POVERTY IN PAKISTAN: TRENDS AND ISSUES

Muhammad Ashfaq, Waqar A. Jehangir, Intizar Hussain and Muhammad Mudasser[1]

Abstract

The phenomenon of poverty is receiving the increasing attention of policy makers and institutions with an attempt to improve the living standards of the third world countries. Pakistan is no exemption to that. As the majority of third world population is concentrated in rural areas and dependent on agriculture sector for income, it becomes of special interest to dig into the root causes of poverty in these areas. A number of studies have shown that poverty is concentrated in the rural areas of Pakistan. However, a wide variation in estimates of poverty was experienced owing to various approaches and different poverty lines used by the researchers in estimating the incidence, depth, and severity of poverty. Recently, the Government of Pakistan addressed this issue by circulating the official poverty line. Poverty being a complex phenomenon, its determinants vary from time to time and across different areas. However, most of the studies indicate that poverty in Pakistan is concentrated in rural areas of Pakistan. Applying dollar a day poverty line shows that the poverty in Pakistan is higher as compared with many other Asian countries.

Introduction

The latest poverty scenario in Pakistan paints a very gloomy picture. According to the Government of Pakistan (2002), about 28 percent of total population is currently living below the poverty line. The incidence of poverty is higher in rural areas (32 percent) as compared to urban areas (19 percent). The quality of life of the poorer segments of the society continues to deteriorate. Not only income poverty has been on the rise in the country but other dimensions of poverty also present an equally dismal picture. Strong rural-urban difference in the context of poverty is observed, with households living in the rural areas likely to be poorer than those living in urban areas. A comparison of incidence of poverty across irrigated regions of the country leads to some interesting observations.

Around 70 percent of the population is residing in rural areas of Pakistan. Majority of these directly or indirectly depend on agriculture for generating the household incomes. A significant proportion of rural population is engaged in raising crops for income to support the current livelihood standards. The landowners are the main beneficiaries while landless also derive income from providing different services to them. The increase in income of land owners through improved productivity and profitability shows trickle down effect on the betterment on the landless rural population while a failure on the part of landlord also affect the well beings of poor. Moreover, continuous

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[1]Assistant Professor, University of Agriculture, Faisalabad, Senior Agricultural Economist, IWMI-Pakistan, Senior Economist, IWMI-HQ, Colombo, Sri Lanka, and Agricultural Economist, IWMI-Pakistan, respectively.

fragmentation of land into small farms has decreased the efficiency and productivity of the farms, which has put tremendous pressure on the ever-increasing population of the rural areas. In addition to land, adequate and reliable supply of irrigation water is another constraint, which is inhibiting the increase in productivity to meet the potential productivity levels. As the productivity of these vital resources fluctuates, so is the income and risk of being poor vary from time to time and across different areas.

The attempts to analyze the incidence of poverty and finding its determinants are made from time to time and by using various yardsticks based on different sets of assumptions. However, most of the studies indicate that poverty in Pakistan is concentrated in rural areas of Pakistan.

The current paper is divided into five parts. In part II, literature on poverty is reviewed with reference to Pakistan and Asia. In part III, various definitions of poverty, limitations, and data requirements are discussed. Conclusions are drawn in the last part of the paper.

Poverty in Literature

A number of studies have been conducted assessing poverty situation and its dimensions in Pakistan regarding poverty lines, inequality, absolute versus relative poverty, unemployment, and different policies, social welfare programs, institutional reforms, gender, and demographic factors, irrigation performance and IMT, during the last three decades. A brief review of some of the important studies is presented below.

A head count rural poverty (32%) was estimated by using the poverty line of 2550 calories intake per day per adult equivalent by Irfan and Amjad (1984). They translated the detailed information available in the Micro Nutrient Survey of 1977 to determine an income-based poverty line at 1979 prices of Rs. 109 per capita per month (poor), and then used this line and Rs. 95 per capita per month (very poor) to obtain the head count measure for the year 1979. The study showed that rural very poor increased from 32 percent in 1963/64 to 43 percent in 1969/70 and declined to 29 percent in 1979.

