

*Measuring Acute Poverty Using Multidimensional Poverty
Index: A Case Study of Sarappur Union, Khulna*

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As the world is facing economic depression in recent years, the developing countries are suffering the most. Countries like Bangladesh are facing both economic growth and poverty growth. Economic growth doesn't mean that the people are wealthy. Still, poverty is one of the main problems in Bangladesh. The poor are still suffering from a lack of equity. The poor are not only suffering lack in one poverty dimension but also multiple. This research evaluates the nature and force of the rural poor of Sarappur. which is a remote place in Dumuria Upazila of Khulna. There is also some evaluation of poverty through different aspects. The research has some data about the base needs like health, education, and housing.

1. Introduction

Developing countries like Bangladesh are facing economic depression every day. The problem is sometimes so expanded that the rural and urban area is affecting simultaneously. But after all, rural areas are suffering more than urban areas because most people live below the poverty line. To control the poverty line of the whole country, rural poverty must be evaluated because the country's economy is mainly based on a rural economy. So, if the condition of the poor can be studied through research, the economic condition of the rural area becomes clearer.

Nowadays the poverty of the rural areas is so complicated that we cannot explain it from a single point of view. Households are becoming poor not only through an economic depression but also from other factors too. The rural land of Bangladesh is still owned by about 20% of the rural area people. Other 80% people are mainly working on that land and earn their livings. As a result, the rich are becoming richer and the poor are becoming poorer. This kind of imbalance land use is also a cause of poverty but this research is mainly focusing on the factors that are directly involved with poverty like health, education, income etc.

This research is mainly based on Multidimensional Poverty Index (MPI). As poverty nowadays is pretty much complicated, the research must be conducted through different dimensions. The main goal of this index is to measure acute poverty. The MPI can define poverty and indicate it more perfectly. As the research is mainly based on Sarappur Union, direct and indirect data collection was necessary. Also, the research will explain in detail the living standard, health, and education of the union. Identifying different categories of poor is also a target of this research.

2. Literature

Most countries of the world define poverty in a unidimensional way, using income or consumption levels. But poor people go beyond income in defining their experience of poverty. They often include a lack of education, health, housing, empowerment, humiliation, employment, personal security and more. No one indicator, such as income or consumption, is uniquely able to capture the multiple aspects that contribute to poverty (Uddin, 2016). Furthermore, levels and trends of income poverty are not highly correlated with trends in other basic variables such as child mortality, primary school completion rates, or undernourishment (Aglietta et al 2010: 24, 27). A person or household can be income-poor but multidimensionally non-poor, or income rich but in multidimensional poverty. In recent years, the literature on multidimensional poverty measurement has blossomed in several different directions (Narayan et al 2000). The 1997 Human Development Report and the 2000/1 World

Development Report vividly introduced poverty as a multidimensional phenomenon, and the Millennium Declaration and Millennium Development Goals (MDGs) have highlighted multiple dimensions of poverty since 2000. New academic measurement methodologies are being created. At the same time, the number of countries conducting multitopic household surveys that provide the required inputs for the construction of multidimensional measures has increased dramatically from the mid-1980s to around 130 developing countries at present. The most recent survey data that were publicly available for Bangladesh's MPI Estimation refer to 2014. In Bangladesh, 40.7 percent of the population (64,816 thousand people) are multidimensionally poor while an additional 19.6 percent live near multidimensional poverty (31,172 thousand people). The breadth of deprivation (intensity) in Bangladesh, which is the average deprivation score experienced by people in multidimensional poverty, is 46.2 percent. The MPI, which is the share of the population that is multi-dimensionally poor, adjusted by the intensity of the deprivations, is 0.188. Nepal and Pakistan have MPIs of 0.116 and 0.237 respectively.

Multidimensional poverty measures that are based on people's own deprivation profiles can at a glance, provide an integrated view of poverty. The most widely used multidimensional poverty measures since the 1970s have been what are called 'counting approaches. Most applications of counting measures tend to report a headcount ratio. While this is very easy to understand and communicate, it does not provide an incentive to reduce the deprivations of the poorest of the poor. Nor can it be broken down by dimension to show how people are poor.

