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Prevalence of Rural Poverty in Sindh, Pakistan: Case of Tando Allahyar District

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Abstract:

In order to understand the situation of rural poverty in Sindh province of Pakistan, a descriptive research study has been conducted in the district of Tando Allahyar. Results reveal that rural local actors mostly engaged in traditional agriculture with illiteracy, poor-infrastructure and lack of basic amenities, which has created inequalities among them. It was hypothesized that the income is not equally distributed, so the Lorenz curve has been fitted which was estimated to be $y = 3.7725 - 0.1409x + 0.0097x^2$ *with sufficiently large R-square value of 0.99, where Gini coefficient was estimated to be 0.43. The value of Gini coefficient revealed that there was moderate disparity in distribution of income. From present research it is projected that efforts may be taken to increase literacy ratio in the region as well as the awareness regarding scientific agricultural practices, livestock and poultry keeping in order to fetch more income from those basic sources. Finally it is projected that efforts may be taken for the export of agricultural products, which will not only affect the livelihood of rural communities but also the country's economy.*

Key words: rural poverty, Sindh, Pakistan, Tando Allahyar District

Introduction

Poverty is a condition in which a person or community is deprived of, or lacks the essentials for a minimum standard of well-being and life (Haq, 2005). Since poverty is understood in many senses, these essentials may be material resources such as food, safe drinking water, and shelter, or they may be social resources such as access to information, education, health care, social status, political power, or the opportunity to develop meaningful connections with other people in society. Poverty may also be defined in relative terms. Therefore income disparities or wealth disparities are seen as an indicator of poverty and the condition of poverty is linked to questions of scarcity and distribution of resources and power (Mulyanto and Magsi 2014). Poverty is also a type of religious vow, a state that may be taken on voluntarily in keeping with practices of piety. Poverty has many dimentions; the poor has not only low incomes, but also lack of access to basic needs such as education, health, clean drinking water and proper sanitation. The latter undermines their capabilities, limits their opportunities to secure employment, results in their social exclusion and exposes them to exogenous shocks (GOP, 2014). Poverty is a state of multiple needs such as food, clothing, education, medical relief, job opportunity and security and political and social freedom, all of which are essential for meaningful existence (Sayed, 2005). FAO (2009) has disclosed some actualities that more than 80 percent of the world's population lives in countries where income differentials widening. The poorest 40 percent of the world's population account for only 5 percent of global income. On the other hand the richest 20 percent account for 75 percent of world income.

In Pakistan poverty has historically been higher in rural areas and lower in the cities. Out of the total 40 million living below the poverty line, 30 million live in rural areas. Poverty rose sharply in the rural areas in the 1990s, and the gap in

income between urban and rural areas of the country became more significant. This trend has been attributed to a disproportionate impact of economic events in the rural and urban areas. Rural poverty is a complex and multi dimensional phenomenon. It has many faces changing from place and across time, and was illustrated in many ways; either relative or absolute poverty; transient and chronic poverty. The issues of rural poverty and income inequality are difficult to comprehend without through examination of several interrelated aspects of changes in the agriculture sector. The recent analysis of large international and interregional data sets show that the structure of the agricultural growth is a major factor in explaining the bulk of rural poverty reduction. even though agriculture sector continues to play a central role in Pakistan's economy, which contributes more than 20 percent in national income (GOP, 2014). Besides that it is also a fact that Pakistan stood at sixth most populous countries of the world with growth rate of 2.05 percent and total fertility rate of 3.5 per woman(GOP, 2014). Therefore, present study is undertaken to frame universally acceptable threshold of poverty, to find out trend analysis of rural poverty and income inequality by employing axiomatic approach. In particular to assess the impact of various factors on poverty status of a household and to develop poverty equivalent growth rate (PEGR) for analyzing the trickle down impact of agricultural growth to the rural poor and to forecast the co-integrated trends of agricultural growth, rural poverty and income inequality in Pakistan particularly in Sindh province.

Methodological Consideration

The data

This empirical study was conducted to document the socio-economic conditions as well as to assess the role of agriculture in enhancing household income by using survey method.

Therefore, the name of the research was proposed to be Descriptive Survey Research. Thus multistage cluster sampling was applied to select a representative sample of households. At first stage, district Tando Allahyar has been selected which is comprised over 3 Talukas. At second stage 3 villages from each Taluka were selected and at final stage 10 respondents from each village were randomly selected. Thus 90 households were surveyed and interviewed through a well structured questionnaire and the data were analyzed after all.