A relative poverty line based on per capita expenditure of lowest 10 percent of the population was used by Akhtar (1988) on the basis of HIES data for the year 1979. The results showed that the incidence of poverty in rural areas was significantly higher than in urban areas. Moreover, it was found that poverty in Pakistan was concentrated in rural areas. The computed poverty line employed for analyzing the poverty situation was Rs. 948 and Rs. 1260 per year for rural and urban areas, respectively. The urban poverty line was set 33 percent higher than the rural one.

A decline in poverty was estimated in rural and urban areas by Ahmad and Allison (1990). They employed poverty line of Rs. 100 and Rs. 110 per capita expenditure on monthly basis, respectively for rural and urban areas. The poverty line was based on 2550 calories intake per adult equivalent basis assuming 10 percent higher estimate of poverty line for the urban areas. The study concluded that during 1979-1984/85, rural poverty declined from 20 to 25 percent while urban poverty declined from 20 to 16 percent indicating higher incidence of poverty in the rural areas as compared to the urban areas.

Based on basic needs approach, an increase in percentage of poor from 47 percent in 1992-93 to 50 percent in 1995-96 was estimated for Pakistan by Ahmad (1998). In

Punjab province, the percentage of poor consistently rose from 43 to 44 and then to about 50 percent in the years of analysis. The well known indices of poverty like the head count ratio, poverty gaps and FGT were also calculated by using data from the HIES and PIHS of 1992-93, 1993-94 and 1995-96. When basic needs poverty line was used, the percentage of poor increased from 47 percent in 1992-93 to 50 percent in 1995-96. An increasing trend in head count poverty was also found in Baluchistan and NWFP. Sindh was the only province where the poverty situation had improved slightly. It was concluded that poverty situation in the recent past had worsened and intensity increased. The author also analyzed the determinants of poverty by using the Logit model. The results on determinants of poverty identified various groups, which were most vulnerable and could be used as effective tools for policy makers. The results of model showed that dependency ratios, household size and level of education had strong correlation with poverty. A high incidence of poverty was observed for households whose heads were engaged in agriculture and related activities as well as in services and transport sectors. It was also found that households living in the rural areas of Pakistan were likely to be poorer than those in urban areas. The author observed that poverty reduction programs were needed to be targeted oriented.

A head count poverty of around 37, 40 and 33 percent was estimated by Qureshi and Arif (1999) for Pakistan, rural, and urban areas, respectively. The basic need approach was used in estimating poverty line using HIES data and estimates were calculated for the year 1998-99. A poverty line of Rs. 705.96 per month was used for assessing incidence of poverty in Pakistan while the corresponding figures for rural and urban areas of Pakistan were Rs. 676.31 and Rs. 898.94 per month, respectively.

A rise in incidence of poverty, both in rural and urban areas of Pakistan, was estimated by Arif et al. (2001). The issues surrounding non-farm employment and rural poverty in Pakistan were examined. It was found that poverty was relatively higher in rural areas and widespread across all groups of population. The wageworkers in the non-farm sector were better off than the agricultural laborers. Services and trade sectors were hindrance in reducing rural poverty. It was found that poor were concentrated in construction, transport and manufacturing sectors. The study was based on primary data set of 1996-97, Household Integrated Economic Survey (HIES). The non-farm category included wageworker whoever all self-employed people but not the self-employed in agriculture sector. The basic needs approach was used for poverty line determination. The multivariate analysis showed that age, education, sex and household size were the major determinants of being employed in the rural non-farm sector. Authors suggested that dynamic labor in agriculture combined with a modernizing non-agriculture sector could generate employment and income with resulting growth and elimination of rural poverty.

Historical Trend of Poverty in Pakistan

Table 1 shows the synthesis of various selective studies conducted in Pakistan, assessing the incidence of poverty using various approaches and related to various time periods. A variety of poverty lines were used in order to estimate the prevalent incidence of poverty in rural and urban areas as well as for Pakistan in general. Though majority of the researchers used HIES data sets to reach these estimate of poverty, however, different approaches led to different poverty line estimates, which in turn yielded different estimates of poverty.