3. Data and Method

The indicators must bring into suitable deprivation scale. The questions must be evaluated in a dichotomous way. Deprivation is the consequence of a lack of income and other resources, which cumulatively can be seen as living in poverty. The relative deprivation approach to poverty examines the indicators of deprivation, which are then related back to income levels and resources. As this is multidimensional research, deprivation is not only bound to income and resources. Each dimension is equally weighted. Thus, each dimension has a weighted value of 1/5 and each dimension value is equally distributed to its items. Hence, for education each indicator value is 1/10, for health, each indicator value is 1/15, for the standard of living each indicator value is 1/30, for financial aspects, each indicator value is 1/16 and for political aspects, each indicator value is 1/10. Then the highest value of MPI for a respondent is,

And the lowest value of MPI for a respondent is = 0. If one person's total weighted value is above 0.3 or 30% we can identify him as multidimensionally poor. The MPI is,

$$C_i = \left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) + \left(\frac{1}{12} + \frac{1}{12} + \frac{1}{12}\right) + \left(\frac{1}{30} + \frac{1}{30} + \frac{1}{30} + \frac{1}{30} + \frac{1}{30} + \frac{1}{30}\right) + \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) = 1$$

$$MPI = M_0 = \frac{q}{n} \times \frac{c}{q} = H \times A$$

Here,

M0= MPI Value, n= number of respondents, q= number of Poor, ci (k)= the sum of deprivation value of each poor respondent, A=the average of the deprivation scores among the poor only, H= Multidimensional Headcount Ratio.

4. Multidimensional Poverty Scenario:

Collected data reveal that 77% of households are multidimensional poor (H%), mainly dwellers of Shenpara of Sarappur Union. The average intensity of poverty (A%) is 42%, that is households that are multidimensional poor are deprived in average 42% of different 16 indicators of MPI. Since MPI is the product of the percentage of poor people (H) and the average intensity of poverty (A), it yields an index of 0.325 which explains that if 1/3rd (1/3=0.33 0.325) of people who lived in squatter or slum in Shenpara experience deprivations in all indicators index value M0 would be 0.325.

5. Shared Factors of MPI, Poverty Risk, and Poverty Line:

From the data, it has been found that from the 5 dimensions of MPI, the living condition has the highest percent contribution (33%) to MPI. Education is contributing 2%, Health is 17%, Financial Aspects are 32% and Political Aspects are 16%. That means most of the people in Senpara are deprived of living standards and financial aspects.

From the data analysis poverty risk also has been found that 20% of households are vulnerable to poverty that is they are nearly about the experience of multidimensional poverty. 2.5% of households are experiencing extreme or severe poverty.

To describe poverty in a single-dimensional way, a poverty line is needed. The poverty line that is used in this research is 1.9\$ which is about 157taka. From the analysis, it can be stated that 95% of people are below the poverty line in Senpara of Sarappur. Also, there is

Dimensions	Indicators	Deprived		Weight
		Yes	No	
Education	No one has completed five years of schooling			1/10
	At least one school age child not enrolled in school			1/10
Health	At least one child is sick once a week			1/15
	One or more child has died			1/15
	Eat food one time a day in three days of a week			1/15
Standard of Living	No electricity			1/30
	No access to clean drinking water			1/30
	No access to adequate sanitation			1/30
	House has dirt floor			1/30
	Household uses dirty cooking fuel			1/30
	Household has no car and owns at most one bi cycle, motorcycle, refrigerator, TV, mobile			1/30
Financial Aspects	No employment			1/15
	No savings			1/15
	Monthly Loan more than monthly expenditure			1/15
Political Aspects	No voting right			1/10
	No access to law and order			1/10

Table 1: The Multidimensional Poverty Index

Poverty Cutoff (k)	Index	Value
K value= 33%	M0	0.325
	Percentage of poor household (H%)	77%
	Average intensity of poverty (A%)	42%

Table 2: Multidimensional Poverty Index Value

a poverty gap index of 24.75. This is the minimum cost to eliminating poverty if transfers are perfectly targeted. The squared poverty gap index (17.386) averages the squares of the

Poverty Cutoff (k)	Index	Value
K value = 20% - 33.33%	Percentage of households who are vulnerable to poverty	20%
K value = 33.33%	Percentage of poor Households	77.30 %
K value = 66.66%	Percentage of households who experience extreme or severe poverty	2.50%

Table 3: Poverty Risk Table

poverty gaps relative to the poverty line. It is one of the Foster-Greer-Thorbecke (FGT) class of poverty measures.

Conclusion

This research is mainly based on poverty. The rural area is the main victim of it. The research is evaluating poverty through 5 main dimensions that are being faced by the rural people. Sarappur is a perfect area to conduct this study. From the study, it can be found that Senpara of Sarappur is facing a great percentage of multidimensional poverty. Though some indicators are null still most of the households are facing multidimensional poverty. Also, 95% of people are below the intense poverty line. Poverty is a problem that is emerging highly in developing countries like Bangladesh. This study can be used to point out the indicators that are mainly responsible for poverty. The research is not only defining poverty but also the economic and political condition of the area. Also, it is identifying some important health issues too. As a result, the research can be a great use to find the main indicators that are affecting the area and also find a better solution for the problems.

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