The Sensitivity of Poverty Trends to Dimensionality and Distribution Sensitivity in Poverty Measures - District Level Analysis for Pakistan

NAJAM, ZAIRA

University of Waikato

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Zaira Najam[a]

The first Sustainable Development Goal is to end poverty and so there is great interest in studying trends in poverty at both the national and sub-national level. A key feature of recent poverty measurement is that conventional (money metric) approaches are being supplemented or replaced by multi-dimensional approaches. There is also increased interest in distributionally sensitive measures. This study examines whether the same trends in poverty are apparent when the analysis uses either the conventional or the multidimensional approach, and distributionally sensitive versus insensitive poverty measures. The analysis is based on six surveys for Pakistan fielded between 2004 and 2015, and considers trends at the national, provincial, and district level. The multidimensional measures show a smoother fall in national poverty rates while the conventional measures show rising poverty up until 2008 and then a sharper fall. Almost half of all districts show opposite trends in poverty, if conventional rather than multidimensional measures are used, in two or more of the five inter-survey spells, irrespective of whether distribution-sensitivity is considered or not. Thus, apparent trends are sensitive to the poverty measurement approach used, so public policy analysts should be cautious in the conclusions they draw from poverty estimates.

Keywords: Multidimensional poverty index, distribution sensitivity, poverty trends

ABBREVIATIONS

HIES: Household Income Expenditure Survey
HH: Headcount Index
MPI-HH: Multidimensional Headcount Index (Alkire and Foster)
MDPI-HH: Multidimensional Distributionally Sensitive Headcount Index
MPI: Multidimensional Poverty Index (Alkire and Foster)
MDPI: Multidimensional Distributionally Sensitive Poverty Index
PG: Poverty Gap
PSLM: Pakistan Social and Living Standards Measurement Survey
SPG: Squared Poverty Gap
SAE: Small Area Estimation

[a] School of Accounting, Finance and Economics, University of Waikato. Email: zairanajam.waikato@gmail.com

Introduction

The first goal set by the United Nations under the Sustainable Development Goals is to "End extreme poverty in all forms by 2030" (United Nations, 2015). Given this goal, there is great interest in estimating poverty trends at the national and sub-national level. A growing feature of these poverty estimates is the use of multidimensional poverty indices, either to replace or supplement conventional (money metric) poverty measures. This trend can be traced to the start of the century when the *Human Development Report* included multidimensional measures of poverty. Specifically, the Oxford Poverty and Human Development Initiative (OPHI) at the University of Oxford along with the Human Development Report Office of the United Nations Development Programme has developed the Multidimensional Poverty Index (MPI), (Alkire, Foster, & Santos, 2011; Alkire & Santos, 2014; UNDP, 2010). This measure is now calculated for more than 100 countries on an annual basis. The MPI was built on the counting approach used in Latin America and Europe (Alkire, Roche, Ballon, Foster, Santos & Seth, 2015; Atkinson, 2003) and also carries forward the work of Sen (1979, 1992, 1997, 1999, 2010) who persuasively argued for more comprehensive conceptualisations of poverty in the form of a set of functioning which one should possess.

The World Bank, on the other hand, whose mission carved in stone at the headquarters in Washington is: "Our Dream is a World Free of Poverty", uses a monetary based poverty measure for analytical and operational work in more than 145 countries. Alongside this, they also recognize the dimensionality of poverty and are committed to fighting poverty in all of its dimensions. The poverty estimation techniques followed by the World Bank and the theory they rely on can be understood from work of Martin Ravillion, the former head of their research department. Ravillion (2016) in his book 'The economics of poverty' mentioned that all the conventional poverty measures which use either income or consumption for poverty estimation

do not imply that all that matters to the poor is income (money). Likewise, Ravillion (2011) is sceptical about the assumptions required to calculate the MPI: "it is one thing to agree that consumption of market commodities is an incomplete metric of welfare—and that for the purpose of assessing poverty one needs to also account for indicators of non-market goods and services—and quite another to say that a single 'poverty' measure should embrace all these things" (p. 17).

It is pertinent to note that both conventional and non-conventional poverty measures can draw some theoretical support from compliance with axioms, of which greatest importance weight is attached to the transfer axiom and redistribution axiom (distribution-sensitivity). This distribution-sensitivity means that the poverty measure is convex in deprivations.[1] Thus, it requires the poverty measure to increase if a transfer is made from poorer person to a relatively less poor person. In distribution-sensitive measures, more weight is given to the individual in poverty estimation if he/she is deprived in more dimensions or is farthest from the poverty line. As new poverty measures are introduced they typically claim compliance with more axioms, especially emphasizing distribution-sensitivity. Specifically, conventional poverty measures evolved from distribution-insensitive measures (Head count Index, Income Gap, Poverty Gap) to distribution-sensitive poverty measures (Squared Poverty Gap, Watt Index, Average Exit Time). The same evolution can be seen in multidimensional poverty measures (based on the counting tradition), from the distribution-insensitive Alkire and Foster (2011) MPI to the Datt (2017) distribution-sensitive poverty measure MDPI. Not only has evolution of the measures been similar, but debate over setting poverty thresholds and the selection of welfare proxies is also similar. For poverty threshold, with conventional measures, the debate is about setting the

[1] For more detail on poverty axioms see Zheng 1993

poverty line. Likewise, with non-conventional measures debate is about setting the poverty cut-off on various dimensions. For welfare proxies, with conventional poverty measures debate is on selection of either consumption or income, while for non-conventional measures the debate is about what welfare dimensions should be considered in the calculations.