Table1:   Synthesis of selective studies on poverty situation in Pakistan.

Author	Study Year	Areas	Head Count Poverty
Irfan and Amjad	1984	Rural	41
		Urban	29
Akhter	1988	Rural	12
		Urban	20
Ahmad	1993	Pakistan	42
		Rural	24
		Urban	47
Gazdar and Zaidi	1994	Pakistan	34
		Rural	34
		Urban	31
Malik	1994	Pakistan	17
		Rural	21
		Urban	10
Jaffri and Khatak	1995	Pakistan	41
		Rural	22
		Urban	56
Government of Pakistan	2000	Rural	34.7
		Urban	20.9
Arif et al.	2001	Rural	39.8
		Urban	31.7

Poverty in Asia

Table 2 shows the comparison of poverty situation in selected Asian countries. The highest head count poverty was found in India (44.20 percent) while the lowest was envisaged in Thailand (<2 percent). The incidence of poverty was third highest in Pakistan (31 percent), which was slightly higher than in Bangladesh (29 percent). Depth of poverty (poverty Gap) was highest in India while it was lowest in Thailand (less than 0.5 percent). It is clear from Figure 1 that per capita income of China and Sri Lanka was almost double than in Pakistan but poverty statistics indicated higher incidence and depth of poverty prevailing in China than in Sri Lanka. Moreover, India had slightly higher per capita income (460 US$) while Bangladesh had slightly lower per capita income (US $ 370) as compared to Pakistan (US $ 420), though statistics show higher poverty in India and lower poverty in Bangladesh than in Pakistan.

Table 3 shows the estimated Gini-coefficient reflecting the inequality in income or expenditure prevailing in selected Asian countries. Highest level of inequality was envisaged in Thailand having Gini-coefficient of 0.414 while the lowest was found in Pakistan (0.312). It was found that in India and Bangladesh, relatively higher inequality in distribution of income exists as compared to Pakistan. It was also found that the lowest 10 percent of the population holds around 4.1 percent of the income in Pakistan, which was the highest among all the selected countries whereas the lowest figure was found in China (2.4 percent). On the contrary, the richest 10 percent of the population holds 33.5 percent of the income in India while the corresponding lowest estimate was for Indonesia (26.7 percent). The richest 10 percent of the population in Pakistan holds around 27.6 percent of the annual income.

Table 2: Poverty situation in selected Asian countries (Population below US $1 a day).

Country	Year	Head Count Poverty	Poverty Gap
Bangladesh	1995-96	29.07	5.90
China	1998	18.80	4.40
India	1997	44.20	12.00
Indonesia	1999	12.90	1.90
Pakistan	1996	31.00	6.20
Sri Lanka	1995	6.60	1.00
Thailand	1998	<2.00	<0.50
Nepal	1995	37.70	9.70

Source: World Bank (2000)

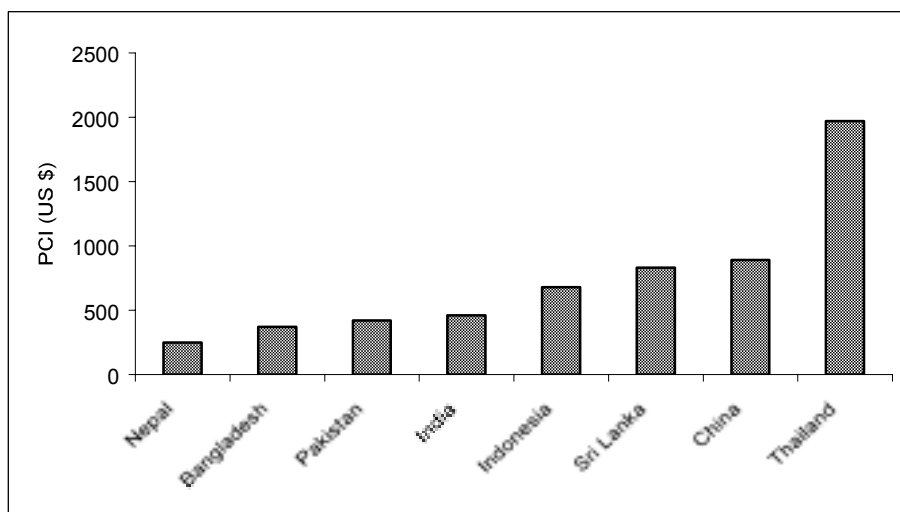*Figure 1: Per capita income of selected Asian countries in 2001.*

