



Incidence, Profile and Economic Determinants of Poverty in Pakistan: HIES 2005-06

Ahmed Raza Cheema^{[a],*}; Maqbool H. Sial^[a]

^[a] Department of Economics, University of Sargodha, Sargodha, Pakistan.

*Corresponding author.

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Abstract

This study estimates the incidence, profile and economic determinants of poverty in Pakistan using the HIES data 2005-06. The results show that headcount ratio was about 23 percent in Pakistan. Poverty incidence was more than double in rural area as compared to urban area. Decomposition of poverty into socio-economic characteristics depicts that poverty is higher in those households whose heads are illiterate or have never attended school. It decreases as the level of education increases. It is positively related with the dependency ratio. It is higher in those households who have no access to basic facilities-electricity, gas and telephone. It is the highest in those households whose head's employment status, sector and occupation is sharecropper, construction and elementary, respectively. Household size is higher in poor families. The results of OLS multiple regression model depict that the poverty incidence is inversely related with age, education and owned land; while it is positively associated with household size. Households who receive foreign remittances or have sewing machine or live stock experience less poverty incidence than those who do not receive or have. At a policy level it is suggested that more investment and development should be focused in agro-based industries. Live stock development can give impetus to the poverty reduction derive. Free education for those who are unable to afford the expenses, with special attention to vocational education should be provided. Broad-based overseas employment strategy should be designed. Family planning should be promoted especially in poor families. Land reforms should be implemented in letter and spirit.

Key words: Poverty incidence; Dependency ratio; Education; Foreign remittances; Sewing machine;

Employment sector; Occupation; Employment status; Pakistan

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INTRODUCTION

Reducing poverty has been the main objective of policy makers, yet it has attracted more attention since the Millennium Development Goals (MDGs) have been adopted. For the reduction of poverty, its proper estimation is required. Though there are a lot of studies in Pakistan, yet they define poverty line in different ways and cover different time periods. Some studies (Naseem, 1973; Mujahid, 1978; Malik, 1988; Malik, 1991; Ali & Tahir, 1999; Cheema, 2001; Anwar & Qureshi, 2002; FBS., 2001 & 2003; Saboor, 2004; Jamal, 2005; Kakwani, 2006) employ *Food Energy Intake* (FEI) approach while the others (Gazdar *et al.*, 1994; Ali, 1995; Qureshi & Arif, 2001; World Bank, 2002, 2004 & 2006) use the Cost of Basic Needs (CBN) Approach as a yardstick to estimate poverty. Some studies (Qureshi & Arif, 2001; Anwer, 2006) estimate separate poverty lines for separate HIES data while the others (Nasim, 1973; Alauddine, 1975; Malik, 1991; FBS, 2001 & 2003; Anwar & Qureshi, 2002; World Bank., 2002, 2004 & 2006; Kakwani, 2006) adjust the poverty line by a price index. Of the studies which adjust the poverty line by price index, some studies (Malik, 1988; Kemal & Amjad, 1997; Ali & Tahir, 1999; FBS., 2001 & 2003; Anwar & Qureshi, 2002) adjust it by using CPI, but some studies (World Bank, 2002, 2004 & 2006; Kakwani, 2006; Jan *et al.*, 2008) does the same by TPI. These two price indices have their own merits and

demerits. No doubt the CPI is estimated for majority of items, yet it covers only urban areas but not rural areas. Whereas the TPI is concerned, though it is estimated for both rural and urban areas, but it covers only food and fuel items but not non-food and non-fuel items. Thus, there need an index (i.e. composite price index) to be used to inflate or deflate the poverty line that covers both rural and urban areas as well as majority of items. Thus this study uses the composite price index to adjust the poverty line over time. Not only its proper estimation is necessary, but it is also essential to know what the characteristics of the poor and what the determinants of poverty are.

