



**An Ascertainment of Multidimensional Poverty among Households: Evidence from Attock District**

**Nabila Saddaf**

FUUAST School of Economic Sciences,  
Federal Urdu University of Arts, Science and Technology, Islamabad, Pakistan.

**Shamiala Aslam**

FUUAST School of Economic Sciences,  
Federal Urdu University of Arts, Science and Technology, Islamabad, Pakistan.

**Abstract**

Dynamics of poverty remain a debatable area over the history of developing economics and recently have been acknowledged as a multidimensional socio-economic phenomenon. In a developing country like Pakistan, a good number of people are dispossessed of their fundamental privileges i.e. health, education, employment, besides other housing services. It generates and maintains the poverty problem. The present research endeavors, based on primary data collected through a comprehensive questionnaire from randomly selected set of 120 households in the Attock district of the Punjab province. A modified FGT indexing approach was used to evaluate the frequency, severity and depth of multidimensional poverty, through using the dual cut off approach for the documentation of poor. The results expose the considerable disparities in the magnitude of income, poverty and multidimensional poverty along with significant variation over the rural & urban regions at sub-group and overall levels.

**Keywords:** income, multidimensional poverty,

**JEL Codes:** H24, J32

## I. Introduction

Poverty is a great barrier to prosperity across the developing societies. As long as the issue of poverty exists, the vision of sustainable growth cannot be documented in its right sense. There is a common observation that poverty in both emerging and developed countries is an essential long term process as St Mark's Gospel (Chapter 14, verse 7) puts it, that "*the poor you shall ever with you*". Generally, poverty has been defined as low level of income or low level of wealth in material terms. Though in recent times, absence of opportunities plus vulnerability and deficiency of basic competencies such as education and health have been involved and underlined as input features of poverty. Mixtures and contacts between material poverty, capability, deficiency and vulnerability often distinguish the meager (Grant, Hulme, Moore, & Shepherd, 2004). Poverty is, thus, not the consequence of a single cause; it is actually a multidimensional phenomenon. Poverty resides in some practices of income inequality, which was a basis of elimination social life, in division of living circumstances needed to individual pride. These livelihood circumstances resemble toward the competences of persons, families as well as societies to get together their essentials in various magnitudes including shelter, health, employment income, nutrition, education, sanitation and employment to useful assets to resources, community social places and markets. Most of the basic features of poverty have remained more or less intact. As a result, a large fraction of the poor in India are also persistently poor in terms of duration in addition to severity (Mehta & Shah, 2001).

In the early fifties, economic evolution was attained by the practices of planned development that has made a noteworthy effect on the frequency of poverty measured in terms of average spending of the household. The poor are underprivileged in numerous ways, like low levels of income, poor infrastructure, relatively high levels of mortality, illiteracy and reduced right to use to resources such as forest, water and land. Human and gender development indices pull through income based indicator as quantify of wellbeing, by moving beyond income methodologies, to measuring development and uniting competences such as being healthy or literate into the development index. Even though severely controlled by data restrictions, the MPI discloses dissimilar patterns of poverty, as it lightens a dissimilar set of deficiencies. The Multidimensional poverty index has three magnitudes: health, education and living standard that are measured by ten indicators. Deprived households be recognized and a comprehensive evaluation was built by the methodology suggested by Alkire and Foster (2007). The weight of each dimension are equal and also given equal weight to each indicator inside a dimension. Multidimensional poverty index discloses the grouping of scarcities to thrash a household at the identical time. A household was considered to be multidimensional poor, if the sum of combination of several indicators is greater than 30% of deprivation. The MPI is the product of percentage of poor people (*Head count*) and *average intensity of deprivation* which imitates the fraction of scale in which households are underprivileged. Alkire and Foster state on easy way to interpret and compute the MPI (Alkire & Santos, 2010).

The Multidimensional Poverty Assessment Project is a worldwide inventiveness directed by the *United Nation's International Fund for Agriculture Development (IFAD)* to test and to check the progress. The Multidimensional Poverty evaluation tool is termed as *Multidimensional Poverty Assessment Tool (MPAT)* for local-level rural poverty evaluation. The MPAT is a survey based thematic indicator that delivers an outline of ten fundamental dimensions related to human well-being and rural poverty. These ten dimensions are: Nutrition security and food, Health and healthcare, Domestic water supply, Hygiene and sanitation, Energy and housing, Agriculture assets, Education, Exposure and flexibility to shocks and gender equality (Saisana & Saltelli, 2010).