Poverty measurement

The level of income to subsist in a society show poverty line measured. The cost of living and people's expectations were varies from place to place and from time to time, depending on people's expectations and amenities. Normally the measures of the total amount of income necessary to raise everyone whose income are below the poverty line. The total income short fall or Total Poverty Gap (TPG) of the poor is defined as;

$$TPG = \sum_{i=1}^{H} (y_p - y_i)$$

Where

TPG	=	Total poverty gap
H	=	No of the poor who fall below poverty line
yp	=	Poverty line
yi	=	Income of the poor

Poverty index was developed by Amartya Sen (Sen, 2005). It takes into account both the number of poor and the extent of their poverty. Sen defined the index as:

$$SI = \frac{P}{N} \times \frac{B - A}{A}$$

Where:

P = number of people below the poverty line

N = total number of people in society

B = poverty line income

A = average income of those people below the poverty line

Measurement of Inequality for Distribution of Income

Inequality can be measured by using Lorenz Curve and Gini Coefficient. Lorenz curve is defined as a graph depicting the variance of the size distribution of income from perfect equality. It is graphically measured by dividing the area between the perfect equality line and Lorenz Curve. The higher the value of the coefficient, the higher the inequality of income distribution and the lower it is the more equitable distribution of income. The Lorenz curve is a graphical representation of the cumulative distribution function of a probability distribution; it is a graph showing the proportion of the distribution assumed by the bottom y% of the values. It is often used to represent income distribution, where it shows for the bottom x% of households, what percentage y% of the total income they have. The percentage of households is plotted on the x-axis, the percentage of income on the y-axis. It can also be used to show distribution of assets. In such uses, some political doctrines (e.g. Socialism) consider it to represent social inequality.

Gini coefficient

Gini coefficient (see figure 1) is defined as an aggregate numerical measure of inequality ranging from zero (perfect equality) to one (perfect inequality). It is defined as a ratio with values between 0 and 1: the numerator is the area between the Lorenz curve of the distribution and the uniform (perfect) distribution line; the denominator is the area under the uniform distribution line. It was developed by the Italian statistician Corrado Gini and published in his 1912 paper "Variabilità e mutabilità" ("Variability and Mutability"). The Gini index is the Gini coefficient expressed as a percentage, and is equal to the Gini coefficient multiplied by 100. The Gini coefficient is equal to half of the relative mean difference. The Gini coefficient is often used as an income inequality metric.

Zero corresponds to perfect income equality i.e. everyone has the same income and 1 corresponds to perfect income inequality (i.e. one person has all the income, while everyone else has zero income). The Gini coefficient can also be used to measure wealth inequality. This use requires that no one has a negative net wealth. It is also commonly used for the measurement of discriminatory power of rating systems in the credit risk management.

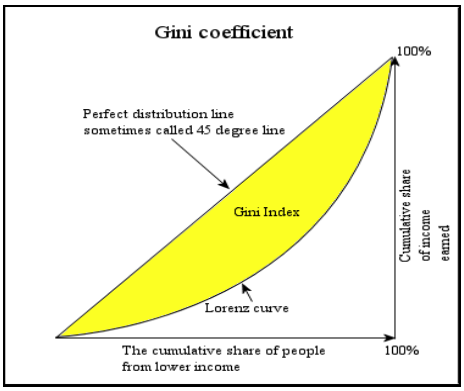

Figure-1: Gini Coefficient

The Gini coefficient is defined as a ratio of the areas on the Lorenz curve diagram. If the area between the line of perfect equality and Lorenz curve is A, and the area under the Lorenz curve is B, then the Gini coefficient is A/(A+B).

Results and Discussions

Socioeconomics

This section presents the survey estimates regarding socio-economic status of the respondents (see figure 2) particularly focusing on agriculture and its contribution in total household's income. It is observed total majority of the respondents had primary level of education (38 percent), followed by Middle, Matric and graduation while there about 20 percent respondents were illiterate, which might be the driver

inequality (Magsi, 2013; Malik 2005). Besides the level of education we have also find out that primary source of their income, where it was observed that majority of the respondents (85 percent) engaged in agriculture followed by their own business (small scale) and daily wage laborer, while it was also observed that about 2 percent people were serving as government servants at various departments I the study area. The statistics is not so surprising because national data also reflects that more than 70 percent of the local population is residing in the rural areas and are engaged in the agricultural activities (GOP, 2014; Malik 2005).

Figure-2: Socioeconomics of the respondents

By distinguishing the interviewed households according to their income levels we have found that about 59 percent of the households were under poverty line using criterion of Rs. 1539 per person per month. Highest proportion of poor was recorded for owner cum-tenants (80 percent) followed by tenants (57.14 percent), and land owners (38.24 percent). These estimates appealed the policymakers for viable agriculture reform and economic package for agriculturists in the country especially in Sindh province. Due to disparity between price trends of inputs and agriculture produce, farming communities are continuously pushed under the poverty line since it was reported that input prices were increasing at higher rate than that of agriculture produce (IFAD, 2001).

