©The Pakistan Development Review
50:4 Part II (Winter 2011) pp. 913–927

Assessing Poverty with Non-Income Deprivation Indicators: Pakistan, 2008-09

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1. INTRODUCTION

The multidimensional approach of assessing household or individual welfare or wellbeing is derived from Amartya Sen's capability theory. According to Sen,[1] economic and social arrangements should be evaluated in terms of capabilities enjoyed by those who live in them. In this way, Sen shifts the terms of the poverty debate away from a reliance on income and consumption poverty measures alone, to the consideration of multiple dimensions of people's lives. This conceptual shift is worthy even in instances where the income or consumption approaches prove most useful. For policy perspectives, it is worth highlighting that uni-dimensional measures only advocate the case for transfer policies that alleviate poverty in the short-term, whereas multidimensional measures permit the recommendation of structural socio-economic policies that could alleviate the intergenerational poverty in the long-term.

The traditional uni-dimensional approach, which considers only one variable such as income or consumption, is widely used due to its practicality. The methodology of measuring uni-dimensional poverty has developed considerably and according to Bourguignon (2003) "has reached today a high level of sophistication and operationality". There has also been progress in defining and measuring the multidimensional nature of poverty and ample literature is now available on the conceptual and measurement issues. However, "…challenges remain quite serious if the objective is to reach a degree of operationality (for multidimensional paradigm) comparable to that enjoyed by the income poverty paradigm" [Bourguignon (2003)].

Despite difficulties and arbitrariness in the measurement and aggregation of household multiple deprivations, a multidimensional approach to define poverty has been adopted in many developed and developing countries. The United Nations Development Programme (UNDP) has since 1990 challenged the primacy of GDP per capita as the measure of progress by proposing the Human Development Index (HDI), which combines income with life expectancy and educational achievement. Similarly, the Millennium Development Goals (MDGs), which now dominate the development agenda

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[1]A summary of Amartya Sen's views and the development of that literature over the last 20 years may be found in Sen (1997).

of almost all developing countries, also emphasise multidimensionality in measuring progress in alleviating poverty.

Recently a global exercise was carried out by Oxford Poverty and Human Development Initiative (OPHI) to develop Multidimensional Poverty Index[2] (MPI) for more than 100 countries with the help of 10 non-income deprivation indicators of education, health and standard of living. The results in terms of countries ranking and magnitude of poverty have been published in UNDP Human Development Report 2010.[3] However, there are some concerns regarding the subjectivity in selecting cut-off points for individual indicators as well as for overall index. Moreover, weights to indicators and sectors are also arbitrarily assigned for developing a composite index.[4]

In the context of Pakistan, first attempt to quantify the extent of multidimensional poverty in terms of the popular poverty measures was made by Jamal (2009). He developed poverty indices (headcount, poverty gap, poverty severity) with the help of 15 deprivation indicators of education, housing and household consumption. The author used household data and employed Principal Component Analysis (PCA) technique to develop a composite index of poverty. PCA is a multivariate statistical technique which is used to reduce the number of relationships by grouping or clustering together all those variables which are highly correlated with each other into one factor or component. It is however criticised that traditional PCA is not appropriate technique[5] of data reduction for categorical or binary (have, have not) qualitative variables due to not-normal and highly skewed distribution. The use of household financial poverty level as a component in multidimensional approach was also objected by other critics due to the rising debate on the methodology as well as reliability of household consumption data for estimating monetary poverty incidence.

This research therefore addresses these shortcomings and attempts to assess the magnitude of household multidimensional poverty by combining 16 non-income deprivation indicators through categorical principal component analysis (CATPCA).[6] Indicators of human poverty, poor housing and deprivation in household physical assets are included in estimating popular poverty measures. For assessing the inter-temporal consistency in methodology, poverty measures are also developed for the year 2005.

The next section discusses measurement and aggregation issues and the methodology adopted for this study. Features of the datasets used in this exercise are presented in Section 3. The multiple dimensions of deprivation, considered in the estimation of multidimensional poverty are briefed in Section 4. Section 5 presents the

[2]Very brief description of the methodology used in the estimation of Multidimensional Poverty is provided in Appendix-A. For detail see Alkire and Santos (2010) and Alkire and Foster (2007).