Keeping these facts in view, one can easily draw a conclusion that a simple uni-dimensional estimation of poverty was not of much importance for policy makers. A lot of research questions rolled down in the mind of development thinkers. Why multidimensional poverty is necessary in the perspective of economic development? What kind of dimensions are to be included? Why people are still considered deprived even if they are non-poor in monetary terms? Who is vulnerable in multidimensional perspective? In the context of these questions the fundamental goal of the study is to estimate frequency, complexity and brutality of poverty in multidimensional arrangement among the household living in district Attock. Overall, present study aims to measure multidimensional poverty and its vulnerability across households of District Attock. Some objectives of the study were: To review number of dimensions related to poverty, to measure multidimensional poverty among households, to visualize the vulnerability across individuals and households.

## II. Review of Literature

Christiaensen and Boisvert (2000) differentiate between poverty and vulnerability as: poverty can be depicted as not having sufficient now, whereas vulnerability shows high probability now of suffering a forthcoming short falls. Their indication of vulnerability is the risk of forthcoming short fall and is articulated as a likelihood statement concerning the failure to achieve an assured starting point of wellbeing in the future. In the uni-dimensional income methodology vulnerability is considered as the probability of below the poverty line, multiplied by a conditional probability weighted function of a short fall below this poverty line way.

Weber, Edwards, and Duncan (2004) put that during 1990s, in rural and urban areas poverty decreased due to high employment of single mothers. Their consequences suggest that, holding demographics persistent, employment increases due to changes in welfare and social policy during this period -but this didn't had any effect on poverty – for both urban and rural single mothers. If urban and rural demographics had been persistent, the policy deviations would have reduced poverty and raise employment in rural areas. Estimated policy impacts were not superior in rural places without demographic controls. This recommends that rural demographic alters restricted the policy influence on rural single mother poverty and work.

Shahabuddin and Ali (2006) propose that the flood regions are the nastiest among other disaster regions in terms of the frequency of poor, inadequate income, food deficiency, high concentration of wage laborers and illiteracy. So, as anticipated, contact to government programs like VGF/VGD is maximum in flood regions. On the other hand infrastructural facilities, mostly roads, are more widespread in naturally fortunate areas. The study observes that communities that seem to be predominantly vulnerable comprise households with incomplete assets, people without family to support them, women headed households, people without family to support them, fishermen, teen age

unmarried girls and groups living on the island. Their liability is more strengthened through helplessness to lessen the risk of natural disasters. The households particularly of naturally unfavorable regions do not have any feasible surviving tactics. The people whose borrowings and reserves are the most frequent approaches. Remarkably, it was perceived that several people were capable to stand and sometimes even recover their financial position match up to others with parallel conditions, owing to: little household size, better health, more earners and divergence in employment, larger migratory propensity and inspiration.

Alkire and Seth (2009) classify numerous advantages of using the AFM to evaluate multidimensional poverty and to categorize deprived households. The advantages are: it gives a usable treatment of the categorical/ordinal data; being deprivation and poverty focused, it gives independence to each dimension supposing substitutability across dimensions; it is flexible to allocate equal or several weights to dissimilar dimensions depending upon their comparative importance; it is highly informative for policy because it shows which dimensions are motivating the multidimensional poverty in certain regions; it is vigorous in identifying poorest of the poor by increasing the aggregate cut-off point. The AFM is highly convenient for ascertaining households for various types of social security. For example, if policy makers want to provide health insurance to the poor, they can find households falling below the poverty line.

Usman (2009) states that poverty is multidimensional, existing not only globally but also particularly culturally, politically and economically in different regions of a country and has an increasing trend. The gap between haves and haves-not had staggered. Inequalities, longitudinal dimensions, policy uncertainty, lack of spiritual capital and gender disparities are the reasons of poverty in Pakistan. Political, social and economic empowerment is the origin of holistic development. The study examined the different determinants and socio-economic aspects of poverty in Pakistan.

### III. Methods and Materials

#### III.1, Description of facts and figures

The region of study was district Attock includes Hattian, Hazro and Attock. Data was collected through quantitative and qualitative methods. Under qualitative method focused group method was used and under quantitative method questionnaire was used. Data was analyzed through FGT (Foster, Greer and Thorbecke) method to measure poverty among households by setting a cut off value (J. Foster, Greer, & Thorbecke, 2010). Variables which are used in study are income, health and education. The formula for FGT measure is:  $P = \frac{1}{N} \sum_{i=1}^N P(z, y_i)$

Where:

$P(z, y)$  is the person poverty measure, taking the value zero for non-poor and one for poor. A household was considered poor, if he lacks basic facilities of health, primary education and some other housing services. The cut off value for education is primary level and income poverty line is Rs.5000. Multidimensional incidence of poverty, severity of poverty and depth of poverty is determined through poverty gap, the headcount approach and squared poverty gap respectively by following formulas which were from (J. Foster et al., 2010).

$$\text{Headcount Index} = \frac{q}{n}$$

Where:  $q$  = poor people and  $n$  is the total population

$$\text{Poverty Gap} = \frac{1}{N} \sum_{j=i}^q \left( \frac{z - y_j}{z} \right)$$

