads to 10% higher incomes of the participants and the change in standard deviation over time was the highest for the participating group.

Akram *et al.* [19] estimate the long term effect of credit on growth and poverty in Pakistan. They found out that agricultural credit has a positive impact on the gross domestic product and its effect was more pronounced on the Agriculture GDP. Furthermore impact of agricultural credit in reducing poverty was significant both in the short run and long run. In their study on the impact of credit on the income and production level of small farmers using a randomly collected data from Rawalpindi District in Pakistan, Saboor *et al.* [20] reveals that for small farmers, credit was not a profiting activity. However, all respondents argued that their expenditures were increasing and they suggested that the credit system should further be improved so that the full benefits could be reaped both in the crop and livestock sectors and mis-

utilization of credit by farmers could be minimized. Shirazi and Khan [2], using counterfactual, combined approach on Gallup data (2005) in Pakistan to analyze the effect of micro credit on poverty status of borrowers found that micro credit improve the poverty status of the borrowers. In all, they found that poverty level of the borrowers has reduced by 3.07 per cent. However, they found different microcredit effects among different poverty sub groups. The poverty status of the core poor was marginally increased (with just 0.65 per cent) and that of quasi poor increased by 1.77. Some poor got the status of non poor and the non poor group increased by 2.25 percent. Shirazi [21] also shows that micro credit increase the return to investment of the poor. In his study using Pakistan Gallup data, 2005, he found that micro credit increased the return to investment of 79 percent of the borrower in the range of 15 to 89 per cent. Moreover, he found that that in general borrowers have been successful in earning a net weighted average rate of return from 4.05 percent to 4.93 percent per month (or an un compounded weighted average rate of 48.56 percent to 59.20 percent per year) across various businesses and female borrowers making more return than their male counterpart.

However, the results of studies on the impact of microcredit on poverty have not always been positive. Schreiner [22] analyzes US microenterprise programs and finds that although some programs can move some people from welfare to self-employment, it only works one percent of the time. He further shows that the successful in the transition were those that had the average assets, above than others and similarly educated, experienced and skilled. In his review of various studies on microcredit, Mallick [23] indicates that microcredit can result in social disruption by exacerbating gender conflict. He argues that micro credit often bring greater violence and class division to communities, favored groups gain patronage to enhance their position. The offering of money to a select few also create jealousy, anxiety in the indebted and community conflict. In their ethnographic study in rural Bangladesh, Schuler *et al.* [24] explore relationships between men's violence against women in the home, women's economic and social dependence on men and microcredit programs and note that microcredit programs have a varied effect on men's violence against women. Microcredit reduces women's vulnerability to men's violence by strengthening their economic roles and making their lives more public. When women challenge gender norms, however, they sometimes provoke violence in their husbands. Male violence against women is a serious, widespread and often world widely ignored

problem. By putting resources into women's hands, credit programs may indirectly exacerbate such violence; but they also provide a context for intervention. Snow and Buss [25] in the context of Sub Saharan Africa, conclude that the model programme which succeeds in one place does not mean that the replicates will succeed. There is trade off between outreach and sustainability of microcredit. In their view microcredit programs should be evaluated with well defined goals.

MATERIAL AND METHODS

This study uses the data collected by Gallup (2005). Over 3000 households sample was surveyed by Gallup Pakistan, out of which around 1500 were PPAF recipients between July 2001 and June 2003. The second half of the sample consists of non borrowers with similar profile with that of the borrowers. The survey was administered between February and April 2005. The respondents were asked different questions on their socio-economic profiles before and after the taking micro credit from POs and NGOs. We use the official poverty line of Rs. 878.64 per adult equivalent per month for the year 2004-05 to decompose the respondent into poor and non poor. Per capita monthly income of respondent household was obtained by dividing the current household income by the adult equivalent of average household size in Pakistan [2].