Table 3: Gini-coefficient and inequality in Asian countries.

Country	Year	Inequality Gini-coefficient	Percentage Share of Income or Consumption	
			Lowest 10% of Population	Highest 10% of Population
Bangladesh	1995-96	0.336	3.9	28.6
China	1998	0.403	2.4	30.4
India	1997	0.378	3.5	33.5
Indonesia	1999	0.317	4.0	26.7
Pakistan	1996-97	0.312	4.1	27.6
Sri Lanka	1995	0.344	3.5	28.0
Thailand	1998	0.414	2.8	32.4
Nepal	1995-96	0.367	3.2	29.8

Source: World Bank (2003)

Defining Poverty and Poverty Line

Over the past century, scholars and experts on poverty at the global level remained unable to define the term comprehensively and precisely. It is widely recognized that poverty is complex and multidimensional in nature.

Poverty line differentiates between poor and non-poor on the basis of minimum income or expenditures that are needed to fulfill required minimum calorie intake or to acquire minimum basket of basic needs. People whose income or expenditure is below the poverty line are assumed poor.

Some selective definitions of poverty, as available in the present literature, are summarized below:

On the Basis of Calorie Intake Approach
Ercelawn (1988) defined poverty line on the basis of per capita annual expenditure required to ensure the 2550 calories per day per adult equivalent. Using HIES survey data, a poverty line of Rs.1716 and Rs. 2592 per person for the year 1984/85, respectively, regarding rural and urban areas in current prices, was established.

Ahamd and Allison (1990) determined poverty line on the basis of total per capital expenditure per month of Rs. 100 and Rs. 110 in 1979 prices, which was required to ensure 2550 calorie intake per adult equivalent for rural and urban areas, respectively.

Planning and Development Division, Government of Pakistan (2002) defined poverty and poverty line on the basis of calorie intake per adult equivalent per day. Poor was defined as one who was unable to intake 2350 calories per adult equivalent per day. On the basis of this, a poverty line of Rs. 673.54 in 1998-99 prices was established.

On the Basis of Basic Needs Approach
Ahmad (1993) defined the poverty line on the basis of basic needs approach which included food, clothing, housing, health, education, transport, social interaction and recreational needs. The poverty lines were estimated as per capita expenditure of Rs. 300 and Rs. 419 per month at 1991/92 prices for rural and urban areas, respectively.

Jafri and Khattak (1995) estimated that monthly expenditure of Rs. 271 per person at current prices of 1990/91 was needed for meeting the basic needs (food, clothing, housing, health, education, transport, socialization and recreation) in rural areas.

Qureshi and Arif (1999) by using HIES survey data in 1998-99 prices on basic needs basis estimated a poverty line of Rs. 676.31 for rural areas of Pakistan. Subsequently, the estimated poverty lines for urban areas and Pakistan in general were Rs. 705.96 and Rs. 898.94, respectively.

Other Definitions (Relative Poverty Lines)
Akhter (1988) defined the poor as lower 10 percent of the population with lowest per capita expenditure on the basis of HIES survey data of 1979. A rural poverty line of Rs. 948 per person was established to differentiate between poor and non-poor while corresponding poverty line for urban areas was estimated to be Rs. 1260 per person.