As far as the determinants of poverty is concerned, there is common exercise to estimate the categorical regressions like Logit and Probit models to find the poverty determinants (Qureshi & Arif, 2001; Geda *et al.*, 2005; Moke *et al.*, 2007; Bhaumik *et al.*, 2006; Chaudhry, 2009; Hashmi, 2008; Sikander & Ahmed, 2008; Siddiqui, 2009; Achia *et al.*, 2010; Apata *et al.*, 2010). While estimating the categorical regressions, income or consumption of household is assumed to be not available. It is acted as if it is only known whether the household is poor or not, that is depicted by categorical variable that takes the value 0 if the household is not poor and 1 if the household is poor (World Bank., 2002). Categorical regressions have a problem that estimates are sensitive to specification error. Probit models have problem that the parameters are biased if the distribution is not normal. More generally the model does not use all information available because it collapses income or consumption into a binary variable. It does not imply that categorical regressions should never be used. Categorical regressions have better predictive power for classifying household as poor or not poor (World Bank., 2002). Thus the alternative is to use full information available for the dependent variable (welfare indicator) and to estimate a regression of log on the indicator (World Bank, 2002). Jamal (2005) estimated the OLS regression to find the determinants of poverty using HIES data 2001-02. Whereas Jan et al, 2008 did the same to find the poverty determinants in the agriculture sector in Pakistan using the HIES data for the same year. There is no study in Pakistan to find the poverty determinants of poverty using HIES data 2005-06 either employing categorical regressions or OLS regressions. Some recent examples of such studies using OLS regressions are Fagernäs and Wallace (2003), Alber and Collado (2004), Andesson *et al.* (2006), Baumik et al. (2006), Esanov (2006), Amendola and Vecchi (2008), and Akerele and Adewuyi (2011), Sakuhunni *et al.* (2011).

The structure of the paper is as follow: After introduction, section 2 provides data and methodology. The results are discussed in the section 3. Final section draws some conclusions and policy implications.

1. DATA AND METHODOLOGY

Data

This study utilizes the Household Income and Expenditure Survey (HIES) data for the year 2005-06 collected by Federal Bureau of Statistics (FBS) Pakistan. Sample size determined by FBS is representative at national and provincial level with urban/rural break up. The detail of households covered is reported in the Table 1.

Table 1
Household Covered by Region in Pakistan

Region	Sample size (Number of Households)		
	Rural	Urban	Overall
Punjab	3890	2788	6678
Sindh	2104	1664	3768
NWFP	1899	1049	2948
Baluchistan	1310	733	2043
Pakistan	9203	6234	15437

Source: Household Income and Expenditure Survey, 2005-06

Methodology

1.1 Poverty Line

First of all, this study estimates the poverty line by running a log-log ordinary least squares regression using the HIES data 1998-99 to make it consistent with that of Government of Pakistan. It is estimated as under:

$\ln(Y) = a + b \cdot \ln(X) + e$ where Y =per adult equivalent consumption expenditure per month (food + non food) and X = per adult equivalent calorie intake per day.

This study takes consumption expenditure as a welfare indicator and employs the calorie-based approach to estimate the poverty line using the Household Income and Expenditure Survey (HIES) data collected by Federal Bureau of Statistics (FBS) for the period 1998-99. Paasche Price Index (PPI) estimated at the primary sampling unit level is used to adjust the price differentials across the regions. Different households differ in size and composition. One household may include more adult male members and the other may include more female members while still the other household may include more children. Following FBS (2001) and World Bank (2002) this study uses equivalent scales which give weight 0.8 to individuals who are less than 18 years old and 1 to individuals who are equal to or greater than 18 years old to reach per adult equivalent so that the expenditures of households be divided by this per adult equivalent and in this way true welfare levels of individuals is ascertained. These scales were used because they seem very close to the reality.

Requirements of calories are not the same for

adults and children as well as males and females. This study adjusts the household size using the nutrient based equivalent scales (1985) developed by Planning Commission, Government of Pakistan (2002). This study estimates poverty line by running log-log ordinary least squares regression using 2350 calories per adult equivalent as suggested by the Planning Commission, Government of Pakistan. In order to get poverty line for the year 2005-06, the base poverty line was inflated by composite price index which is a combination of consumer price index (CPI) for non-food and non-fuel items and Tornqvist price index (TPI) for food and fuel items. The former index was estimated by Government of Pakistan, while the latter was estimated by this study in the following way.

$$\ln P_{10} = \sum_{k=1}^n \frac{w_{1k} + w_{0k}}{2} \ln \left(\frac{p_{1k}}{p_{0k}} \right)$$

where W_{1k} and w_{0k} are budget shares of items between the two periods and p_{1k} and p_{0k} are prices in two periods. This index was used in Bangladesh by World Bank (2001).