With growing interest in monitoring poverty, and the contrast between conventional (money metric) and non-conventional (dimensional) streams, it is worth examining whether the same trends in poverty are apparent when the analysis uses either the conventional or the multidimensional approach, and distributionally sensitive versus insensitive poverty measures. The current paper investigates this question in the context of Pakistan, where the poverty rate seems to have fallen rapidly in the past two decades, going from two-thirds of the population living under the nationally defined poverty line in 2000 to just one-quarter below the line in 2015 (World Bank, 2020). Despite this progress, almost 50 million people were still living under the national poverty line in 2015, and progress at the national level has not been repeated equally in all parts of the country. Therefore, this research examines the poverty trends at national, provincial and district level using conventional and multidimensional poverty measures while also considering the effects of allowing for distribution-sensitivity.

Having reliable information on poverty trends at these various levels helps in devising effective poverty eradicating initiatives (Banerjee and Duflo, 2011). Other studies elsewhere also highlight the importance of poverty estimates at disaggregated levels for effective policy interventions for poverty eradication (Gibson, Datt, Allen, Hwang, Bourke, & Parajuli, 2005). For Pakistan, the sensitivity of poverty estimates to different poverty lines and variables (income or consumption) is studied by various researchers, (Anwar, Qureshi & Ali (2004), Anwar & Qureshi (2002), World Bank (2002), Arif, Nazli, Haq, & Qureshi (2000), Jafri (1999), Amjad &Kemal (1997), Anwar (1996, 1998), Gazadar, Howes, & Zaidi (1994), Malik (1996,

1994), Ercelawn(1990), Ahmad, Ludlow, & Mahmood (1989), Malik (1988), Kruijk and Leeumen (1985), Irfan and Amjad (1984), Naseem (1973, 1977), Mujahid (1978), Malik & Choudhary (1992)). Yet despite this long list, there has not been a comprehensive comparison of conventional and multi-dimensional poverty at different levels and time periods.

In the results presented below, the multidimensional measures show a declining trend in national poverty rates while the conventional measures show fluctuations. The conventional poverty measures have shown an increasing trend up until 2008 which starts to decline after. Sub-nationally, almost half of all districts show opposite trends in poverty, if conventional rather than multidimensional measures are used, in two or more of the five inter-survey spells, irrespective of whether distribution-sensitivity is considered or not. As the trends appear to be sensitive to the poverty measurement approach used, public policy analysts need to be careful when drawing conclusions from poverty estimates.

The specifics of the contribution here are that data from the Pakistan Social and Living Standards Measurement (PSLM) surveys and the Household Income and Expenditure Surveys (HIES), which are fielded in alternate years from 2004-05 to 2016-17, are used to measure poverty at national, provincial and district level. For the conventional poverty measures: the Head Count, Poverty Gap (distribution-insensitive) and Squared Poverty Gap (distribution-sensitive) indicators are estimated. For the non-conventional measures, the Multidimensional Poverty Index which is distribution-insensitive (Alkire & Foster, 2011) and Multidimensional Distribution-sensitive Poverty Index (Datt, 2017) are estimated. The poverty estimates using these measures are calculated for each of six years, generating five spells between the surveys.

Data

There are two sources of data used for the analysis. The first is the PSLM (Pakistan Social and Living Standards Measurement Survey); a multi-topic survey that is representative at national, provincial (n=4), and district level (n=100 districts). Information on topics such as education, health, fertility, and access to basic services is gathered by the PSLM but it does not gather expenditure or consumption data. Consequently, the PSLM is used in Pakistan to calculate non-conventional (multi-dimensional) poverty indices but not any monetary-based conventional measures. Instead, monetary-based measures come from the Household Income and Expenditure Survey (HIES), which collects information on household income, savings, liabilities, and consumption expenditures, for a sample about one-fifth as large as the PSLM sample (see Table 1). Consequently, the only published conventional, money-metric indicators of poverty are for the national and provincial level.

In order to create a district-level database of both conventional and multidimensional poverty measures, I use survey-to-survey imputation based on the small area estimation (SAE) method of Elbers, Lanjouw and Lanjouw (2003). This enables imputed values of consumption to be developed for all households in the PSLM samples, so that both multidimensional and conventional money-metric poverty measures can be calculated at the district level. Details of the SAE procedure are explained in the subsequent section but a point to immediately note is that the PSLM and HIES surveys either overlap in time or are from nearby months, improving imputation quality (Table 1). Also, as demarcation of districts changed over the last 15 years, the geography of districts as it was in 2004 is used for the analysis. Typically this means that districts that have subsequently been split off from their parent district are refolded back into that parent district to give a consistent set of spatial units from 2004 to 2014. The details on the concordances to create this consistent geography are provided in Appendix A.

2.1 Conventional Poverty Indices

The conventional poverty indices calculated are the Headcount, Poverty Gap, and Squared Poverty Gap, all based on consumption rather than income as the welfare proxy.[2] Given the aim to calculate these indices at district level while existing analyses from the HIES data give conventional poverty measures only at the national and the provincial level, the survey-to-survey SAE imputation method is used. Specifically, the consumption of households in the HIES sample is modelled using a set of 'X' characteristics that have the same distribution in the PSLM, and the coefficients from these models are then applied to the PSLM data to predict consumption for households in the PSLM sample. Dang, Jolliffe, & Carletto (2019) use data for Vietnam to show the robustness of this type of survey-to-survey imputation.