[3]A country briefing for Pakistan's MPI is available at http://www.ophi.org.uk/wp-content/uploads/Pakistan.pdf

[4]See Appendix-A of this study and Technical Note 4 of UNDP Human Development Report, 2010, page 230.

[5]For example, Naveed and Islam (2010) discussed this issue in their paper. They also developed multidimensional poverty for two provinces of Pakistan using Alkire and Foster (2007) methodology.

[6]Standard Principal Components Analysis assumes linear relationships between numeric variables. On the other hand, the optimal-scaling which is used in CATPCA approach allows variables to be scaled at different levels. Categorical variables are optimally quantified in the specified dimensionality. As a result, nonlinear relationships between variables can be modeled.

empirical estimates of multidimensional poverty, while the last section is reserved for some concluding remarks and policy implications.

2. METHODOLOGY FOR MEASURING MULTIDIMENSIONAL POVERTY

The multidimensional nature of poverty refers to the situation when an individual or household experiences a number of cumulative deprivations. These multiple deprivations represent different dimensions (economic well-being, education, health, social exclusion etc.) of human life.

There are two options available to decide when a household or individual is said to be poor in term of multiple deprivations. In the first option, each single indicator is assigned its own threshold value. For instance, Bourguignon and Chakravarty (2003) take as their fundamental and starting point in the development of multidimensional poverty measures that poverty consists of a shortfall from a threshold on each dimension of an individual's well-being. They argue that "the issue of poverty arises because individuals, social observers or policy makers want to define a poverty limit on each individual attribute: income, health, education, etc….".

The concern here is whether a household should be considered poor if it falls short of the thresholds for all attributes, or only falls short of one.[7] In the two attribute case, if attribute 1 (x1) is less than its threshold (z1) and attribute 2 (x2) is also less than its threshold (z2), the status of the household is unambiguously 'poor'. Alternatively, the shortfall might be only in one dimension, in which case the determination would depend on the nature of the relationship between the two attributes. If the attributes are substitutes and an individual has a sufficiently high level of the first attribute above the threshold to more than compensate in terms of welfare for the shortfall in the second attribute, than the person cannot be classified as poor.[8]

The second option refers to the case where to measure multidimensional poverty, a composite indicator incorporating the information from the selected deprivation dimensions or variables is constructed. The studies adopting this methodology combine the individual indicators into one index variable and assign a threshold. If the value of index variable is below this threshold, the household or individual is considered poor. The advantage of this approach is that it is compensatory: a low score on a certain indicator may be neutralised by a high score on another.[9]

Here, two important decisions have to be made. The first decision concerns the weights of the indicators in the composite index, and the second concerns defining the threshold value of the composite indicator used to distinguish between poor and non-poor

[7]For instance, Bourguignon and Chakravarty (2003) suggest that an alternative way to take into account the multi-dimensionality of poverty is to specify a poverty line for each dimension of poverty and to consider that a person is poor if he/she falls below *at least one* of these various lines.

[8]In the literature of multidimensional poverty, the distinction between being poor in more than one and in only one dimension has been referred to as the *intersection* and *union* definitions of poverty. For instance, if well-being is measured in terms of x1 and x2 then a person could be considered poor if x1falls below z1*or* if x2 falls below z2. This case would be defined as a *union* definition of poverty. In contrast, an *intersection* definition would consider an individual as poor only if x1 and x2 both fall below their thresholds.

[9]A good example is the UNDP's Human Development Index (HDI), constructed from indicators of life expectancy, education and standard of living. HDI has received a great deal of attention in the development context.

individuals or households. The weighting problem can be approached in a number of different ways. Besides equal weighting or subjective judgment of experts regarding the importance of each component, the weight structure may be empirically based on relative frequencies of components by using different multivariate statistical techniques.

Use of Principal Components Analysis (PCA) for indexing multidimensional phenomena has been well-established. Principal component analysis is simply a variable reduction procedure that (typically) results in a relatively small number of components that account for most of the variance in a set of observed variables. This technique reduces the number of relationships by grouping or clustering together all those variables which are highly correlated with each other into one factor or component. PCA produces components in descending order of importance, that is, the first component explains the maximum amount of variation in the data, and the last component the minimum. Thus, the first few components (Principal Components) account for a sizeable part of the variation in the data and subsequent components contribute very little.