1.2 Poverty Indices

This study estimates three measures of poverty namely, headcount ratio, poverty gap and squared poverty

gap. These are given as: $P_\alpha = \frac{1}{N} \left[\left(\frac{Z - Y_i}{Z} \right)^\alpha \right]$ where

z = poverty line, Y_i = per adult equivalent expenditure less than poverty line and N = Population size. If $\alpha = 0$, P_α = Headcount ratio, if $\alpha = 1$, P_α = Poverty gap, and if $\alpha = 2$, then P_α = Squared poverty gap.

Each of them has its own merits and demerits. Thus poverty analysis should not be restricted to only one poverty measure. The headcount ratio is the most widely used poverty measure. It can provide information about the proportion of population lying below the poverty line. It is easy to calculate and sensitive to the number of poor. But it does not satisfy the axioms of monotonicity¹ and transfer². The other poverty index namely, poverty gap shows the average (of all households) of gaps between income or consumption expenditure (which one is taken as welfare indicator) of the poor and poverty line, expressed as a percentage of the poverty line. It reflects the poverty depth. But it is insensitive to the income distribution among the poor, thus it does not capture the poverty severity. The third poverty measure e.g., squared poverty gap satisfies the both axioms of monotonicity and transferability.

1.3 Determinants of Poverty

There is common exercise to estimate the categorical

regressions like logit and probit models to find the poverty determinants. While estimating the categorical regressions, income or consumption of household is assumed to be not available. It is acted as if it is only known whether the household is poor or not, that is depicted by categorical variable that takes the value 0 if the household is not poor and 1 if the household is poor (World Bank, 2002). Categorical regressions have a problem that estimates are sensitive to specification error. Probit models have problem that the parameters are biased if the distribution is not normal. More generally the model does not use all information available because it collapses income or consumption into a binary variable. It does not imply that categorical regressions should never be used. Categorical regressions have better predictive power for classifying household as poor or not poor (World Bank, 2002).

The alternative is to use full information available for the dependent variable (welfare indicator) and to estimate a regression of log on the indicator (World Bank, 2002). So this study uses linear regression model to find the poverty determinant using the household income and expenditure survey 2005-06.

Linear regressions of logarithm on per adult equivalent consumption expenditure were estimated on the following variables:

$$\ln(\exp) = \beta_0 + \beta_1 \ln(HS) + \beta_2 FR + \beta_3 Edu HH + \beta_4 Age HH + \beta_5 Age^2 HH + \beta_6 lstk + \beta_7 SM + \beta_8 Land + \beta_9 Land^2 + e$$

$$H_0: \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = 0$$

$$H_1: \text{At least one of betas} \neq 0$$

Where HS stands for household size; FR stands for foreign remittances; EDUHH stands for Education level of head of household; AgeHH stands for age of head of household; Age² HH stands for age squared of head of household; lstk stands for live stock; SM stands for Sewing machine.

2. RESULTS AND DISCUSSION

2.1 Poverty Estimates

An important and major step in the poverty analysis is the estimation of the limit, shown in terms of the welfare indicator, beyond which the persons are to be regarded as poor. Poverty line means the average consumption expenditure essential for meeting the basic needs in terms of every methodology whether it is cost of basic needs or calorie based approach. Its role is very important in making comparisons, thus achieving the major goal of the analysis of poverty. Absolute poverty line is in fact, monetary amount adjusted for inflation and differences in

¹ Monotonicity means that poverty remains unchanged when the welfare of the poor person changes if he or she still remains under the poverty line.

² Transferability implies that poverty remains constant when the income of the poor is transferred to other poor, relatively better off, but he or she yet remains under the poverty line.

regional prices. It is called absolute because it is constant over time and across regions (FBS, 2001). The poverty line of Rs. 669 was estimated which is very close to that (i.e. Rs. 670) estimated by government of Pakistan for the year 1998-99. By inflating that poverty line by the composite price index estimated by this study, the poverty line of Rs. 953.63 for the year 2005-06 is derived which is higher than that (i.e., Rs. 944.47) was estimated by government of Pakistan using consumer price index. By employing the former poverty line, poverty estimates for all of the three measures are obtained which are given in the Table 2.1.

