Physioeconomic Poverty Analysis of Grade 1 Employees of Rawalpindi City, Pakistan

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Abstract

Poverty though a universal phenomenon, is the worst challenge in the modern era, which is termed as the age of information and technology. The present study was designed to estimate the incidence of poverty for the grade I employees of Rawalpindi city. Determinants of poverty were explored by using Probit model, which was significant in the determination of the poverty status of the household. Following variables were used in the model; household size, education, experience, working individual, extra income and migration are the variables. For that objective, data from 150 household were collected through questionnaires. The results of the poverty indices showed that about twenty percent households were poor among grade 1 employees of Rawalpindi city. The result of probit models indicated that having large household size, with no extra income and migrants were increasing the probability of being poor while educational attainment and experiences did not had significant effect. On the other hand working individuals and migration were decreasing the probability of being poor.

Keywords: Rawalpindi, poverty, probit analysis, household size

Introduction

Poverty is the phenomenon that humanity is bound to live with through its history. In the course of the documented history, it is cleared that hundreds of people living on earth are unable to meet their livelihood. However, about for last hundred years the despondency of poverty is taken into account. At first it was thought that poverty only engulfed the developing and under developed countries. But it is now realized that this is the problem of whole world but the extent is more in developing and under developed world. More than 1.2 billion people – one in every five on Earth- survive on less than $1 a day. During

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the 1990's the share of people suffering from extreme income poverty fell from 30 to 23 percent. But with a growing world population, the number fell by just 123 million – a small fraction of the progress needed to eliminate poverty, and excluding China, the number of extremely poor people actually increased by 28 million. (Anonymous**,** 2003).

Poverty is extremely gigantic problem so with the passage of time different social scientist came up with different approaches to pin down the factors which enhance poverty. The Malthus theory of population, the Marxist theory of increasing misery in masses, the Noe-classical theory of maximizing behavior, the Keynesian theory of income and employment determination, and the various macro theorist of economic growth all represent direct responses to various perception of the principal economic and social problems of time. But all these theories are unable to give any hard and fast rule to eradicate or even reduce poverty at greater level (Sachchidananda, 1984).

The issue of poverty is as old as economic development. A significant quantitative research on poverty has been undertaken for many decades all over the world in general and in developing countries in particular. However the issue of urban poverty has not been addressed effectively. Nevertheless urban poverty has until recently, been low on the agenda of development policy not only in the developing world but also in Pakistan. The reason for this negligence is dominant perception of urban bias and there is need to counter this with a focus on rural development policy. The analysis of urban poverty is as necessary as the overall level of poverty in the country. There are many causes and determinants of urban poverty but distribution and management of economic and social resources in poverty reduction cannot be ignored (Malik and Sharif, 2005). It is internationally recognized that poverty reduction and governance both are interrelated. Bad governance has made poverty reduction efforts ineffective (Blaxall, 2000), Eid (2000)

and Gupta *et al.* (1998), while poverty reduction projects provide fertile ground for corruption (Woodhouse, 2001). The large proportion of work on poverty in Pakistan has been targeted towards determining absolute levels and extent of poverty in rural / agrigarian economies in the attempt to identify the effects, if any, of the 1960\s "Green revolution" on poverty levels and income disparities in those areas. It is true that poverty is higher in rural areas, but more than one quarter of urban household is also poor (Qureshi, 2001).

There is no question however, that the World's future is an increasingly urban one. Cities already account for 60 – 80 percent of the GNP in developing countries. They provide capital and labour markets for entrepreneurs at all levels of economic activity. Of world's urban population currently 2.6 billion people), 1.7 billion of them reside in developing nations, yet a third of today's urban population, some 600 million people, don't have the means to meet their basic needs. Urban poverty indicators are typically influenced by the rate of growth of the economy, since they are linked to employment, a variable which is strongly associated with the rate of output expansion (Sadiq, 1996).

Pakistan is a developing agricultural country. Poverty in Pakistan is an increasing social problem and represents the critical challenge. Socially we divide our living areas in Urban and rural sectors, so two broad socio-economic categories are; Urban poverty and Rural poverty. The focus of the study was Urban Poverty. Urban areas account for one third of Pakistan's population; one fifth of the urban population is considered to be poor; that makes nine million urban poor; they may be more, the number of urban poor could be anywhere in the range of 8 to 15 million. Thus, Pakistan should be ranking fourth in South and South East Asia by the number of urban poor. Rawalpindi is one of the major cities of Pakistan which is not only important historically and culturally but also from the

defense point of view. Rawalpindi city, also known as Pindi, has a history spread over several millenniums extending to the ancient times corresponding with the decaying period of Buddhism to the invasions of the Macedonians and then to the dawn of the Muslims era, leading to British Raj (Wikipedia, 2006).