However traditional PCA is best for continuous and normally distributed data as the technique assumes linear relationship between numeric variables. For category indicator variables, a team of Leiden University has developed Categorical Principal Components Analysis (CATPCA).[10] The technique is now available in SPSS and may be applied for data reduction when variables are categorical (e.g. ordinal) and the researcher is concerned with identifying the underlying components of a set of variables (or items) while maximising the amount of variance accounted by the principal components. The primary benefit of using CATPCA rather than traditional PCA is the lack of assumptions associated with CATPCA. CATPCA does not assume linear relationships among numeric data nor does it require assuming multivariate normal data. Furthermore, optimal scaling is used in SPSS during the CATPCA analysis and allows the researcher to specify which level of measurement (nominal, ordinal, interval/ratio, spline-nominal, and spline-ordinal etc.) in the optimally scaled variables is required.

After having a representation of the data in the component form, every household is ascribed a 'score' on each derived principal components/object using factor loading (variance in the individual attribute) as a weight and then multiplying this score with the standardised value of variables. To obtain an overall score (OS) for household, scores of all principal components are summed up after applying statistical weights (shares in eignvalues).[11]

Once the composite indicator in terms of 'overall score' is obtained for each household, one still has to define a procedure to identify the poor. To determine threshold or poverty cut-off point, another multivariate statistical technique is used. Cluster Analysis allows the classification of similar objects into groups, or more precisely, the partitioning of an original population into subsets (clusters) according to some defined distance measure. On this basis, an overall score of two clusters representing household status (poor and non-poor) is developed. It is found that households are grouped around positive and negative values of an overall score. Therefore, mean value (zero in this case)

[10]Data Theory Scaling System Group (DTSS), Faculty of Social and Behavioural Sciences, Leiden University, The Netherlands.

[11]It is a statistical term. The eigenvectors of a square matrix are the non-zero vectors that, after being multiplied by the matrix, remain parallel to the original vector. For each eigenvector, the corresponding eigenvalue is the factor by which the eigenvector is scaled when multiplied by the matrix.

of the distribution of the composite index is chosen as the cut-off point or as a poverty threshold. In other words, household *i* for which the composite index OS is smaller or equal than zero will be identified as poor.

After having a poverty threshold and the household status in terms of overall score with respect to multiple deprivations, the task then is how to aggregate this information into a single index to proxy the status of a group of individuals. Various poverty aggregates (indices) are used to proxy the status of a group of individuals. A class of functional forms, which has been suggested by Foster, Greer, and Thorbeke (1984), i.e. poverty incidence, poverty gap and poverty severity are widely used in the literature of poverty.[12] Thus, these three aggregate indices are estimated to give a picture of the extent and severity of multidimensional poverty in Pakistan.

3. THE DATASETS

Federal Bureau of Statistics (FBS), Government of Pakistan (GoP) conducts nationwide household surveys—Pakistan Social and Living Standard Measurement (PSLM)—to collect information on socio-economic indicators at district level. These surveys are conducted under the PSLM project which is designed to provide social and economic indicators in the alternate years at provincial and district levels. The project was initiated in July 2004 and will continue up to June 2015. The design of PSLM surveys is based on the Core Welfare Indicator Questionnaire (CWIQ) survey instrument, which essentially collects simple welfare indicators and indicators of access as well as use of and satisfaction with public services.

This study uses unit record data of PSLM survey conducted during the year 2008-09 which covers 77500 households across all provinces of Pakistan. Multidimensional poverty is also estimated from household unit record data of PSLM 2004-05 with the sample size of 76500 for the purpose of comparison.

4. DIMENSIONS AND COMPONENTS OF MULTIDIMENSIONAL POVERTY

The technique presented in the above section is applied to PSLM survey data enumerated during 2008-09 and 2004-05. Therefore, the selection of dimensions or components to derive multidimensional poverty is purely based on the appropriate data available in these household surveys. The selected dimensions and components in constructing indices of multidimensional poverty are briefly described below, while a schematic view of component variables[13] is furnished in Table 1.