Table 2.1
Poverty Estimates Along with Standard Error and Confidence Interval in Pakistan in 2005-06

Poverty indices by region	Estimates (%)	Standard error	95 % Confidence interval	
			Lower limit	Upper limit
Headcount ratio				
Pakistan	23.19*	.76	21.70	24.69
Rural	27.95	1.04	25.90	29.99
Urban	13.81	.82	12.21	15.42
DPE	-14.14	1.26	-16.60	-11.67
Poverty gap				
Pakistan	4.14	0.23	3.69	4.59
Rural	5.13	0.33	4.49	5.78
Urban	2.18	0.16	1.87	2.49
DPE	-2.95	0.35	-3.64	-2.26
Squared poverty gap				
Pakistan	1.14	0.09	0.95	1.32
Rural	1.43	0.14	1.17	1.70
Urban	0.55	0.05	0.45	0.64
DPE	-0.89	0.14	-1.17	-0.61

DPE stands for difference in poverty estimates between urban and rural area

Source: Author's own calculations

*All poverty estimates are statistically significant at the 95 % confidence level

The Table 2.1 shows that headcount ratio is about 23% in Pakistan which is about 1 % higher than the headcount ratio (i.e., 22.19%) estimated by Government of Pakistan and it is statistically significant at the 95% confidence level. It is about double (28%) in rural areas than that (14%) in urban areas and it is statistically significant at the 95% confidence level. The poverty gap and squared poverty gap (i.e., 4.14 and 1.14) are also higher than those estimated by Government of Pakistan (i.e., 3.96 and 1.08). These are also higher in rural areas as compared to urban areas and these are also statistically significant at the 95 % confidence level.

2.2 Poverty Profile

It is useful to disaggregate the poverty headcount ratio by socio-economic characteristics of household and household head. The incidence of poverty by educational attainment and literacy of household head, dependency ratio and access to electricity, gas and telephone is provided in the Table 2.2 while the incidence of poverty by employment status, occupation and industry employment of household head is presented in the Table 2.3.

Table 2.2
Poverty Incidence by Educational Level, Literacy of Head of Household, Ratio of Dependency and Access to Amenities

	Rural %	Urban%	Pakistan%
Educational attainment			
Never attended	34.53	26.09	32.63
Primary	26.09	15.25	22.61
Secondary	17.59	7.72	13.23
Higher classes	9.11	2.86	5.24
Overall	27.96	13.82	23.19
literacy			
literate	19.08	8.12	14.19
Illiterate	34.77	26.32	32.92
Overall	27.96	13.80	23.19
Dependency ratio			
Ratio =1	5.37	2.12	4.54
1.0 < Ratio <=1.5	15.80	6.48	13.85
1.5 < Ratio <=2.0	24.69	7.90	19.96
2.0 < Ratio <=3.0	26.55	12.09	21.80
Ratio >3.0	31.86	16.26	26.20
Access to amenities			
Electricity	Yes	23.67	13.30
	No	46.00	37.96
	Overall	27.95	13.81
Gas	Yes	18.84	9.23
	No	28.52	24.71
	Overall	27.95	13.81
Telephone	Yes	12.87	4.37
	No	30.69	19.91
	Overall	27.95	13.81

*Author's own calculation

2.2.1 Poverty Incidence by Attained Level of Education of Household Head

Education plays an imminent part in lowering the incidence of poverty. There is negative relationship between poverty incidence and educational level of head of household. The higher the level of education, the lower the incidence of poverty is and the lower the education level, the higher the poverty incidence was. It is evident from the Figure 2.1:

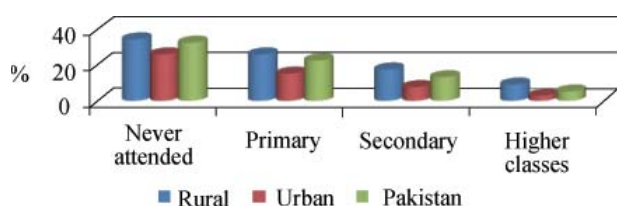


Figure 2.1
Incidence of Poverty by Educational Attainment of Head of Household in Pakistan, 2005-06

The figure depicts that poverty incidence is the highest in those households whose head have no education equal to about 33 percent (see Table 2.2). Households whose heads have passed primary have relatively less incidence of poverty than those households whose heads have never attended school equal to around 23 percent (see Table 2.1). Households whose heads have passed matriculation examination have relatively less poverty than those households whose heads are primary passed. Households whose heads have attained higher education (e.g., higher than 10 classes) have around four times less poverty than those household who have never attended the school. The figure also shows that households with same education level who are living in urban areas have lower poverty than those households who are living in rural areas.