Where  $N$  is the total population,  $q$  is poor population,  $z$  is the poverty line and  $y$  is the income of the poor.

$$\text{Incidence and Severity of Poverty} = \frac{1}{N} \sum_{j=i}^q \left( \frac{z - y_j}{z} \right)^2$$

### IV. Results and Discussions

The people of district Attock however look that they are not deprived of basic necessities such as health education and income, but after this study it is revealed that they are facing many problems in different dimensions. For this study 120 households were visited from three villages of district Attock, which are Kamra, Hattian and Hazro. Study shows that there are many factors which are affecting the living standard of the people of district Attock. Most of the people are poor in accessing basic needs; some are deprived of health facilities and some in others. During the study it was observed that people are still deprived in many dimensions due to lack of awareness. In education sector enrolments are very less and teachers are also not available, plus they are not highly qualified. Uni-dimensional method can be useful when a definite single dimension resource variable such as income, health and education has been carefully chosen as the foundation for poverty assessment. These variables are assumed to be fundamental; however, in some cases these variables may have ordinal significance. Identification in uni-dimensional approach continues by locating a poverty line equivalent to a minimum level below which, one is considered poor.

#### IV.1. Uni-Dimensional Poverty Estimates

Uni-dimensional method requires a single cut off and a single dimensional variable. It can be single resource variable as well as total expenditure added up across different sets such as in surveys. In this study uni-dimensional poverty approach was used to measure estimates of income, education and health of Hazro, Hattian and Kamra; regions of district Attock. Implementing this approach for estimating income in Attock, 120 households were surveyed and cut off value for income was considered Rs. 5000 per month. The reason for choosing this cut off value is that people living in regions of Attock district are deprived of even basic necessities of life. Their income is marginal however, few people live abroad but overall living standard in this region is very low. This paper used this cut off because if it had used per capita household income then there would have many shortcomings because it would ignore the economies available to persons living together in households as well as different needs of households of different configurations.

The Uni-dimensional poverty estimates for income in Kamra is 27.5 percent, in Hattian also 27.5 percent but in Hazro the incidence of poverty is greater than the other two regions that are 32.5 percent. The reason behind this is that the people of Hazro mostly depend on agriculture and owing to arid area they are unable to achieve even subsistence agriculture. Therefore, the facilities like nutritional food etc. are not available to them. Their family size

is very large and headed by a single person whose income is unable to meet the requirements of those family members. As in Kamra and Hattian incidence of income poverty is as in West Bengal in 1999-2000 was 27.02 (Mehta & Shah, 2001). The question is whether a person or family has an access to basic health facilities. In these facilities availability of services of doctor, hospital or clinic within a reasonable distance and the resources necessary to pay for these services must be available. A household that is not poor according to poverty line is assumed to have access to health services or facilities. People of Kamra have greater incidence of poverty of 47.5 percent than the other two regions. The reason behind this is their poor sewerage system and no provision of any clinic or hospital in a nearer distant. There is only a single clinic where the doctor comes often. Region Hattian has lesser incidence of poverty of 40 percent; the reason is that most of the people have free health facilities from Government because most of the people are employed under Government.

**Table no. 1: Uni dimensional Poverty Estimates**

Regions	Incidence (Income)	Incidence (Health)	Incidence (Education)
Kamra	27.5	47.5	35
Hattian	27.5	40	40
Hazro	32.5	42.5	32.5
Attock District	29.2	43	36

As in Hattian, the incidence of poverty in Kwazulu-Natal (province of South Africa) is also 40.24 (Basarir, 2011). A household below primary level education is considered poor in education. In this district the people have handsome income and best school facilities but they do not want to educate their children. They just want to engage their child in business or if someone from the family is abroad then their children also go there and engage in different activities. In some areas people have no access to schools and problem of pick and drop also exist, transportation cost is high and therefore people are unable to educate their children. The head of the family should be educated for the attainment of education among children but in this area most of the heads are uneducated therefore the occurrence of education poverty is high. Occurrence of education poverty in Attock is 36 percent in which major contribution is of Hattian that is 40 percent. The reason is that the people of Hattian cannot afford the expenses of education. The poverty level also depends on the education of the head of household, if the head is educated then there is low level poverty level and if the head of household has no education then there high level of poverty. As in Hazro, the incidence of poverty in Northern Cape (province of South Africa) is 32.19 and in Mpumalanga (province of South Africa) is 35.31 very near to the Kamra region under the same cut off point (Basarir, 2011).

#### IV.II. Multidimensional poverty estimates

The multidimensionality of poverty is not an issue. Poverty means poor health, food insecurity, unstable housing, low income and insufficient education. The mechanisms of poverty change across time, people and background but several domains are involved. Even though level of expenditure of the households stayed the main measure of standard of living by which occurrence of poverty was measured and the headcount ratio became the main indicator of poverty. The poor undergo deprivations in multiple ways: illiteracy, low levels of income and poor access to resources such as land, credit, water and forests. Poor quality of infrastructure imitates tenacious denial of opportunities for income growth.