A key requirement of this method, explained in the work of Tarozzi (2007) is that the set of 'X' characteristics is comparable across both surveys, in terms of having the same definitions and the same distributions (given they come from the same population). In the case of Pakistan, a key feature that helps with the success of the imputation method is that the HIES and PSLM are conducted at almost the same time, with fieldwork for each survey typically only a few months apart. Therefore I have used HIES data from 2004-05, 2005-06, 2007-08, 2010-11, 2011-12, and 2013-14 to impute consumption for households in the PSLM that were surveyed in 2004-05, 2006-07, 2008-09, 2010-11, 2012-13, 2014-15 respectively. The details on the survey period, the sample size, and the predictive accuracy of the imputation models are reported in Table 1. The imputation models explain up to three quarters of the variation in HIES household consumption, and so should be a good basis for predicting the consumption of households in the PSLM, and then calculating poverty statistics from these predicted data.

[2] For debate in the literate about these alternative welfare indicators see Ravallion (2015)

Table 1
Survey Details and R Sq of Beta Model (Rural and Urban) from SAE for all six years

Years	Surveys	Survey Period	Sample Size			R Sq Beta model	
			Total	Urban	Rural	Rural	Urban
2004-05	PSLM	Sep 04 - Mar 05	76520	27144	49376	45%	67%
	HIES	Jul 04 - Jun 05	14673	5794	8879		
2005-06	PSLM						
	HIES	Jul 05 - Jun 06	15453	6240	9213		
2006-07	PSLM	Oct 06 -May 07	73953	26273	47680	43%	50%
	HIES						
2007-08	PSLM						
	HIES	Jul 07 -Jun 08	15512	6255	9257		
2008-09	PSLM	Aug 08 - Jun 09	75772	26975	48797	43%	50%
	HIES						
2009-10	PSLM						
	HIES						
2010-11	PSLM	Jul 10 - Jun 11	77488	27360	50128	50%	76%
	HIES	Jul 10 - Jun 11	16341	6589	9752		
2011-12	PSLM						
	HIES	Sep 11 - Jun 12	15807	6743	9064		
2012-13	PSLM	Oct 12 - Jun 13	75516	26598	48918	44%	54%
	HIES						
2013-14	PSLM						
	HIES	Aug 13 - Jun 14	17985	6234	11751		
2014-15	PSLM	Oct 14 - Jun 15	78635	13965	64670	63%	75%
	HIES						

The PSLM and HIES variables examined for overlapping distributions are broadly classified into following categories; household size, gender and years of schooling of the household head, the number of people in different age brackets, employment status of family members, the number of females in the household, ownership of various durable assets, access to services, dwelling status and facilities, and regional dummies.[3] For the selected variables, the SAE technique of Elbers, Lanjouw and Lanjouw (2003) is followed, which is implemented through STATA commands from Nguyen, Corral, Azevedo, & Zhao, (2017). The dependent

[3] The variables included for each survey year and sector (urban and rural) are available from the author. This satisfies the second prerequisite of same distribution for survey-to-survey imputation.

variable Y is used in logarithmic form which accounts for the skewed distribution of the consumption data (Haslett Isidro, & Jones, 2010).

The SAE model consists of these two equations

$$\ln Y = \alpha + \beta X + \mu \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

where Y represents consumption per adult equivalent,[4] X is the set of characteristics, and the error term μ has two components (a cluster specific component and an idiosyncratic component).

$$\mu_{ch} = \eta_c + e_{ch} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

The subscript c stands for clusters in the survey and h stands for households. The households in the cluster are not independent of each other and the SAE method takes account of this. In both surveys the clusters are the primary sampling units.

The first stage model (equation 1) of the SAE is estimated both at the national level and the sectoral (rural and urban) level, separately for each of the six years. In the second stage after imputing parameters into the PSLM sample, predicted consumption is used to calculate poverty estimates at the district level. The predicted consumption data used in the calculation are from the model estimated for the regional domains, as Demombynes and Ozler (2005) note that estimating models for urban and rural domains separately provides better predictions. Also, in our case, as shown in figure 1 the actual average per capita consumption from HIES falls within the 95% confidence intervals of the predicted average per capita consumption from PSLM. As Tarozzi (2007) suggested as a robustness check for the simulations, the distributions

[4] The numbers of individuals with age below 18 years have given 0.8 weightage in calculation of household size whereas number of individuals with age above 18 years have given full weightage of 1

of consumption from HIES and the imputed consumption should be same.