Determinants and Impact of Access to PPAF: Households' accessibility to credit is defined as capability to source credit from diverse sources [10][26]. Factors that affect households' accessibility to microcredit have been divided into demand-side (household-related) factors and supply-side (lenders/programme related) factors [27]. This study focused on household related factors. The household factors that have been hypothesized to influence the demand for credit by households include income, occupation, age and education. In his study on the accessibility to formal and quasiformal credit by farmers in Zanzibar, Mohamed [28] identified socio-economic characteristics such as age, gender, education attainment and income as determinants influencing farmers' access to formal credit. In addition with these three household factors, other household characteristics found to determine access to various types of credit include location, family size and household expenditure [29][27]. In this study, the variables specified to determine access to microcredit include household demographic (age, gender, education and residence location) and

Table 1: Description of variables used in logit model for determinant of access to PPAF microcredit.

Variable name	Variable type	Variable description
Demographics		
Poverty status	Binary	1 = poor, 0 otherwise
AGE	Continuous	Age of household head (in years)
GEND	Binary	Gender of household head (1 = female, 0 = male)
EDU	Binary	Educational level of household head
EDU 1	Binary	1 = without education, 0 otherwise
EDU 2	Binary	1 = religious education/can only read, 0 otherwise
EDU 3	Binary	1 = up to primary, 0 otherwise
EDU 4	Binary	1 = up to middle, 0 otherwise
EDU 5	Binary	1 = up to matric, 0 otherwise
EDU 6	Binary	1 = up to intermediate, 0 otherwise
EDU 7	Binary	1 = BA, BSc, B.Com, BBA, 0 otherwise
EDU 8	Binary	1 = MA, MSc, M.Com, MBA, 0 otherwise
Socio-economics		
INCOME	Continuous	Household monthly income (in Rupees)
EXP/INC RATIO	Continuous	Ratio of expenditure to household income.
OCCUPATION		
LIVESTOCK	Binary	otherwise) Household head's occupation is livestock
ENTERPRISE	Binary	(1= yes, 0 otherwise) Household head's occupation is enterprise(1 = yes, 0 otherwise)
Other variables		
PROVINCE		
PROV 1	Binary	Household live in Punjab (1 = yes, 0 otherwise)
PROV 2	Binary	Household live in NWFP (1 = yes, 0 otherwise)
PROV 3	Binary	Household live in Sindh (1 = yes, 0 otherwise)
PROV 4	Binary	Household live in Balochistan (1 = yes, 0 otherwise)

Table 2: Description of variables used in logit model for Impact of PPAF Microcredit on poverty.

Variable name	Variable type	Variable description
Demographics		
AGE	Continuous	Age of household head (in years)
GEND	Binary	Gender of household head (1 = female, 0 = male)
EDU		Educational level of household head
EDU 1	Binary	1 = without education, 0 otherwise
EDU 2	Binary	1 = religious education/can only read, 0 otherwise
EDU 3	Binary	1 = up to primary, 0 otherwise
EDU 4	Binary	1 = up to middle, 0 otherwise
EDU 5	Binary	1 = up to matric, 0 otherwise
EDU 6	Binary	1 = up to intermediate, 0 otherwise
EDU 7	Binary	1 = BA, BSc, B.Com, BBA, 0 otherwise
EDU 8	Binary	1 = MA, MSc, M.Com, MBA, 0 otherwise
Socio-economics		
INCOME	Continuous	Household monthly income (in Rupees)
EXP/INC RATIO	Continuous	Ratio of expenditure to household income.
OCCUPATION		
FARMING	Binary	Household head's occupation is farming (1 = yes, 0 otherwise)
LIVESTOCK	Binary	Household head's occupation is livestock (1 = yes, 0 otherwise)
ENTERPRISE	Binary	Household head's occupation is enterprise(1 = yes, 0 otherwise)
CREDIT STATUS	Binary	Borrower = 1, non borrower = 0
Other variables		
PROVINCE		
PROV 1	Binary	Household live in Punjab (1 = yes, 0 otherwise)
PROV 2	Binary	Household live in NWFP (1 = yes, 0 otherwise)
PROV 3	Binary	Household live in Sindh (1 = yes, 0 otherwise)
PROV 4	Binary	Household live in Balochistan (1 = yes, 0 otherwise)

socio-economic factors (income and household expenditure). Definitions of variables used in the empirical model are presented in Table 1.