2.2.2 Poverty Incidence by Literacy of Household Head

Literate and illiterate are not equal. Households with literate heads have relatively less poverty than households with illiterate head. It is evident from the Figure 2.2.

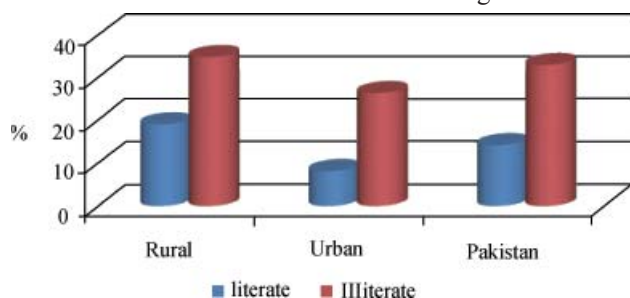


Figure 2.2
Incidence of Poverty by Literacy of Head of Household in Pakistan, 2005-06

The Figure 2.2 shows that households whose head are illiterate have higher poverty than those households whose heads are literate. Poverty in households with illiterate head is about two times of the poverty incidence among households whose head is literate (see table 3.2). It is also true in rural and urban areas. Households with illiterate head have around two times in rural and about three times in urban area more poverty than those households whose heads are literate.

2.2.3 Incidence of Poverty by Ratio of Dependency

Lower ratio of dependency plays an important role in reducing poverty. Dependency ratio is a ratio of household size to earners.

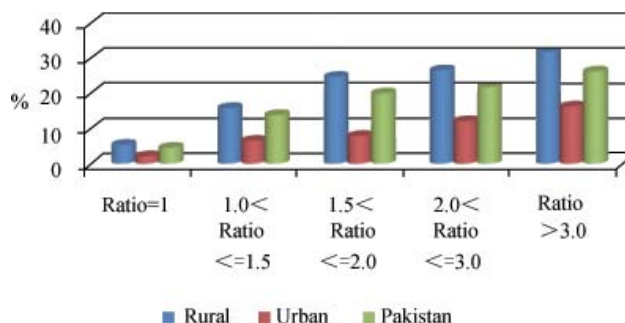


Figure 2.3
Incidence of Poverty by Dependency Ratio in Pakistan, 2005-06

The Figure 2.3 depicts that there is a positive relationship between incidence of poverty and dependency ratio. As the dependency ratio increases, poverty incidence also increases. This holds true in rural as well as in urban areas. When the ratio of dependency is 1, the poverty incidence is the lowest about 5 percent (see Table 2.2). It is the highest around 26 percent, when the ratio was greater than or equal to 3. It can also be concluded that poverty incidence is negatively related with number of earners.

2.2.4 Incidence of Poverty by Access to Electricity, Gas and Telephone

Electricity, gas and telephone also play an important role in reducing poverty. Incidence of poverty is higher in those household that do not have connection of electricity, gas and telephone than those households that have. It is equally true in rural, urban and overall Pakistan (see Figure 2.4). The incidence of poverty in households that have no connection of electricity and gas is more than double than those households which have (see Table 5.5), whereas the households that have not telephone connections have poverty incidence more than three times than the households that have (see Table 2.2)

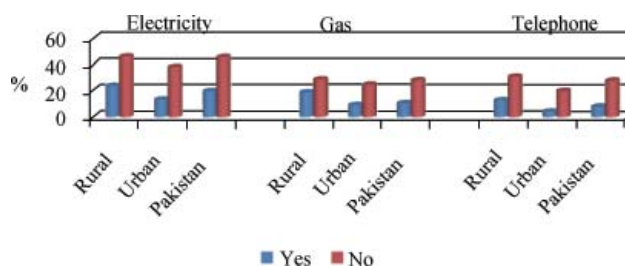


Figure 2.4
Incidence of Poverty by Basic Facility of Housing in Pakistan, 2005-06

2.2.5 Poverty Incidence by Employment Status, Occupation and Industry Employment of Household Head

Households can fall into or escape from poverty depending on earnings from employment. It is therefore, essential to find the relationship between poverty incidence and employment status of the household head. Further it is also useful to find the relationship between incidence of poverty and occupation as well as employment sector of the household head. The Table 2.3 shows the headcount ratio by employment status, occupation and employment sector of household head.