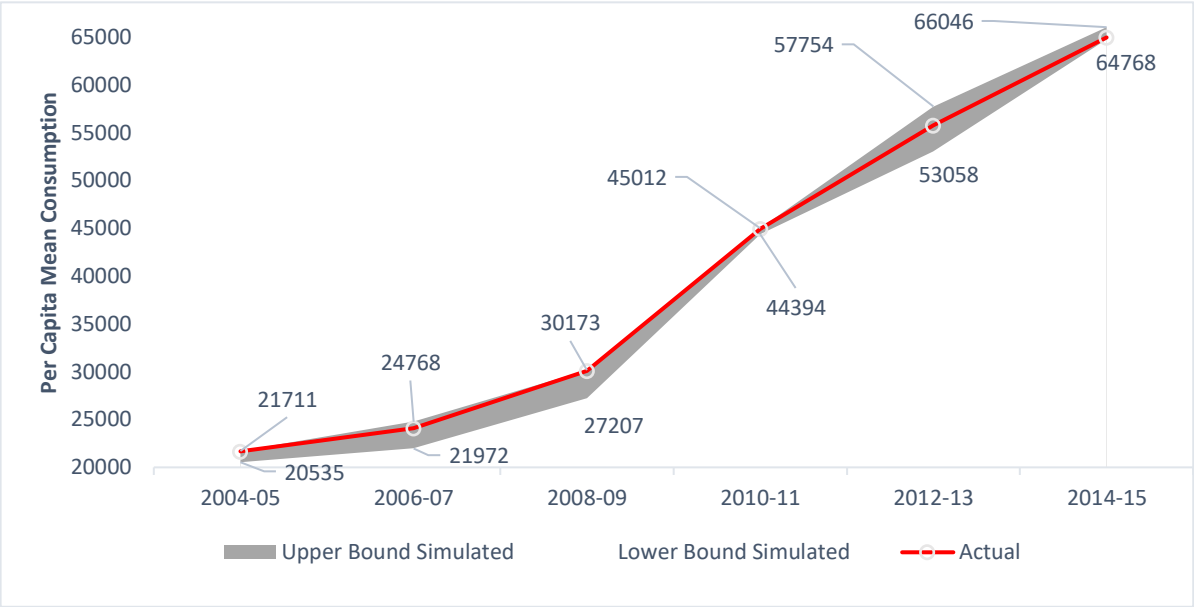

Figure 1 95% Confidence Interval for Simulated Mean per Capita Consumption and Actual Mean Per Capita Consumption

As another cross-check, figure 2 shows the Headcount Index calculated from actual consumption data from HIES and from simulated consumption data from PSLM for provinces. Fairly similar changes over time are observed with only slight variations (figure 2).

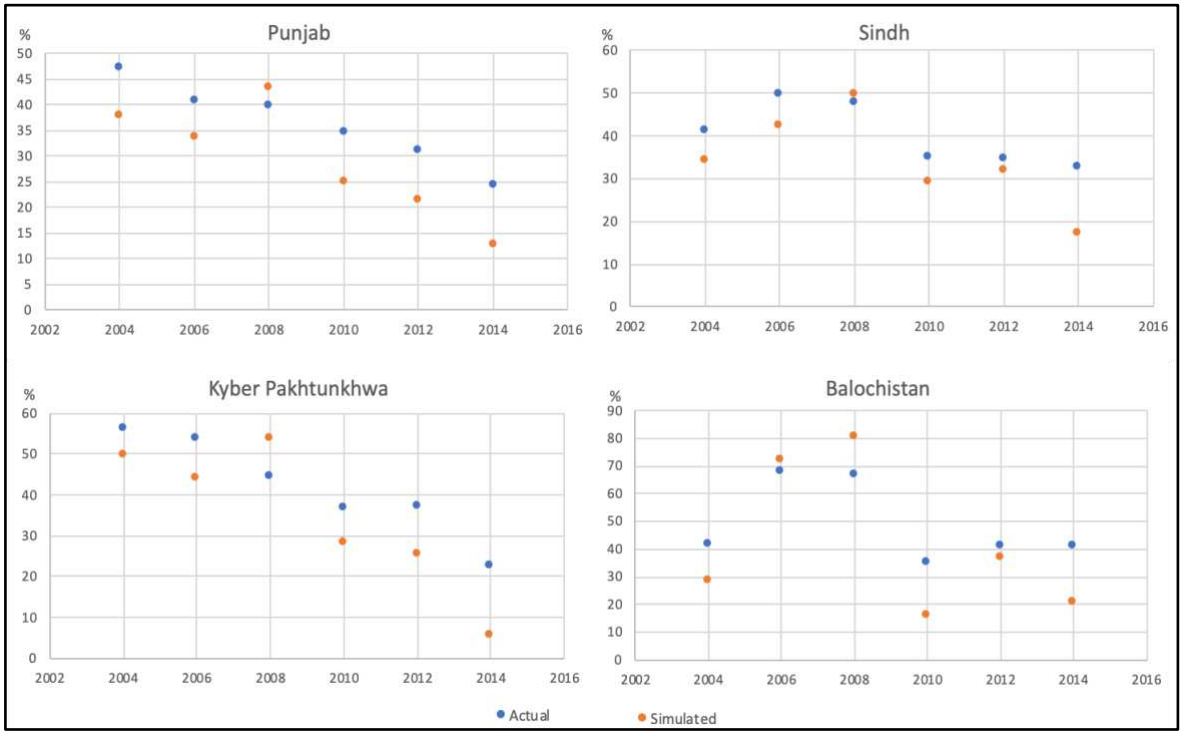

Figure 2 Poverty Headcount from HIES (Actual) and PSLM (Simulated) Data for Provinces

The adjusted R^2 from the SAE models range from 45 percent to 75 percent.[5] The key summary statistics from the SAE models are in Appendix B. The ratio of the cluster effect to the total mean squared error, which is an important diagnostic for the success at reducing the cluster correlated effect that will impair precision of the predictions, ranges from 0.1 to 0.4.