**Table No. 2: Multidimensional Poverty Estimates**

Regions	Income			Health			Education		
	Incidence	Depth	Severity	Incidence	Depth	Severity	Incidence	Depth	Severity
Kamra	27.5	0.0825	0.029	47.5	0.25	0.17	35	0.145	0.087
Hattian	27.5	0.1165	0.071	40	0.26	0.187	40	0.185	0.103
Hazro	32.5	0.10	0.0375	42.5	0.30	0.23	32.5	0.165	0.095
Attock	29.2	0.104	0.046	43	0.244	0.195	36	0.165	0.095

Income is an important mean to attain the valuable ends. The competency based scrutiny of poverty fundamentally demands a multidimensional measurement of poverty. Poverty is a state in which a person does not have access to sufficient resources to achieve a minimum level of living. To achieve that level of living a person must have at least such amount of income or earning so that he can fulfill his basic needs. Incidence of poverty in district Attock is 29.2 percent. Incidence of income poverty in Trashingang (district of Bhutan) is also 29 percent (Santos & Ura, 2008). Kamra, Hattian and Hazro have 27.5, 27.5 and 32.5 percent incidence of poverty respectively. Incidence of poverty in region Hazro is greater than the other two. The reason behind this is that most of the people from this region are linked with agriculture sector but owing to arid area they are not self-sufficient in this sector to fulfill their livelihood. Apparently most of the people have low incidence of poverty but of people who are related to agriculture sector or engaged in labor work, incidence of poverty in this region is high as compared to the other two. Depth and severity of poverty is high in region Hattian: depth of poverty is 0.1165 and severity of poverty is 0.071. Region Hattian has very high rate of poverty because most of the people and their children are engaged in labor work and some are unemployed. The overall poverty rate in India is 0.283 (Alkire & Seth, 2009).

All the activities of individuals are dependent on health because health is a blessing. A healthy mind can contribute in better livelihood to family as well as to the nation. This will also increase the production of economy. In the Attock district only one Government hospital is working in the main city which is far away from the villages. People residing in main city are enjoying Govt. health facilities as well as private health facilities because most of the

people from main city are living abroad or engaged in business but the people from countryside are deprived of these facilities. Some have no access to the facilities while don't some have enough resources to pay for these services. Occurrence of poverty in health in Attock district is 43 percent which comprises 47.5 percent from Kamra, 40 percent from Hattian and 42.5 percent from Hazro. Rate of health poverty in Kamra is greater than the other two regions because most of the people do not have enough resources to avail the health facilities. Depth and severity of health poverty in Attock district is 0.244 and 0.195 respectively. Hazro region has greater depth and severity of health poverty.

Depth and severity of health poverty in Mexico is 0.37 (J. E. Foster, 2009). Vietnam is 43.75 percent deprived in health and Albania is 43.86 percent deprived in health dimension (Alkire & Santos, 2010). Education is the main goal of human development in the year 2015 and also considered human asset. In the start of 21<sup>st</sup> century approximately one billion people were unable to sign and read (IFAD, 2007). The enrollment in the primary education was extremely low in the under developing countries as compared with developed countries. In Pakistan, the enrolment in primary school is very low that imitate literacy problem, child labor and poverty (Naveed & Islam, 2010). Pakistan spends very low contribution of its GDP on education that is just 2.6 percent. On the other hand, different kinds of education systems are present and education expenditures and transportation costs are also very high. UNESCO recommends that developing countries should allocate minimum 4 percent of their whole Gross Domestic Product on education. The Chad government allocated Chad, which is poor country, 6 percent education budget for year 2008. But Pakistan did not allocate its education budget as per with Chad (Khan, 2002). Incidence of education poverty in district Attock is 36 percent which includes 35 percent from Kamra, 40 percent from Hattian and 32.5 percent from Hazro. Headcount ratio of education in Eastern Cape (South Africa) is 36.70 percent and Northern Cape (South Africa) has 32.19 percent headcount ratio (Basarir, 2011). Severity and Depth of education poverty is greater in Hattian because of scanty resources and many other problems like transportation etc. problem. Male part of the population has greater incidence of poverty then the female.

## V. Conclusions

Different questions which are raised in mind of policy thinkers are now answerable and helpful in policy making. From the study it is concluded that multidimensional poverty is necessary to control in the perspective of economic development because if one dimension is improved then other one remains as poor. Different dimensions affecting poverty are strongly correlated with each other. Dimensions which are most important to include are income, health and education. If in monetary terms people are well off then they have no access to education and health facilities, and hence they are still deprived of. So people must have to be multidimensionally non-poor to be a part of economic development.

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