The empirical analysis of the factors affecting accessibility to PPAF microcredit in Pakistan is carried out by employing Logit Model. In a Logit Model, the endogenous variable is a binary or categorical variable with 1 if the household has access to PPAF microcredit and 0 if the household has no access.

The impact of PPAF microcredit on poverty is analyzed in two steps. The first was to see if there is significant difference in the income of the borrowers and non borrowers and the second step is to check the impact. The difference in mean monthly current household income of borrower and non borrowers was analyzed using independent sample t test and the size effect of the difference in income was conducted using eta square. The empirical analysis of the factors affecting poverty of the respondents was carried out by employing Logit Model. In the model, the dependent variable is a dummy or categorical variable with 1 representing household is poor and 0 if the household is non-poor. The list of variables for Logit model is presented in Table 2.

Empirical Model: Logit is a binary choice model which describes probability of a choice between two mutually exclusive alternatives (success or failure, access or no access, poor or not poor etc). Let $U_n(Y_n, X_n)$ be the utility function of household n , where Y_n is a dichotomous variable denoting whether the household has the desired characteristics (in our case access or no access and poor or not poor) then the probability will be 1 if yes and 0 otherwise; X_n is a vector of household characteristics. If borrowing from microcredit has higher utility, the household may choose to borrow from the microcredit programme [17].

$$U_{1n}(Y_n = 1, X_n) > U_{0n}(Y_n = 0, X_n)$$

or

$$U_{1n}(Y_n = 1, X_n) - U_{0n}(Y_n = 0, X_n) > 0$$

Therefore the possibility of a household n borrows from the microcredit programme (or the possibility of a household being poor or not) is given as:

$$P_n(Y_n = 1) = \Pr(U_{1n} > U_{0n})$$

The logit model is specified as follows:

$$P_n(Y_n = 1) = \frac{1}{[1 + \exp - (\alpha + \beta X_n)]}$$

Where: α is a constant term; β is a vector of coefficients for the independent variables X_n ; Y_n is the dependent variable, equal to 1 if the household has the desired characteristics or 0 if otherwise; P_n is the estimated probability of household having access to microcredit (or poor).

The equation above stands for the cumulative logistic distribution function in a non-linear form, which makes its coefficient difficult to interpret. For easy interpretation, the model is normally written in terms of its log-odds ratio [27]. After a log transformation, the estimated model becomes a linear function of the independent variables, which is presented as follows:

$$\text{Logit}[P_n(Y_n = 1)] = \log \left[\frac{P_n}{1-P_n} \right] = \alpha + \beta X_n$$

Where the parameters remained as defined above.

One common test of comparison between two populations and it is used to compare two means and answers the question whether mean X_1 is equal to mean X_2 . The t-test formula given by:

$$T \text{ statistic} = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Where,

- X_1 = Mean income of microcredit participants
- X_2 = Mean income of non – participants
- S_1 = Standard deviation of income of participants
- S_2 = Standard deviation of income of non participants
- n_1 = Number of microcredit participants
- n_2 = Number of non participant in microcredit

The t-test was used to test the hypothesis that there is no significant difference between the mean income of microcredit participants and non-participants.

ETA Squared: Eta squared is an effect size statistics that indicates the proportion of variance of dependent variable that is explained by the independent variable. It values ranges from 0 to 1. The guideline provided for interpreting eta squared suggests that 0.01 means small effect; 0.06 means medium effect; while 0.14 means large effect [30].

The formula for eta squared is given below:

$$\text{Eta squares} = \frac{t^2}{t^2 + (N_1 + N_2 - 2)}$$

Where,

t = t-statistic

N₁= Number of microcredit participants

N₂= Number of non participant in microcredit

RESULTS AND DISCUSSIONS

Determinants of Household Accessibility to PPAF Microcredit:

Logistic regression was performed to assess the impact of a number of household factors on the likelihood that respondents would have access to PPAF credit. The full model containing all the predictor was statistically significant, $\chi^2(18, N = 3132) = 58.238, \rho < .001$, indicating that the model was able to distinguish between respondents who have access and those who do not have. The model was able to predict between 19 % (Cox and Snell R square) and 25% (Nagelkerke R square) of the variance in access and no access to PPAF microcredit and correctly classified 56.1% of cases.