After independence of 1947, Rawalpindi has been the home of various political powers and important events that shaped the future of the country. Rawalpindi has the long time honor of having Army headquarter. With historical buildings and bazaars, vast parks and high hills and chilling winter and hot summers, Rawalpindi has proven its status as the place with a unique experience. Archaeologists believe that a distinct culture flourished on this plateau as far as back 3000 years, now it is rapidly developing.

As mentioned before, Rawalpindi is not an industrial city, so most of the people here earn their bread by doing government jobs. They are paid according to the government pay scales. For it government devised many grades which the people get according to their job responsibilities. The basic objectives of this study was to estimate the poverty among grade I employees of Rawalpindi city, other objectives were as follows.

• To examine the demographic characteristics and household composition of Grade I employees of Rawalpindi city.
• To identify the determinants of poverty for the Grade I employees of Rawalpindi city.
• To estimate the marginal effects of poverty of Grade I employees of Rawalpindi city.

Data and methodology

Compared to other cities of Pakistan Rawalpindi is not modern city. Although all the basic facilities are available here, but the employment opportunities are very limited. A lot of work has been done on poverty before but no such research has been done

particularly for focusing on grade I employees within Rawalpindi city. The targeted population for this study was Grade I (class four) government employs. This is the most vulnerable group of the society, therefore this study aims to pin point the poverty analysis in this group and the incidence of poverty might be more in this group as compared to others.

Data collection process and sample size
Data for this study was collected in Rawalpindi city. In total one hundred and fifty Grades-I (class four) government employees were interviewed by using a well structured questionnaire from the Rawalpindi city. The main occupation of targeted population was Mali, Naib Qasid, Daftari, Wardboy, Aya, Sweeper etc. Questionnaire had different parts regarding the information about the demographic characteristics, household characteristics and composition, finally assets holdings source of income for the household. The technique of stratum random sampling was used to gather the desired information. First of all the whole Rawalpindi city was divided into six sampling unit and then from each strata twenty five questionnaire were filled each respondent in each strata was selected randomly.

The major constraints while collecting the data were as follows. Foremost, it was not possible to visit Grade I employs at household level, so it was decided to go to different offices, schools, colleges and hospitals to collect the relevant informations. Before collecting any information we had to seek permission from the head of the institution. Many of them were very cooperative and helpful, and they spare their employees even from their job responsibilities so that they can answer the questionnaire. Some of them were reluctant to give permission but when the researcher explained the purpose of the research they showed their willingness.

Statistical analysis
Numerical operations are applied to all the variables (except poverty) that are

unconditional and their respective means and standard deviations have been calculated.

To approach the problem under consideration that is probability for being in the category of poor and non-poor Probit model is recommended. (Madala, 2001).

The Probit model is expressed as;

Prob [Y$_i$=1] = P$_i$=ϕ

(α+βX$_i$)………………………………… (1)

Y$_i$=1 if non-poor
Y$_i$=0 otherwise

X$_i$ is independent variable including one dummy for marital status, one for illiterate and one for migration. Moreover, experience, experience square, household size, household size square and extra income are the continuous variables. α and β are estimated coefficients.

For the further depth of our analysis we aim to estimate the marginal effects. For this purpose first we took the derivatives for the probabilities in each category.

The marginal changes in the expected probability $\partial E[y \mid x]/ \partial x$ are equal to

$\partial E[y \mid x]/ \partial x = f(\beta'x) \beta$………………….. (2)

where *f* is the corresponding probability density function. For Probit model *f* is given by ϕ, the standard normal density function, where

$\phi(\beta'x) = \underline{1} exp (-\underline{1} \phi (\beta'x)^2)$……(3)

2π 2 III

Results and discussion

Probit estimates

For poverty analysis, Probit estimates (Table 1) were used to find the factors contributing towards poverty. The probability models provide an improvement over the decomposition exercise since they show the effect on poverty attributes to a change in a single characteristic of a household. Among the explanatory variables some were continuous variables but for some variables dummies were used. Dummies were for marital status, for illiterate and for migration. Furthermore, experience, experience square household size, household size square and extra income were the continuous variables contributing to poverty and the extent of poverty in various segments of the society. When the data for the poor household was examined, it indicated a fair amount of variation among the household, but there were many characteristics which are common among them. The classification according to the estimated coefficient of household size showed that household size was an important indicator; it showed a possibility for being in the category of poor household when the household size increased to a particular number of individuals then it started contributing toward being in the non poor category. Reason being, a household with many individuals the number of working individuals also increased.