The extent of human poverty in the household is represented by current and future levels of education deprivations. Two measures, illiteracy (head of household and spouse) and children out of school are included in this dimension.[14] Children between the ages of 5 to 9, who are not attending school, are taken to compute out-of-school children at the primary level. Moreover, following UNDP-MPI, another indicator of education deprivation is included. Households in which no household member has completed five years of schooling are considered poor.

[12]These measures are defined in Appendix-B.

[13]All these variables are binary. A value of 1 is assigned to poor household and 2 to non-poor households.

[14]Literacy is defined as the "ability of a person to read and write in any language with understanding".

No information regarding infant or child mortality and malnourishment is available in PSLM surveys. The dimension of health deprivation is therefore missing from the multidimensional poverty analysis due to absence of required information.

Table 1

Variables used to Assess Multi-Dimensional Poverty

Dimensions	Variables
Human Poverty	
	Illiterate Head of Household
	Illiterate Spouse
	No child of primary age (5-9 cohort) is in school
	No household member has completed five years of schooling
Poor Housing	
	Congested Household (Households with only one room)
	Congested Household (Person per room greater 2)
	Household with Inadequate Roof Structure
	Household with Inadequate Wall Structure
	Households with no electricity
	Households using unsafe (not covered) water
	Households with no telephone connection (landline or mobile)
	Households using inadequate fuel for cooking (wood, coal, etc.)
	Households without latrine facility
Economic and Household Assets Poverty	
	Households with no home ownership
	Households with no physical household assets
	Unemployed Head of Household

The housing quality dimension identifies people living in unsatisfactory and inadequate housing structures. It is represented by a series of variables. The housing structure is treated as inadequate if un-baked bricks, earth bound materials, wood or bamboo are used in the construction of a wall or the roof. Housing congestion is represented by households with only one room and number of person per room is greater than 2. Access to basic utilities is an important aspect of everyday lives of people. Deprivation in this respect includes households with no electricity, households using wood or kerosene oil as cooking fuel, households with no safe drinking water availability and households with no landline or mobile telephone facility. Households which are lacking essential facilities such as kitchens, bathrooms and toilets are also seen as an important poverty dimension. Due to data constraints, only households lacking a toilet facility are included in the 'poor housing' dimension of multidimensional poverty.

To capture the poverty in endowments, non-ownership of house and non-ownership of essential household assets[15] are added to the list of variables used to assess the household multidimensional poverty. Further, category of households with unemployed head is also treated as poor and included in this dimension.

5. MAJOR FINDINGS

Table 2 presents the national estimates of multidimensional poverty. In the year 2008-09, about 57 percent of the people of Pakistan were in the state of multiple deprivations.[16] This is indicative of more than 97 million people living in desperate condition and eventually being socially excluded. The magnitudes of multidimensional poverty incidence, poverty gap and poverty severity are substantially high in rural areas. According to the table, rural incidence is about 53 percent against the urban incidence of 26 percent. Similarly, the magnitudes of equity-sensitive poverty indices (poverty gap and poverty severity) for rural areas are almost five times higher when compared to their urban counterparts. Rural multidimensional poverty gap and poverty severity are estimated as eleven and four percent respectively, while comparative figures for urban areas are 3 and 1 percent respectively.

Table 2

National Non-income Multi-Dimensional Poverty Estimates, 2008-09

(Percent)

	Head Count Index [Incidence]	Poverty Gap Index [Depth]	FGT2 Index [Severity]
Pakistan	57.30	12.90	4.85
Urban	25.68	2.87	1.0
Rural	53.35	11.02	4.01

Source: Estimates are based on PSLM (2008-09) unit record data.

Provincial multidimensional poverty estimates for the year 2008-09 are presented in Table 3, while district-wise poverty estimates are tabulated in the Appendix (Appendix C, Table A.1 to A.4). As expected, the lowest and highest incidence of multidimensional poverty is estimated for Punjab and Balochistan provinces respectively. About 79 percent of the population of Balochistan is categorised as poor in terms of multiple deprivations. It is also noted that incidence of rural poverty in Sindh province is higher than rural poverty estimates of Khyber Pakhtunkhwa province.

Table 3

Provincial Non-Income Multi-Dimensional Poverty Incidence, 2008-09

(Percent)

	Overall	Urban	Rural
Punjab	36.93	22.42	43.58
Sindh	47.63	26.66	67.44
Khyber Pakhtunkhwa	56.10	36.53	60.00
Balochistan	78.53	44.83	88.61

Source: Estimates are based on PSLM (2008-09) unit record data.