The ultimate goal of the SAE models is to enable trend analysis for conventional and non-conventional poverty measures, at district level. The analysis uses the national poverty line calculated by the Government of Pakistan, and adjusted by the CPI for the years that the poverty line was not given.[6] The calculation of the national poverty line is based on Cost of Basic Needs (CBN) method. The poverty lines used for the study are at figure 3.

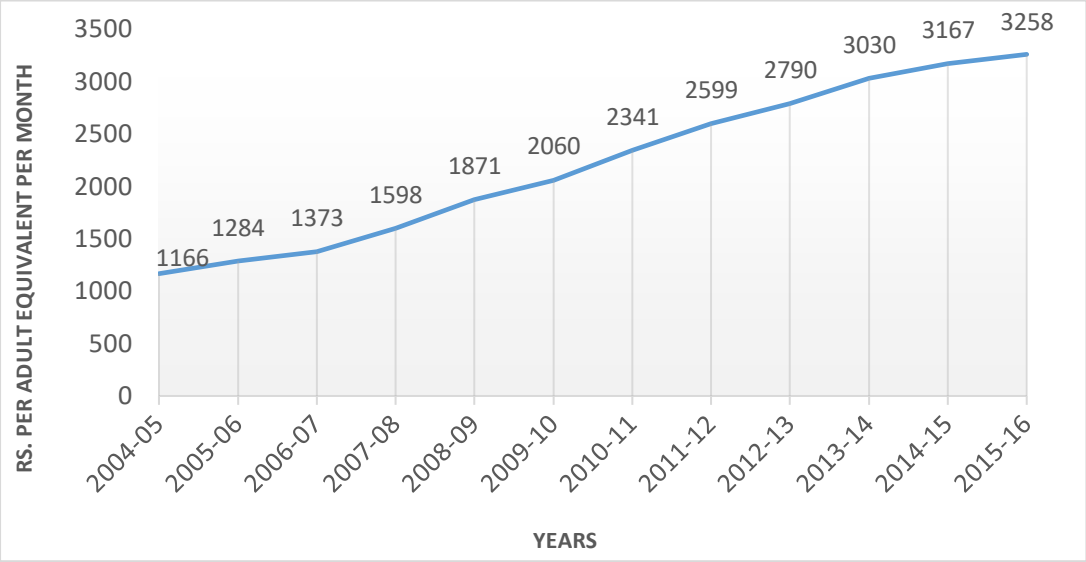

Figure3 Poverty Line (Rs. Per adult equivalent per month)

In terms of conventional poverty indices, three are calculated for the analysis:

The Head count index HH= $\left({}^{q}/_{n}\right) \times 100$

[5] The detailed SAE output for all the six years at urban and rural domains is available from author

[6] Planning Commission Pakistan (2016), National Poverty Report Pakistan 2015-16

where q is the number of poor people living below the poverty line and n is the size of population. The headcount index is the proportion of persons living below the poverty line. It is easy to interpret but does not satisfy transfer and redistribution axioms (explained earlier).

$$\text{The Poverty Gap index, PG} = \frac{\left(\sum_{i=1}^{n}\left(\frac{Z - Y_i}{Z}\right) \times 100\right)}{n}$$

where Z is the Poverty Line and Y_i is individuals i's consumption. This index is the average proportional shortfall from the poverty line as a ratio of poverty line (if consumption is greater than poverty line then it is set equal to zero) averaged over the population. While it measures the average depth of poverty it does not satisfy the transfer axiom and redistribution axiom.

$$\text{The Squared Poverty Gap index, SPG} = \frac{\left(\sum_{i=1}^{n}\left(\frac{Z - Y_i}{Z}\right)^2 \times 100\right)}{n}$$

The squared poverty gap is a distributionally sensitive measure.

2.2 Non-Conventional Poverty Indices

The non-conventional poverty indices used are the MPI, Alkire and Foster (2011) Multidimensional Poverty Index and Datt (2017) Multidimensional Distribution-sensitive Poverty Index, MDPI. Also the headcounts (No. of poor people) using both MPI and MDPI are calculated, MPI-HH and MDPI-HH respectively. For these measures, the list of 15 indicators come under three broad dimensions: Education, Health and Living Standards are considered. Under the dimension of education it relies on years of schooling, child school attendance, and Educational quality. Under the dimension of health it relies on access to health Facilities/clinics/basic health units (bhu), immunization, Ante-natal care, and assisted delivery.

Under the dimension of living standards the sub-indicators used are water, sanitation, walls, overcrowding, electricity, Cooking fuel, assets, and a land/livestock.

Both the multidimensional poverty indices are weighted averages of their indicators. Like the poverty line, the weights used for aggregation are the ones incorporated by Government of Pakistan in their official report,[7] so that a legit comparison can be carried out. It has assigned 1/3 of the MPI's total weight to each of the three core dimensions: education, health and living standards. The nested weighted structure is used for all the sub-indicators (Figure 4).