Table 2.3
Poverty Incidence by Employment Status Occupation and Industry Employment of Household Head

Employment status	Pakistan
Employer	14.56
Self employed	18.76
Paid employed	26.37
Unpaid family worker	22.25
Owner cultivator	17.89
Share cropper	40.63
Contract cultivator	17.88
Live stock only	27.93
Not economically active	11.50
Other	25.73
Overall	23.19
Employment sector	Pakistan
Agri. livestock & hunt	27.14
Manufacturing	17.81
Construction	41.96
Whole sale & retail trade	17.69
Transport & storage	21.42
Community, social services	17.16
Other	25.23
Overall	23.19
Occupation	Pakistan
Legis.& senior official	3.67
Professionals	9.93
Technicians	9.02
Clerks	8.57
Service workers	18.68
Skilled agricultural workers	23.53
Craft etc. workers	20.60
Plant & machine operators	18.61
Elementary. occupations	37.81
Overall	23.19

*Author's own calculation

Table 2.3 depicts that the poverty incidence is the highest equal to 41 percent in the sharecropper. It is also very clear from the figure 5.11. Livestock stands second with respect to incidence of poverty with about 28 percent. Poverty incidence is 27 percent among Paid Employee. It is about 19 percent in self employed, about 18 percent among contract and owner cultivator and 15 percent among employer. Households whose head is

not economically active have lowest about 11 percent incidence of poverty (see Figure 2.5). Such categories of households consist of pensioners and receive income from property such as landowners. Households who get remittances were also included in this category.

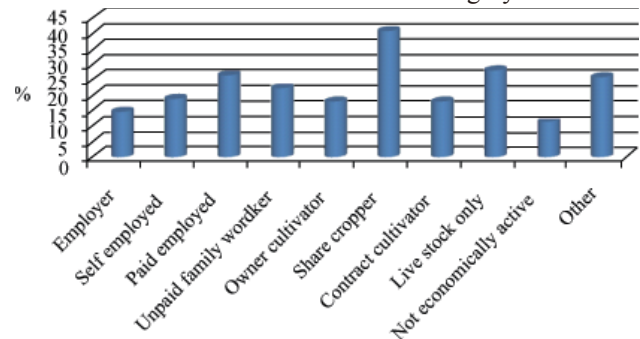


Figure 2.5
Incidence of Poverty by Employment Status of Household Head in Pakistan, 2005-06

Poverty incidence by occupation of household head is given in Figure 2.6.

The figure depicts that the poverty incidence is the highest about 38 percent in those households whose head's occupation is elementary. It can be inferred that main habitat of poor is the elementary occupation. After elementary occupation, it is higher around 24 percent in agriculture skilled workers. It is around 21 percent and 19 percent in craft etc. workers and service workers respectively. It is the lowest in legislative and senior officials about 4 percent.

The Figure 2.7 shows that the poverty incidence is the highest about 42 percent in those households where employment sector of the household head is construction. It can be inferred that construction sector is the main habitat of the poor. The incidence of poverty is 27 percent in those households whose heads' employment sector is agriculture, livestock and hunting sector. It is the lowest around 17 % in those households where household heads' employment sector is community and social services. Proportion of population below the poverty line is almost the same (about 18 %) in households where household heads' employment sector is manufacturing and whole sale & retail trade.

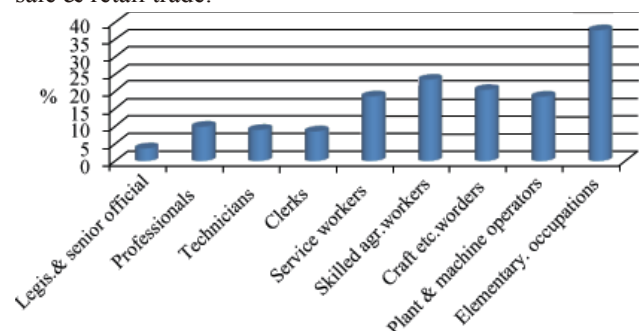


Table 2.6
Incidence of Poverty by Occupation of Household Head in Pakistan, 2005-06