[15]These assets are Iron, Fan, Sewing Machine, Radio, TV, Chair/Table and Watch/Clock.

[16]These deprivations are listed in Table 1.

Table 4 and Figure 1 show inter-temporal (2008-09 vs. 2004-05) changes in the multidimensional poverty indices. The estimates show a rise[17] of about two percentage point (3.62 percent) in multidimensional poverty. Measures of poverty depth/gap and severity are also showing upward trends. The phenomenon indicates rising inequality among poor. Figure 1 also indicates a significant (about 38 percent) rise in urban multidimensional poverty incidence as compared with 4 percent in rural area during 2005 and 2009.

Table 4

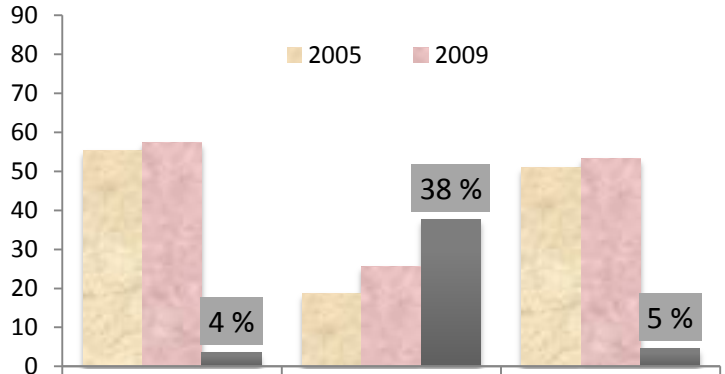
Inter-temporal Multi-Dimensional Poverty—Overall Pakistan

(Percent)

Poverty Measures	2005	2009	Percent Change	Percentage Point Change
Incidence	55.29	57.30	3.63	2.00
Depth	12.40	12.90	4.01	0.50
Severity	4.30	4.85	12.83	0.55

Source: Estimated from Household Surveys, PSLM 2004-05 and 2008-09.

Fig. 1. Inter-temporal Multi-dimensional Poverty Incidence—Overall Pakistan



	Overall	Urban	Rural
2005	55.29	18.66	51.03
2009	57.30	25.68	53.35
% Change	3.63	37.65	4.54

The provincial picture of changes in multidimensional poverty during 2005 and 2009 is portrayed in Table 5. Few important observations emerge from the table. First despite relatively low incidence of poverty, a significant increase in the magnitude is evident in case of Punjab province. Incidence of multidimensional poverty has increased from 32 to 37 which reflect rising inequality or relative poverty in the province. Province of Sindh is also depicting a rise in the poverty, while a decline in relative poverty incidence is observed in case of Khyber Pakhtunkhwa and Balochistan provinces.

[17]Multidimensional poverty is estimated with the help of component/object scores. These scores are derived after adjusting with mean and standard deviation (standardising). Thus, the estimates are reflecting relative poverty (or inequality) with reference to mean and should not be interpreted as an absolute poverty.

Table 5

Provincial Trends in Multi-Dimensional Poverty

(Percent)

Province	2005	2009	Percent Change	Percentage Point Change
Punjab	31.73	36.93	16.38	5.20
Sindh	44.24	47.63	7.67	3.39
Khyber Pakhtunkhwa	58.27	56.10	–3.72	–2.17
Balochistan	79.24	78.53	–0.89	–0.71

Source: Estimated from Household Surveys, PSLM 2004-05 and 2008-09.

6. CONCLUDING REMARKS

The operational emphasis of poverty is understood in terms of deprivation of food and other 'basic' commodities, and therefore, on private income or private consumption shortfalls, mainly due to the advancement and the level of sophistication in measuring and assessing financial poverty. However, vast literature is now available on conceptual and measurement issues of multidimensionality of poverty. Due to this advancement and technical development, non-income indicators of well-being and the multidimensionality of poverty have recently received much attention, especially in developing countries.