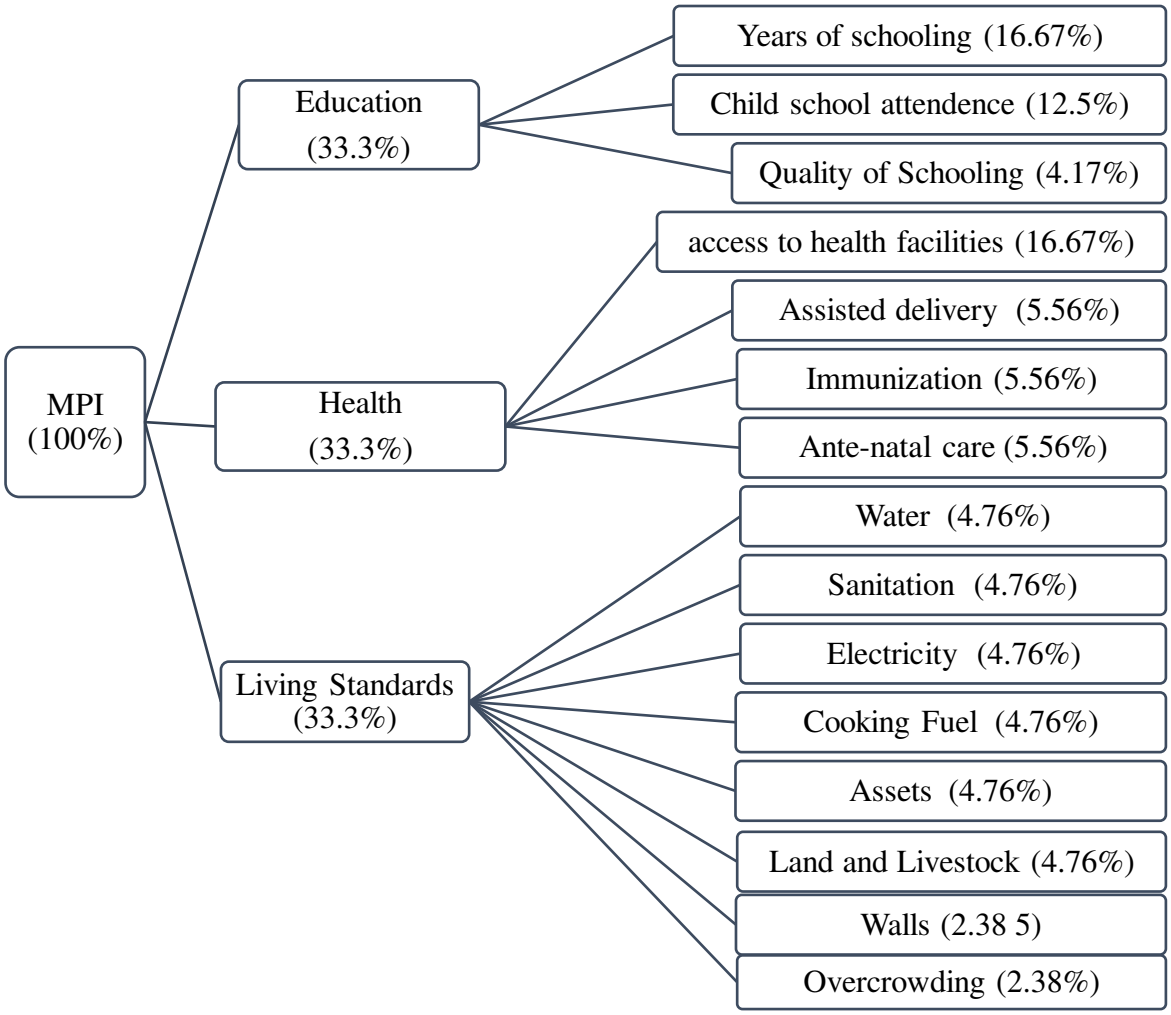

Figure 4 Nested Weighted Structure for Multidimensional Indicators

[7] UNDP Pakistan. (2016). "Multidimensional poverty in Pakistan" in collaboration with Ministry of Planning, Development and Reforms, Pakistan.

2.2.1 Multidimensional Poverty Index (MPI)

$$\text{MPI} = \text{M}(\alpha, \text{k}; \text{y}) = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{1}{d}\sum_{j=1}^{d} g_{ij}^{\alpha}\right) I_i^k \times 100.$$

For n individuals and d total dimensions, $g_{ij}^{\alpha}=\left(1 - y_{ij}/z_j\right)^{\alpha} I_{ij}$ for $\alpha \geq 0$ is defined as the indicator for deprivation in dimension j for an individual i where z_j is the cut-off point for the dimension j. $I_i^k = I(C_i \geq k)$ is defined as the poverty indicator in which k is the cut-off point for the number of dimensions in which an individual has to be deprived to be counted as poor and C_i is the sum of dimensions in which an individual i is deprived. $C_i = \sum_{j=1}^{d} I_{ij}$

The Alkire-Foster (AF) methodology uses dual cut off points. The first cut-off within a dimension is to identify deprivation in the dimension. If an individual is below the certain cut-off point in an indicator she/he is referred to as deprived in that dimension. The second cut-off identifies the individual as poor. In the present study if the aggregate score of an individual is above 33 percent they are termed as poor, that is the second cut-off point.[8] The first cut-off point for all the indicators are as follows:[9]

For the dimension of education: Years of schooling; deprived if no man or no woman in the household above 10 years of age has completed five years of schooling. Child School attendance; deprived if any school-aged child is not attending school (between 6 and 11 years of age). School quality; deprived if any child is not going to school because of quality issues

[8] The MPI poverty estimates for zero percent second cut-off point are reported in the appendices but not discussed in the text because there is 0.997 correlation between MPI 0 cut-off and MPI 33% cut-off point.