As presented in Table 3, five variables (gender dummy, livestock occupation dummy, enterprises/occupation dummy, primary education dummy and Punjab province dummy) are statistically significant. The strongest predictor of access to PPAF is enterprise dummy, recording an odds ratio of 1.54. This indicated that respondents engage in enterprise are 1.5 times more likely to have access to PPAF than those who engage in other occupation, controlling all other factors in the model. The odd ratio of .762 for middle education was less than 1, indicating that the middle school respondents are .762 times less likely to have access to PPAF, controlling for other factors in the model. This finding is consistent with Mohamed [28] and Okurut [29] that found that gender, enterprise education and province have significant influence on households' access to different types of credit.

Impact of PPAF microcredit on poverty in Pakistan:

An independent sample t- test was conducted on the sample to compare the income of respondents for borrowers and non-borrowers. There was significant difference in the income for non-borrowers (M = 5213.36,

Table 3: Logistic Regression Predicting the Determinants of Access to PPAF Microcredit

Independent variables	B	S.E.	Wald	df	Sig.	Odd Ratio	95% C.I.for EXP(B)	
							Lower	Upper
Gender	-.217-	.085	6.483	1	.011	.805	.681	.951
Exp/income ratio	.001	.002	.268	1	.605	1.001	.997	1.004
Poverty status	-.016-	.089	.032	1	.859	.984	.827	1.172
Livestock	.355	.090	15.665	1	.000	1.426	1.196	1.699
Enterprise	.431	.097	19.851	1	.000	1.539	1.273	1.860
Agriculture	.137	.097	2.009	1	.156	1.147	.949	1.387
Age	.001	.004	.116	1	.733	1.001	.994	1.008
No education (EDU 1)			10.978	7	.140			
Religious edu. (EDU 2)	-.174-	.157	1.231	1	.267	.840	.617	1.143
Primary edu. (EDU 3)	-.098-	.103	.908	1	.341	.907	.741	1.109
Middle edu (EDU 4)	-.272-	.115	5.596	1	.018	.762	.608	.954
Upto matric (EDU 5)	.097	.115	.708	1	.400	1.102	.879	1.382
Intermediate (EDU 6)	.025	.174	.020	1	.887	1.025	.729	1.441
Bachelor (EDU 7)	.121	.239	.257	1	.612	1.129	.706	1.804
Post graduate (EDU 8)	-.309-	.361	.732	1	.392	.734	.362	1.490
Punjab (PROV 1)			8.157	3	.043			
NFWP (PROV 2)	-.143-	.097	2.194	1	.139	.866	.717	1.047
Sindh (PROV 3)	.156	.097	2.597	1	.107	1.169	.967	1.413
Balochistan (PROV 4)	-.032-	.119	.073	1	.787	.968	.767	1.222
Income household	.000	.000	.030	1	.863	1.000	1.000	1.000
Constant	-.275-	.194	2.006	1	.157	.760		

Table 4: Logistic Regression Predicting the Impact of PPAF Microcredit on poverty.