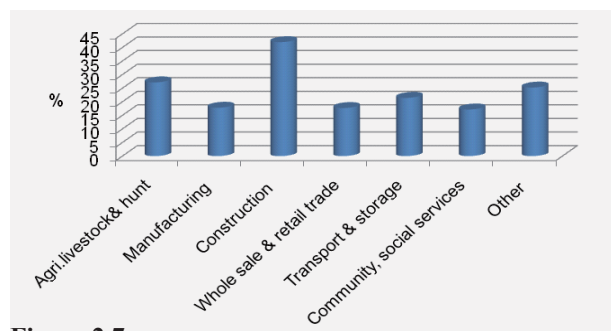


Figure 2.7
Incidence of Poverty by Employment Sector of Household Head in Pakistan, 2005-06

2.2.6 Incidence of Poverty by Size of Household and Size of Household by Deciles

Household size is an important factor to affect poverty. Thus, it is instructive to find the relationship between size of household and poverty incidence. It is also essential to know whether the size of household is higher in poor or in rich families. The headcount ratio by size of household and the latter by deciles are given in the Table 2.4.

Table 2.4
Incidence of Poverty by Household Size and Household Size by Deciles

Household size	Poverty incidence in Pakistan	Deciles	Size of household in Pakistan
2-persons	1.45	1-decile	9.19
3-persons	4.03	2-decile	8.54
4-persons	6.55	3-decile	7.99
5-persons	9.48	4-decile	7.63
6-persons	14.80	5-decile	7.31
7-persons	20.58	6-decile	6.96
8-persons	25.43	7-decile	6.65
9-persons	27.99	8-decile	6.06
>=10-persons	36.48	9-decile	5.67
Overall	23.19	10-decile	4.81

*Author's own calculation

There is very strong positive relationship between size of household and poverty incidence. The larger the size of household, the higher is the incidence of poverty and vice versa. It is the highest about 36 % in households having 10 or more than 10 persons and it is the lowest almost 1.45 % in households consisting of 2 persons (see Table 2.4).

The incidence of poverty rises monotonically as the size of household increases (see the Figure 2.8).

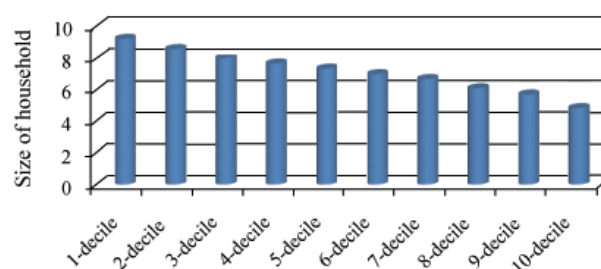


Figure 2.8
Incidence of Poverty by Employment Sector of Household Head in Pakistan, 2005-06

As expected, poor households have larger size of household as compared to rich ones. The size of household is about 9 persons in the first deciles, while it is about 5 persons in the tenth deciles (see Table 2.4). The above Figure 2.8 shows that household size gets smaller and smaller with richer and richer deciles.

3. DETERMINANTS OF POVERTY

Multiple ordinary least square (OLS) regressions of some following variables on log of per adult equivalent expenditure were estimated to find the determinants of poverty using the currently available household income and expenditure survey data, 2005-06. Per adult equivalent consumption expenditure is expected to be negatively related with household size and positively related with educational level of household head. Per adult equivalent consumption expenditure was also expected to increase with the household head age and land owned by him up to a limit, then it tends to decrease e.g. inverted u-shape. Foreign remittances dummy is equal to 1 if the household receives them and 0 if the household does not receive. Live stock dummy is equal to 1 if the household has otherwise 0. Sewing machine dummy is equal to one if the household has it otherwise 0. The results are presented in the Table 2.5.

Table 2.5
Determinants of Poverty in Rural and Urban Areas of Pakistan Using ‘Log of Expenditure’ as Dependent Variable

Variables	Pakistan		Urban area		Rural area	
	Coefficients	t-value	coefficients	t-value	Coefficients	t-value
Constant	7.370509	166.46	7.472682	78.79	7.472874	160.25*
Log Household size	-.4938202	-57.05	-.5576512	-39.40	-.4521787	-42.11
Foreign remittances	.2720192	15.28	.3158749	8.95	.2785892	15.01
Educational level of household head	.0411221	49.03	.0457777	36.37	.0263607	26.53
Age of head of household	.0185769	10.14	.0220677	5.66	.0097197	5.18
Age squared of head of household	-.0001332	-7.30	-.0001492	-3.85	-.0000672	-3.57
Live stock	.0418369	4.85	.0293868	1.12	.1395573	14.83
Sewing machine	.1337562	15.70	.0990337	6.39	.1355524	14.39
Land Ownership	.008706	9.25	.0132824	5.02	.0103012	10.45
Land squared	-.0000177	-5.46	-.0000492	-5.23	-.0000211	-6.40
F- ratio	F(9, 15427) = 742.49		F(9, 6224) = 408.21		F(9, 9193) = 336.27	
Significance level of F-ratio	Prob > F = 0.0000		Prob > F = 0.0000		Prob > F = 0.0000	
R ² =	0.4532		0.4938		0.4074	