[9] These deprivation cut-offs for the dimensions are acknowledged by Govt. of Pakistan in the report, UNDP Pakistan. (2016). "Multidimensional poverty in Pakistan" in collaboration with Ministry of Planning, Development and Reforms, Pakistan

(not enough teachers, schools are far away, too costly, no male/female teacher, substandard schools), or is attending school but remains dissatisfied with service.

In the dimension of health: Access to health facilities like Basic Health Units (BHU); deprived if health facilities are not used at all, or are only used once in a while, because of access constraints (too far away, too costly, unsuitable, lack of tools or staff, not enough facilities). Immunization; deprived if any child under the age of 5 is not fully immunized according to the vaccination schedule (households with no children under 5 are considered non-deprived). Ante-natal care; deprived if any woman in the household who has given birth in the last three years did not receive ante-natal check-ups (household with no woman who has given birth are considered non-deprived). Assisted delivery; deprived if any woman in the household has given birth in the last three years attended by untrained personnel (family member, friend, traditional birth attendant, etc) or in an inappropriate facility (home, other) (households with no woman who has given birth are considered non deprived).

In the dimension of living standards: Water; deprived if the household has no access to an improved source of water according to MDG standards, considering distance (less than a 30 min return trip) and type (tap water, hand pump, motor pump, protected well, mineral water). Sanitation; deprived if the household has no access to adequate sanitation according to MDG standards (flush system, privy seat). Walls; deprived if the household has unimproved walls (mud, uncooked/ mud bricks, wood / bamboo, other). Overcrowding; deprived if the household is overcrowded (four or more people per room). Electricity; deprived if the household has no access to electricity. Cooking fuel; deprived if the household uses solid cooking fuels for cooking (wood, dung cakes, crop residue, coal / charcoal, other). Assets; deprived if the household does not have more than two small assets (radio, tv, iron, fan, sewing machine, video cassette player, chair, watch, air cooler, bicycle) OR no large asset (refrigerator, air conditioner,

tractor, computer, motor cycle), AND has no car. Land and livestock (only for rural areas); deprived if the household is deprived in land by having less than 2.25 acres of non-irrigated land or less than 1.125 acres of irrigated land and deprived in livestock by having less than two cattle, fewer than three sheep / goats, fewer than five chickens and no animal for transportation (urban households are considered non-deprived).

2.2.2 Multidimensional Poverty Headcount Index (MPI-HH)

$$\text{MPI-HH} = \left[\frac{1}{n}\sum_{i=1}^{n} I_i^k \cdot\right] \times 100$$

Where *n* is the number of individuals and $I_i^k = I(C_i \geq k)$ is defined as the poverty indicator. *k* is the cut-off point for the number of dimensions in which an individual has to be deprived to be counted as poor. $I_i^k = 1$ if $C_i \geq k$ or else $I_i^k = 0$.

2.2.3 Multidimensional Distribution-Sensitive Poverty Index (MDPI)

$$\text{MDPI} = \text{M}(\alpha, \beta; y) = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{1}{d}\sum_{j=1}^{d} g_{ij}^{\alpha}\right)^{\beta} \times 100 \qquad \text{for } \alpha \geq 0 \text{ and } \beta \geq 1$$

For values of $\beta > 1$, the measure $M(\alpha, \beta; y)$ satisfies a cross-dimensional convexity axiom. The value of β can be interpreted as parameterizing the relative weight accorded to the multiplicity of deprivations (i.e., to the joint density of deprivations relative to the marginal distributions of single deprivations). Where;

$$g_{ij}^{\alpha} = (1 - \frac{y_{ij}}{z_j})^{\alpha} I_{ij} \quad for\ \alpha \geq 0$$

$I_{ij} = I(y_{ij} < Z_j)$ 0 – 1 deprivation indicator function.

and y_{ij} is the achievement of individual *i* in dimension *j* and z_j is the deprivation *j* cutoff point. $I_{ij}$is zero when y_{ij}>z_j and 1 when $y_{ij} \leq z_j$ .Datt (2017) used union approach for poverty estimates so it does not require second cut-off point. The first cut-offs used for the indicators are the same as of the MPI discussed above.

2.2.4 Multidimensional Distribution-Sensitive Poverty Headcount Index (MDPI-HH)

$$\text{MDPI} - \text{HH} = \left[\frac{1}{n}\sum_{i=1}^{n} (I_i) \right] \times 100$$

Where *n* is the number of individuals. $I_i = I(\sum_{j=1}^{d} I_{ij} > 0)$ 0 – 1 poverty indicator function. I_i = 0 when $\sum_{j=1}^{d} I_{ij} = 0$ and I_i = 1 when $\sum_{j=1}^{d} I_{ij} > 0$. $I_{ij}$is 0 when y_{ij}>z_j and is 1 when $y_{ij} \leq z_j$. y_{ij} is the achievement of individual *i* in dimension *j* and z_j is the deprivation *j* cutoff point.