Independent variables	B	S.E.	Wald	df	Sig.	Odd ratio	95% C.I.for EXP(B)	
							Lower	Upper
Agriculture	-.285-	.125	5.198	1	.023	.752	.588	.961
Enterprise	-.293-	.124	5.608	1	.018	.746	.585	.951
Livestock	-.181-	.113	2.582	1	.108	.834	.668	1.041
Exp/income ratio	.202	.054	14.111	1	.000	1.224	1.102	1.361
Gender	1.859	.138	180.478	1	.000	6.417	4.892	8.416
Borrowers status	.079	.097	.655	1	.418	1.082	.894	1.309
Age	-.014-	.005	8.564	1	.003	.986	.978	.996
No education (EDU 1)			6.986	7	.430			
Religious edu. (EDU 2)	-.100-	.199	.253	1	.615	.905	.612	1.336
Primary edu. (EDU 3)	.112	.130	.739	1	.390	1.118	.867	1.442
Middle edu (EDU 4)	-.068-	.155	.194	1	.660	.934	.690	1.265
Upto matric (EDU 5)	-.062-	.158	.152	1	.697	.940	.690	1.282
Intermediate (EDU 6)	-.292-	.260	1.262	1	.261	.747	.449	1.243
Bachelor (EDU 7)	-.279-	.372	.565	1	.452	.756	.365	1.567
Post graduate (EDU 8)	-1.868-	1.054	3.144	1	.076	.154	.020	1.218
Punjab			6.537	3	.088			
NFWP	.023	.128	.033	1	.855	1.024	.797	1.315
Sindh	.103	.127	.650	1	.420	1.108	.863	1.422
Balochistan	-.331-	.169	3.834	1	.050	.719	.516	1.000
income household	-.001-	.000	371.788	1	.000	.999	.999	.999
Constant	.568	.270	4.438	1	.035	1.765		

SD=4327.766) and borrowers (M=5606.03, SD=5284.858); $t(3005) = 2.272, p = .023$ (two tail). However the magnitude of the differences in the mean between non-borrowers and borrowers (mean difference = -392.674, 95%, CI: -731.500 to -53.849) was very small (eta squared = .001652) (Pallant, [30]).

Logistic regression was also performed to analyze the impact of a number of household factors on the likelihood that respondents would be poor or not. The full model containing all the predictors was statistically significant, $\chi^2(18, N = 3114) = 812.308, p < .001$, indicating that the model was able to distinguish between the poor and non-poor respondents. The model was able to predict between 23% (Cox and Snell R square) and 34% (Nagelkerke R square) of the variance in the poverty status of the respondents and classified correctly 77.8% of cases. As presented in Table 4, six variables (gender dummy, expenditure/income ratio, enterprises occupation dummy, agriculture occupation dummy, Balochistan province dummy and household's income) are statistically significant. The strongest predictor of poverty is gender which shows that female are more than six times odd of likely to be in poverty than their male counterpart, controlling all other factors in the model. The borrower status dummy is not significant which shows that PPAF microcredit has no significant impact on the poverty

status of the beneficiaries. This finding is consistent with Mbugua [31] and Peters [32] that affirm that female household heads tend to be poor because they have limited access to productive resources. It is also in line with Hyder and Sadiq [33] that reported that the incidence of poverty in Pakistan is higher in rural area than urban.

CONCLUSION

In this paper we have examined the impact of PPAF microcredit on the poverty status of the respondents. In doing this we have used the PPAF data. The data sampled over 3000 households in Pakistan, which include 50 percent beneficiaries and 50 percent non-beneficiaries. We have divided our analysis into two stages. The first stage used the demographic and socio-economic factors of the respondents to determine factors that influence access to PPAF microcredit. The second stage examined the effect of PPAF microcredit on the poverty status of the beneficiaries.

For the first stage, we employed logit regression analysis on the sampled data, using borrowers' status dummy as our dependent variable. It was found that the model has a good fit and five out of the specified variables were found to have significant impact in determining respondents' access to PPAF. These include

gender dummy, livestock occupation dummy, enterprises occupation dummy, middle education dummy and Punjab province dummy, out of which enterprise dummy has the strongest influence, controlling all other factors in the model.

The second task was achieved in two steps. The first was to determine whether difference exists in the income of borrowers and non-borrowers and the effect size of the difference if there is any. We found that there were significant differences in the income of borrowers and non-borrowers; however the magnitude of the difference was small. The second step was the use of logit model to assess the impact of PPAF on the poverty status of the recipients. The overall model was also found to have a good fit with six of the variables statistically significant. However, participation in PPAF does not have a significant impact on the poverty level of the respondents from the sampled data, using logit regression model.

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