Poverty measurement

For further poverty analyses it was aimed that the development estimates namely, poverty head count ratio, poverty gap, Sen index and Gini coefficient might be calculated in order to have true picture of poverty in the local actors. Thus results are given in the following tables

Table-1: Poverty gap in income of the study area

Tenancy status in agriculture		Average income of poor	Poverty gap	Std. Error of Mean
Agriculturist	Owner	-153	-1653	219.7371
	Owner cum-tenant	-388	-1888	643.0392
	Tenant	-140	-1640	135.3198
Total		-174	-1674	136.6254

Table 1 reveals that the income of per person per month of households falling under poverty line was recorded to be Rs.-174 while poverty gap was Rs. -1674. The negative income of respondent. This indicated that an economic boost of Rs. -1674 was required to achieve the poverty line of Rs. 1539 per person per month. Highest gap (Rs. -1888) in income was recorded for the owner cum-tenant and lowest gap (Rs. -1640) for tenant and for owners was Rs. -1653.

Table-2: Sen index estimation of the study area

		N	Poor (P)	P/N	(A)	B –A	(B-A)/A	$S.I = \frac{P}{N} \times \frac{B-A}{A}$
Agriculturist	Owner	34	23	0.67	-153	-1653	10.80	7.23
	Owner cum-tenant	05	05	01	-140	-1640	11.71	11.71
	Tenant	21	17	0.80	-388	-1888	4.86	3.88
Overall		60	45	0.75	-174	-1674	9.62	7.21

P = number of people below the poverty line N = total number of people in society

B = poverty line income A = average income of those people below the poverty line

From Tabl-2 it can be seen that lowest Sen Index of 3.88 for tenant and the highest (11.71) for owner-cum tenants has been calculated, while the overall index of the study area was about 7.21. And owner's index was recorded to be 7.23. Increased input costs, stagnant output revenues, shortage of irrigation water, and poor quality of inputs have deteriorated economic conditions of tenants. The villages, ragged clothes, children out of school, and gloomy look were the distinct features of poor despondence and the same were protesting to the policymakers, public and private institutions as well as multinational donor agencies that despite their big claims, the poor were going to be poorer. They were looking for agricultural and land reforms so that they could come out of poverty curse, which is the situation in the country also (Anwar, 2005).

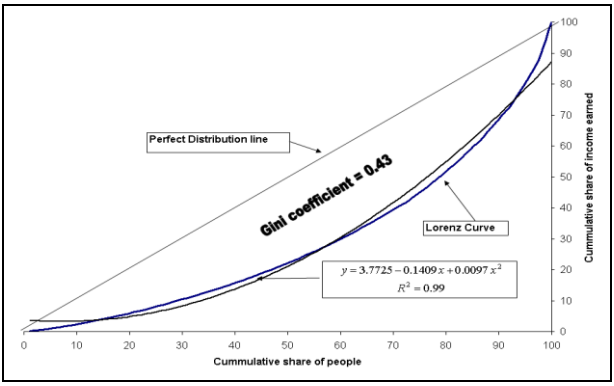

Figure-3: Estimation of Gini coefficient

Figure-3 discloses the Lorenz curve, fitted regression model with coefficient of determination, and Gini coefficient. The Lorenz curve indicated the slight curvature that deviated from perfect distribution line. The perfect distribution line indicates that income is equally distributed, which is hypothetical, among the population while Lorenz curve reveals the departure from perfect distribution. The gap between both the curves was estimated by Gini Coefficient. The fitted curve was estimated to be $y = 3.7725 - 0.1409x + 0.0097x^2$ with sufficiently large R-

square value of 0.99, nearby perfect relationship between Lorenz curve and estimated quadratic regression line. The Gini coefficient was estimated to be 0.43. The value of Gini coefficient revealed that there was moderate disparity in distribution of income. The difference could be on the account of disparity in level of income between tenants and landlords. From this, it may not be inferred that landlords possessed upper socioeconomic profile (Mulyanto, 2014; Anwar 2005).

Conclusion and Suggestions

The present study was conducted to document the socio-economic conditions as well as to assess the role of agriculture in enhancing household income by using survey methods. It is concluded that the respondents lacking proper education and unawareness in targeted area, because only 2 percent of the interviewees had education at university level. Such situation kept them away from better sources of income. That is why they were engaged in conventional agriculture and small kind of business like shop keeping etc, while very few respondents were working in services sector. In order to assess gap Lorenz curve has been fitted which was estimated to be $y = 3.7725 - 0.1409x + 0.0097x^2$ with sufficiently large R-square value of 0.99, where Gini coefficient was estimated to be 0.43. The value of Gini coefficient revealed that there was moderate disparity in distribution of income. From present research it is projected that efforts may be taken to increase literacy ratio in the region. Viable educational programs may be developed and effectively implemented to enhance enrolment ratio in schools. as majority of the respondents were engaged in agriculture, so the agriculture education extension services may be provided then at far gates in order to augment this sector at scientific lines. Vocational education may be imparted for females so that they could be able to generate income along with their men. Training programs particularly focusing on

profitable crops and raising livestock and poultry may be arranged for capacity building of farmers to enhance their incomes. Marketing infrastructure may be improved to enhance the profit margins in comparison of intermediaries. Cold storages may be developed to stabilize the prices of agricultural products especially for fruits and vegetables. Efforts may be taken for the export of agricultural products, which will not only affect the livelihood of rural communities but also the country's economy.

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