Zaidi (1992) defined the relative poverty line for Pakistan as 75 percent of the national average expenditure. This poverty line was aimed at differentiation of those households

or individuals as poor, which were deprived of certain commodities or standard national consumption pattern prevalent in the society.

Monetary Measures of Poverty

The measurement of income poverty involves: 1) Specification of an indicator of well being such as income or expenditure; 2) Specification of an income level or threshold below which a person or household is considered poor – the poverty line; and 3) Construction of poverty measures. Foster-Greer-Thorbecke (FGT) class of measures is the most commonly used measure of poverty, which captures three aspects of poverty: incidence, depth/intensity and severity of poverty. These measures are Head Count Index, Poverty Gap Index and Squared Poverty Gap Index.

Head Count Index

Head Count Index is defined as the share or proportion of the population which is poor, or whose income is below the specified poverty line. This is a measure of incidence of poverty. Suppose in a population of size n, there are q number of poor people whose income y is less than the poverty line z, then the head count index can be defined as:

Head Count Index   HC = q/n

Poverty Gap Index

Poverty Gap Index is defined as the mean distance, separating the population from the poverty line. This can be interpreted as a measure of depth of poverty. Non-poor are given a distance of zero. This measure can be mathematically represented as follows:

Poverty Gap Index

$$PG = \frac{1}{n}\sum_{i=1}^{n}\frac{z - y_i}{z}$$

Where z is the poverty line, yi is the income of the individual i or household i, and the sum is taken only on those individuals who are considered poor (below poverty line).

The poverty gap can also be defined as the product of the income gap and the Head Count Index ratio, represented as the following:

PG = I*HC, where I is the income gap

Where $\quad I = \dfrac{Z - y_q}{Z}\quad$ and $\quad y_q = \dfrac{1}{q}\sum_{i=1}^{q} y_i\quad$ is the average income of the poor.

Squared Poverty Gap Index

Squared Poverty Gap Index is a measure of the severity of poverty. The poverty gap takes into account the distance separating the poor from the poverty line, while the squared poverty gap $[PG]^2$ takes into account the square of the distance. The squared poverty gap index gives more weight to the poor; by taking into account the inequality among the poor greater weights are given to larger gaps and the weights are simply the poverty gaps. It is represented as follows:

Squared Poverty Gap

$$(PG)^2 = \frac{1}{n} \sum_{i=1}^{n} \left(\frac{z - y_1}{z} \right)^2$$

Both Poverty Gap Index and the Squared Poverty Gap Index put more emphasis on those who are further away from the poverty line. The general formula for all three measures is given below, which depends on parameter α, which takes a value of zero for the Head Count Index, one for the Poverty Gap Index and two for the Squared Poverty Gap Index

$$P(\alpha) = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z - y_1}{z} \right)^{\alpha}$$

The above measures can be analyzed for various socio-economic groups as well as for different geographic locations (e.g. within irrigation systems).

Sen Index
Sen (1976) proposed an index that sought to combine the effects of the number of poor, the depth of their poverty, and the distribution of poverty within the group. The index is given by:

$$P_s = P_o (1 - (1 - G^P) \frac{\mu^p}{z})$$

where P0 is the head count index, μp is the mean income (or expenditure) of the poor, and G P is the Gini-coefficient of inequality among the poor. The Gini-coefficient ranges from 0 (perfect equality) to 1 (perfect inequality), and is discussed further below in the context of measuring inequality. The Sen index can also be written as the average of the head count and poverty gap measures weighted by the Gini-coefficient of the poor, giving:

$$P_s = P_o G^P + P_1 (1 - G^P)$$

The Sen index has been widely discussed, and has the virtue of taking into account the income distribution among the poor. However, the index is almost never used outside the academic literature, perhaps because it lacks the intuitive appeal of some of the simpler measures of poverty, but also because it cannot be used to decompose poverty into contributions from different subgroups.

The Sen-Shorrocks-Thon Index
Scientists have modified the Sen index and perhaps the most compelling version is the Sen-Shorrocks-Thon (SST) index.