This finally formed an inverse parabola. In this data set the co-efficient of our household size was negative that showed that our results were according to the theoretical background. The value of household size was 1.0611 which was not significant, although the incidence of poverty increased 65% with the increase in household size but the in the estimated model it was insignificant. That shows there is negative probability between poverty and household size and these findings are in line with the work of Malik and Sharif (2005). The increase in poverty with the increasing size of the household is also observed in Havinga *et al.* (1989).

Table 1: Estimated results of probit model

Dependent variable: Poverty	Observations : 150	
Variables	Coefficient	z-statistics
HHSIZE	-1.0611**	-2.77
HHSIZESQ	0.0591**	1.83
EDU	0.3322	0.73
EXP	0.1319**	1.72
EXPSQ	-0.0037*	-1.6
WORKIND	1.9751***	4.42
EXTRAINC	0.7097**	1.87
MIGRATION	0.2372	0.72
CONSTANT	5.3677**	2.41

Notes: *, **, *** shows 10 percent, 5 percent, and 1 percent level of significant

Household size square was positively effecting for being in the category of non-poor the reason is that when the household size increases at first it increases the poverty but when the household size reaches to a certain number every member of the house start doing some income generating activities so it will reduce the incidence of poverty. The results clearly indicate that square of the household size decreases the probability by 6% for being in the category of poor household. That showed there was a positive correlation between household size square and poverty. Malik (1996) also observed that the proportion of poor household in the total number of household rises up to some level and after that it started declining. Larger families suffer more than smaller ones from severe poverty and poverty itself is a factor behind larger families- a cause and effect relationship (Zeinelabdin, 1996). A household is more likely to be poor if it has a large number of individuals (Qureshi, 2001). The reason behind it is that the number of potential earner in the household increases.

Educational attainments influence the extent of poverty considerably. But the targeted population of this research was of grade I employs most of them were Mali, Naib Qasid, Ayi etc. Education didn't play any significant role in getting these jobs or we can say that it was not the job requirement of these occupations, but even than the results showed significant effect of education on poverty. The results clearly indicated that an Educational attainment did not have significant results in Probit model, but decreased the probability by 39% for being in the category of poor household, because if a person is educated than he can increase his income by doing any other income generating activity. Although education greatly influence the incidence of poverty in Havinga *et al.* (1989), Zeinelabdin (1996), Malik (1996), Qureshi (2001), Jamal (2005). But the designed study only taken into account the individuals of a particular group/ class that may not be representing the whole working/non working class.

Experience always increases the income which in turns decreases the poverty. There was a positive relation between experience and poverty. Inverse U-shaped pattern was observed in the case of experience. Seeing that, in the start of the career as the experience increased the earnings also increased, but as the time passed the situation became the other way round. Increase in income due to increase in experience last for a particular point in time. After that even though the experience increases but the income starts declining, this shows a negative relationship between incidence of poverty and experience square. In our analysis experience is positively related whereas experience square is negatively related to the probability of being non-poor household.

Working individuals always decrease the poverty because as the number of earner increases the income of household increases

which will affect the poverty negatively. The same expected results are drawn in our Probit model estimates. But Havinga *et al.* (1989) have the opposite results showing that the number of earners doesn't influence the extent of poverty. It is founded in Kazi and Sathar (1985) that when the household size keeps on increasing labour force participation rates would be greater and women and children as soon as they are old enough are pushed into working to supplement income. The number of earners had a significant and negative impact on the probability of being poor (Qureshi, 2001).

Our Probit model estimates showed that if a household is getting any extra income it helps to increase the probability of being in the non-poor category.

Migration is also one of the variables in poverty determination. When a household migrated from some other place it had to face many problems. That is why the incidence of poverty is more in them as compare to the ones who had never migrated. The results of our model showed that migration was insignificant.