T-statistics are based on robust standard error after correcting for heteroscedasticity

Source: Author's own calculations

*All coefficients are statistically significant at the 1 % level of significance in all regressions as measured by a standard t-test except for the live stock variable in urban area. The joint hypothesis that all coefficients are zero is rejected, as estimated value of F-test is greater than the critical value at the 1% level of significance.

Table 2.5 shows that all the variables have expected relationships in urban, rural and in overall Pakistan. The size of household plays a significant role to affect the consumption expenditure. Per adult equivalent expenditure is negatively related with the size of household. One percent increase in household size results in reduction in expenditure by 0.49% in Pakistan, 0.56% in urban area and 0.49% in rural area. In other words, poverty is directly associated with size of household. As the size of household increases, poverty also rises.

The education level of household head also has a significant part in the poverty reduction. The table shows that one more year of education increases the expenditure by 4% in Pakistan, 5% in urban and 3% in rural area. Poverty is negatively related with educational level. The association between expenditure and household head's age and age square as well as with land and land square is found inverted u-shape as was expected. Per adult equivalent expenditure is positively associated with the age of the household head. One extra year of age increases consumption expenditure by about 2% in urban and overall Pakistan and 1% in rural Pakistan. So poverty is inversely associated with the household head's age. Similar relationship between expenditure and land owned is found.

Foreign remittances also have significant role in reducing poverty. The table depicts that the households receiving foreign remittances have 27% in Pakistan, 32% in urban and 28% in rural areas more expenditure than those who do not receive them. It can be concluded that poverty is negatively related with foreign remittances. Poverty decreases with the rise in foreign remittance with the household.

Live stock also plays a significant role in decreasing poverty especially in rural area. Households with live stock have 4 percents in Pakistan and 14 percents in rural

area more consumption expenditure than those who do not have. The role of live stock in decreasing poverty is not statistically significant in urban area. Sewing machine plays imminent role in decreasing poverty especially in rural area in Pakistan. The households having this may save money by sewing their own clothes and even earn money by sewing clothes of other people. Households with sewing machine have 13 percents in overall Pakistan, 9 percents in urban area and 14 percents in rural area more expenditure than those who do not have.

CONCLUSION AND POLICY IMPLICATIONS

Incidence of poverty is about 23% in Pakistan. It was more than double in rural area than that in urban area. The results of poverty profile show that headcount ratio is higher in those household whose head have never attended school. It is negatively related with the level of education. Households whose head are illiterate, have more poverty incidence than those whose heads are literate. Incidence of poverty is positively related with the dependency ratio. Households who have no access to basic facilities-electricity, gas and telephone have more poverty than those who have. It is highest in those households whose head's employment status, sector and occupation is sharecropper, construction and elementary, respectively. Household size is higher in poor families. The results of OLS multiple regression model depict that the poverty incidence is inversely related with age, education and owned land; while it is positively associated with household size. Households who receive foreign remittances or have sewing machine or live stock experience less poverty incidence than those who do not receive or have.

Because the rural areas experiences more severely poverty, so more investment and development should be focused in agro-based industries. Live stock serves as social security for the chronically poor households, Live stock development can give impetus to the poverty reduction derive. Public works programs should be initiated, particularly in rural areas to provide social protection to the poor. Effective safety nets for the poor should be set up and developed. Education is very important factor for the reduction of poverty. Free education for those who are unable to afford the expenses, with special attention to vocational education should be provided. Illiteracy should be reduced. Broad-based overseas employment strategy should be designed, so that foreign remittances could be increased. It would have dual effect; in one place it will improve balance of payment and on the other place it will result in reduction in poverty and inequality. For the reduction of size of household, family planning should be promoted especially in poor families. It has been found that household size gets smaller and smaller as the household gets richer and richer. Land also play important role to reduce poverty. Thus land reforms should be implemented in letter and spirit.

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