It is defined as:

$$P_{SST} = P_O P_1^p (1 + G)^P$$

which is the product of the head count index, the poverty gap index (applied to the poor only), and a term with the Gini-coefficient of the poverty gap ratios. This Gini-coefficient typically is close to 1, indicating great inequality in the incidence of poverty gaps.

Other Measures

There are other additive poverty measures, which are distribution sensitive. For example, the first distribution sensitive poverty measure was proposed by Watts (1968), and takes the form:

$$W = \frac{1}{N} \sum_{i=1}^{N} \log \left(\frac{Z}{y_i} \right)$$

Following Atkinson (1987), one can characterize a general class of additive measures, encompassing W, the FGT class of measures, and some other measures (such as the second measure proposed by Clark, Hemming and Ulph 1981), as taking the following form:

$$P = \frac{1}{N} \sum_{i=1}^{N} P(Z, y_i)$$

where p(z, yi) is the individual poverty measure, taking the value zero for the non-poor, (yi>z) and some positive number for the poor, the value of which is a function of both the poverty line and the individual living standard, non-decreasing in the former and non-increasing in the latter.

On Choosing the Yardstick (Poverty Line)
In general, there are two types of poverty lines used for estimating poverty, relative poverty line and absolute poverty line. Relative poverty line could simply be established by assuming some cut-off point in the welfare distribution (income or expenditures) below which lies the poor. For instance, lowest 25 percent of the population may be characterized as poor households or individuals. Unfortunately, though it is the simplest way of establishing a poverty line, it has certain drawbacks that constraints its usefulness. Most important is that there always exists a lower 25 percent of the population, no matter how good the whole population may be from the welfare point of view. Thus, it becomes impossible to compare poverty over time and space. Additionally, the use of welfare level of lowest 25 percent is totally arbitrary. It is difficult, if not impossible, to defend the use of lowest 30 percent or so instead of 25 percent of the population.

Absolute poverty line is obviously linked with some specific welfare level such as minimum money required to meet the minimum basic needs of life. It makes the comparison possible over time and space, and is preferable to relative poverty line in the context of developing countries. For developing countries, it is of particular interest to compare poverty incidence and its various dimensions over space and time.

On Data Requirement
Measurement of poverty incidence and other indicators, though, ought to be measured with respect to some common welfare measure. However, in practice, poverty is estimated using income or expenditure as measure of well being. In this regard, though

same poverty line is assumed, however, results estimated could differ due to inherent problem of these measures of well being. As long as the income is concerned, it is highly susceptible to the problem of under-reporting, which would lead to high estimates of incidence of poverty. On the contrary, there is a problem of exaggerated expenditure reporting on the part of individuals and households.

Similarly, even taking the same welfare measure for estimating incidence of poverty, in different countries with different surveys, the welfare measures differ from each other. Thus, even using the same poverty line for two countries would yield quite different results while keeping other things same. Moreover, comparison over time and space also becomes difficult when definition of poverty and poverty line changes. Even for the same poverty line, use of primary and secondary data would yield different results. Thus, the use of primary or secondary data set is solely according to the reliability, which normally lacks in the official statistics of the developing countries.

Conclusions and Implications

- Over time, poverty incidence is fluctuating in Pakistan.
- Poverty is higher in rural areas as compared to urban areas.
- It is difficult to define poverty precisely. The researchers used various definitions of poverty over time.
- It is difficult to compare the estimates of poverty over time because various poverty lines have been used for estimating the figures.
- Different poverty lines used owe their variation from selection of the approach used i.e. basic need, calorie intake, relative poverty line, etc.
- For different approaches to estimate the incidence of poverty, data requirement differs.
- Variation in sources of data also leads to significant variation in the results of poverty incidence.
- Applying one dollar a day poverty line shows that poverty in Pakistan is higher as compared to many other Asian countries.
- A relative low Gini-coefficient estimate for Pakistan, as compared to other Asian countries, show relatively lower level of inequality in income/expenditure distribution.

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