Marginal effects
The marginal effects show the probability of being in some particular sector with given characteristics on average. Table 2 presented the marginal effects of the urban poverty. Almost all the estimated effects for the variables are significant at the conventional levels and have the expected signs as well.

Table 2: Marginal effects

Variable	dy/dx
HHSIZE	-0.1456
HHSIZESQ	0.0053
ILLIT*	0.0252
EXP	0.1192
EXPSQ	-0.00033
WORKIND	0.1785
EXTRAINC*	0.0509
MIGRATION*	0.0213

*dy/dx is for discrete change of dummy variables from 0 to1

On average, with an increase of one member in a household, the probability of that household to be considered as non-poor decreases 14 percentage points more. However it increases 0.5 percentage point if household size continues to increase on average.

On the other hand education doesn't have any significant effect, it only increases the probability of being non-poor, only 2 percentage point on average.

The estimated effects of experience showed that on average as a person had more experience his probability increased 11 percentage point of being non-poor. While looking at the marginal effects of working individuals the effect is 17 percentage points on average. The marginal effect on average, of extra income was 5 percentage point, whereas of migration is 2 percentage point.

Conclusion and recommendation

Regardless, of the efforts made for the poverty determination, it is still questionable that whether the researchers are able to get the true picture of the poverty in the country. The present study was also an effort to make some contribution for the vast literature available on poverty. The study was designed to estimate the incidence of poverty for the grade I employs of Rawalpindi city. Based on the judgment, that starvation and hunger are no longer common phenomenon in Pakistan. So poverty is viewed as a relative concept. Therefore, operationalize the concept of poverty by using poverty line. Determinants of poverty were explored by using Probit model, which is significant in the determination of the poverty status of the household. Following variables were used in the model; household size, education, experience, working individual, extra income and migration are the variables.

The researcher has given the following policy options on which action could be taken.
- There is need of proper planning and government should focus on town planning in

such a way that maximum people get the benefits of facilities available.

- Government should take steps for the betterment of people living below the poverty line with the help of micro financing.
- Government should help non government organization to identify households living below the poverty line.
- People should given incentives with less household size.

References

Blaxall, J. (2000). *Governance and poverty. paper presented at the joint workshop on poverty reduction strategies in Mongolia*, The World Bank, Ulan Bator, Mongolia.

Eid, U. (2000). Good governance for poverty reduction. Paper presented at the Asian development bank seminar on the *new social policy and poverty agenda for Asia and the pacific*, Chiang Mai, Thailand.

Gupta, S., Hamid D., & Rosa Alonso-Terne (1998). *Does corruption affect income inequality and poverty?* IMF working paper No. 98/76, May, International monetary fund, Washington, D.C.

Havinga, I. C., F. W. Hannappel., A. S. Louter and W. A. V. D. Andel (1989). Poverty in Pakistan 1984-1985. *PDR*, 28(4): 851-869.

Anonymous (2003). Human development report: *Millennium development goals, a compact among the nations to end human poverty*. N. Y. Oxford, Oxford university Press.

Jamal, H. (2005). In search of poverty predicators: The case of urban and rural Pakistan. *The Pakistan development review*, 44(1), 37-55.

Kazi, S., & Z. Sathar, A., (1985). Differences in household characteristics by income distribution in Pakistan. *Pakistan development review*, 24, 657- 667.

Maddala, G. S. (2001). *Introduction to Econometrics III*rd Edition John Wiley and sons.

Malik S. (1996). Determinants of rural poverty in Pakistan: A micro study. *The Pakistan development review,* 35(2), 171-187.

Malik, S., & Sharif, C. I. (2005). Urban Poverty in Pakistan: A case study of Multan city. *Journal of research (Humanities)*, 24, 119-140.

Qureshi S. K., & Arif, G. M. (2001). *Profile of poverty in Pakistan. MIMAP technical paper series, No. 5, Pakistan institute of development economics.*

Sachchidananda (1984). Reaching the rural poor. *Journal of social and economic studies new series*, 1(1), 79-92.

Sadiq, N. (1996). Changing places, population, development and urban future. UNFPA.

Woodhouse, Andrea (2001). Fighting corruption in KDP. The World Bank, Jakarta.

Wikipedia, (2006). Accessed at www.wikipedia.com

Zein-Elabdin, E. (1996). Development, Gender and the Environment: Theoretical or contextual Link. *Journal of economic issues,* 30(4), 929-946.