This research quantifies the extent of multidimensional poverty in Pakistan in terms of the popular FGT indices (headcount, poverty gap and poverty severity) and using latest available rich household data. Indicators of human poverty, poor housing and lack of physical assets are combined to get a composite index of poverty across multiple deprivations. These non-income indicators are developed using PSLM Surveys for the years 2008-09 and 2004-05. Multivariate statistical tools (Categorical Principal Component Analysis and Cluster Analysis) are used to construct the composite index and to ascertain multidimensional poverty threshold.

The empirical findings reveal that about 57 percent of the people of Pakistan were in the state of multiple deprivations in the year 2008-09. Rural incidence was about 53 percent, while 26 percent of urban population faced extreme poverty in terms of indicators used in the construction of multidimensional poverty. Inter-provincial comparisons regarding the multidimensional poverty incidence reveals lowest poverty incidence in the Punjab province. Balochistan has the highest multidimensional poverty incidences in both urban and rural areas. About 79 percent of the population of Balochistan is categorised as poor in terms of multiple deprivations. Inter-temporal exercise indicates a slight rise in the multidimensional relative poverty.

The findings are useful in the formulation of policies and implementation of strategies to reduce poverty, especially for targeting multi-dimensionally poorest districts and regions. Moreover, the magnitude of poverty indices may be used as a criterion in determining the national and provincial Finance Commission Awards. Poverty estimates will also facilitate provincial governments in future planning and resource allocation.

Appendices

APPENDIX – A

Multidimensional Poverty Index: UNDP Human Development Report, 2010

Alkire and Santos (2010) developed Multidimensional Poverty Index (MPI) for the 2010 *Human Development Report* [UNDP (2010)]. They constructed MPI for more than 100 countries and choose 10 variables for their MPI under the same three headings—health, education and living standards similar to the dimension of UNDP's *Human Development Index* (HDI).

Poverty is measured separately in each of these 10 components. The equally-weighted aggregate poverty measures for each of these three main headings are then weighted equally (one-third each) to form the composite index, also echoing the HDI. A household is identified as being poor if it is deprived across at least 30 percent of the weighted indicators. While the HDI uses aggregate country-level data, the Alkire-Santos MPI uses household-level data, which are then aggregated to the country level.

For the convenience, the methodology as narrated in the Technical note of HDR, 2010 is reproduced below:

"Each person is assigned a score according to his or her household's deprivations in each of the 10 component indicators. The maximum score is 10, with each dimension equally weighted (thus the maximum score in each dimension is 3⅓). The health and education dimensions have two indicators each, so each component is worth 5/3 (or 1.67). The standard of living dimension has six indicators, so each component is worth 5/9 (or 0.56). The health thresholds are having at least one household member who is malnourished and having had one or more children die. The education thresholds are having no household member who has completed five years of schooling and having at least one school-age child (up to grade 8) who is not attending school. The standard of living thresholds relate to not having electricity, not having access to clean drinking water, not having access to adequate sanitation, using "dirty" cooking fuel (dung, wood or charcoal), having a home with a dirt floor, and owning no car, truck or similar motorised vehicle, and owning at most one of these assets: bicycle, motorcycle, radio, refrigerator, telephone or television. To identify the multi-dimensionally poor, the deprivation scores for each household are summed to obtain the household deprivation(c). A cut-off of 3, which is the equivalent of one-third of the indicators, is used to distinguish between the poor and nonpoor. 4 If *c* is 3 or greater, that household (and everyone in it) is multi-dimensionally poor. Households with a deprivation count between 2 and 3 are vulnerable to or at risk of becoming multi-dimensionally poor".

APPENDIX – B

Poverty Measures

Various poverty aggregates (indices) are used to proxy the status of a group of individuals. A class of functional forms, which has been suggested by Foster, Greer, and Thorbeke (FGT), uses various powers of the proportional gap between the observed and the required expenditure as the weights to indicate the extent of and level of intensity of

poverty. The higher the power the greater the weight assigned to a given level of poverty. Therefore, it combines both incidence and intensity.

The following formula is used for measuring various poverty aggregates.

$$P^{\alpha} = (1 / N) \sum [(Z - \text{Score}) / Z]^{\alpha}$$

where;

P^{α} = Aggregation measure
N = Total number of households
Score = Observed household Score
Z = Poverty threshold or poverty line
$\sum$ = Summation for all individuals who are below the poverty line.

Putting $\alpha = 0$, the formula shows the proportion of households whose consumption falls below the poverty line. The poverty incidence (headcount) is the most popular measure used. The formula assigns equal weights to all of the poor regardless of the extent of poverty. Putting $\alpha = 1$, the Proportionate Gap Index or Poverty Gap (PG) is calculated. The PG measures the average distance from the poverty line. Although the PG shows the depth of poverty, it is insensitive to distribution among the poor. Putting $\alpha = 2$, FGT2 index is calculated. This index takes into account inequality amongst the poor and shows the poverty severity by assigning greater weights to those households who are far below the poverty line. Thus, these three aggregate indices (Headcount, Poverty Gap, and Poverty Severity) are computed to give a picture of the extent and severity of multidimensional poverty in Pakistan.

Appendix – C

Table A.1

District-wise Non-Income Multi-Dimensional Poverty Incidence
(Percentage of Population, District of Punjab, 2008-09)

Attock	37.10	Mandi Bahuddin	16.77
Bahawalnagar	55.23	Mianwali	32.17
Bahawalpur	55.68	Multan	46.49
Bhakhar	45.97	Muzaffar Garh	62.65
Chakwal	16.12	Nankana Sahib	30.87
D.G.Khan	67.57	Narowal	26.32
Faisalabad	31.97	Okara	40.08
Gujranwala	13.32	Pakpattan	53.37
Gujrat	10.22	RahimYar Khan	56.92
Hafizabad	32.84	Rajanpur	81.13
Jehlum	12.31	Rawalpindi	24.71
Jhang	47.20	Sahiwal	45.33
Kasur	29.68	Sargodha	25.94
Khanewal	46.44	Sheikupura	28.15
Khushab	32.00	Sialkot	16.22
Lahore	22.58	T.T.Singh	23.27
Layyah	52.78	Vehari	45.18
Lodhran	55.31		

Table A.2

District-wise Non-Income Multi-Dimensional Poverty Incidence (Percentage of Population, District of Sindh, 2008-09)

Badin	75.06
Dadu	51.28
Ghotki	57.47
Hyderabad	25.21
Jaccobabad	67.82
Jamshoro	64.60
Karachi	22.01
Kashmore	57.83
Khairpur	50.67
Larkana	53.37
Maitari	54.98
Mir Pur Khas	68.04
Nawabshah	52.63
Nowshero Feroze	34.90
Sanghar	51.81
Shahdadkot	65.66
Shikarpur	54.66
Sukkur	53.60
Tando Allah Yar	49.06
Tando Muda Khan	65.86
Tharparkar	93.95
Thatta	75.04

Table A.3

District-wise Non-Income Multi-Dimensional Poverty Incidence (Percentage of Population, District of Khyber Pakhtunkhwa, 2008-09)

Abbottabad	33.73
Bannu	43.81
Batagram	48.02
Bonair	56.84
Charsada	58.17
Chitral	67.54
D.I.Khan	69.35
Hangu	47.81
Haripur	31.17
Karak	52.73
Kohat	49.65
Kohistan	95.53
Lakki Marwat	57.64
Lower Dir	64.78
Malakand	58.11
Manshera	55.80
Mardan	55.95
Nowshera	39.42
Peshawar	42.05
Shangla	76.50
Swabi	48.30
Swat	73.03
Tank	70.24
Upper Dir	75.10

Table A.4

District-wise Non-Income Multi-Dimensional Poverty Incidence (Percentage of Population, District of Balochistan, 2008-09)

Awaran	87.93
Barkhan	91.09
Bolan/Kacchi	95.28
Chagi	96.04
Dera Bugti	89.14
Gwadar	55.15
Jafarabad	80.19
Jhal Magsi	95.30
Kalat	88.77
Ketch/Turbat	76.89
Kharan	85.54
Khuzdar	80.60
Kohlu	96.06
Lasbilla	80.91
Lorali	82.68
Mastung	84.32
Musakhel	98.89
Nasirabad	87.06
Nushki	83.30
Panjgur	78.67
Pashin	73.14
Qillah Abdullah	86.49
Qillah Saifuallh	92.13
Quetta	46.40
Sibbi	75.76
Washuk	96.16
Zhob	78.02
Ziarat	93.48

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