Poverty Trends

Using the seven poverty indicators described above, we can now consider the poverty trends for Pakistan using conventional and non-conventional measures and allowing for the distribution-sensitivity. At the National level (figure 5), from 2004 to 2014, there seems to be a fairly smooth decreasing trend for the non-conventional poverty indices (MPI and MDPI) whereas the conventional poverty indices (PG,SPG,HH) showed fluctuations with a rising poverty rate through until 2008 and a sharp declining trend following thereafter.

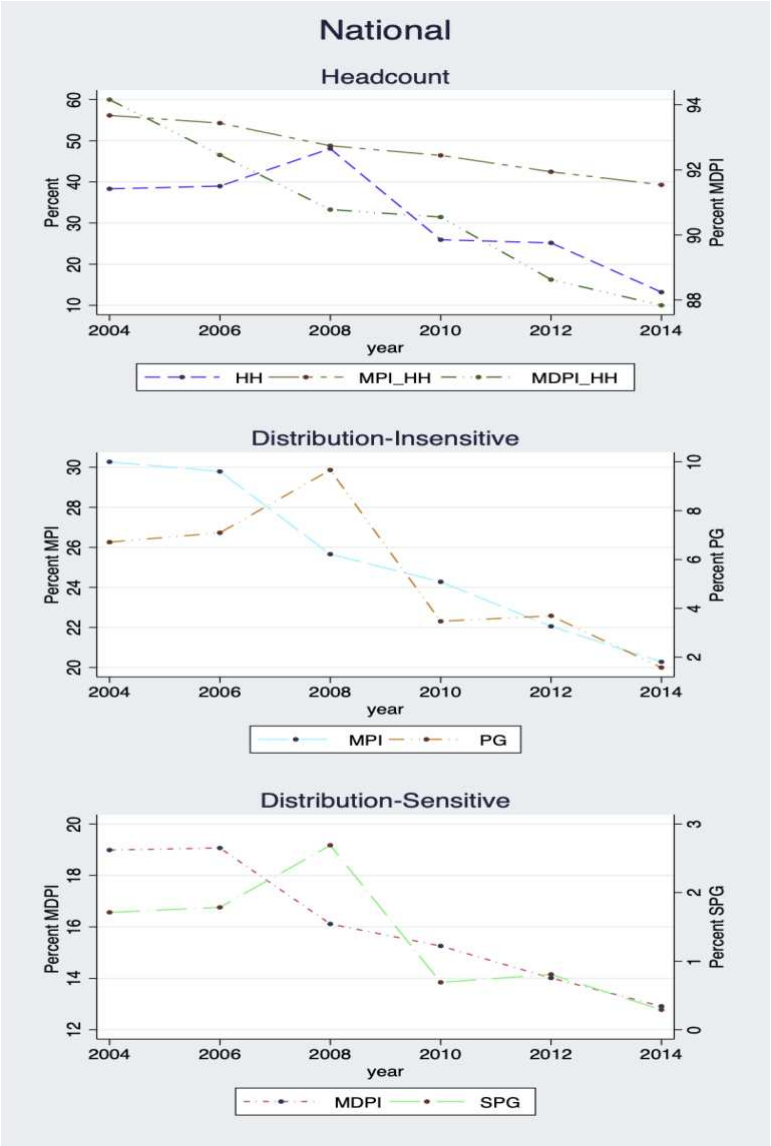

Figure 5 Poverty Trends at National Level

The conventional Headcount (HH) shows less poverty than the non-conventional Headcount Index (MPI_HH), despite more volatility in the HH index. Thus, some people who are not poor in terms of money are poor in multidimensional terms, including usage/access to services and facilities. This may show trade-offs between consumption and other dimensions of wellbeing. A second feature from figure 5 is that the non-conventional headcount indices (MPI-HH and MDPI-HH) show a more smoothly declining trend over all six survey years while there is a rise in the conventional headcount poverty index up until 2008 and then a sharp decline thereafter. So, the two types of head count indices depict different trends.

For Pakistan, the fluctuations in conventional monetary poverty measures, especially the peak in 2008, are due to higher food prices which reduces the real value of consumption. World prices for some key staple foods tripled in 2007/08 which especially affected poverty Asia (Gibson and Kim, 2013). Likewise, Haq, Nazli and Meilke (2008) show Pakistan experienced higher poverty due to effects of domestic food price inflation. This short-term shock is not translated into the trend of non-conventional poverty measures (MPI and MDPI), which is decreasing resulting from increased access to services as a result of long-term infrastructure development. Thus, one contrast between conventional and multidimensional poverty may be that monetary indicators can fluctuate more in the short-term due to price and income shocks while the greater number of dimensions considered by the non-conventional measures might pick up longer term improvements in living standards and access to services.

In part because of the different time horizons that conventional and non-conventional poverty measures respond to, we generally see that for given spells between surveys the two types of indicator are not moving in the same direction. Details on these differences by spell in these poverty estimates can be seen in appendix E for all the districts, and in appendix F for the provincial and national level.

For many of the inter-survey spells these measures move in the opposite direction whether we consider the distribution-insensitive class of poverty measures (PG and MPI) or the distribution-sensitive class (SPG and MDPI). Thus, if we consider convexity in dimensions and severity in money deprivation, meaning that if we put more weight on individuals farthest from the poverty line and those deprived in more dimensions, the trend in the conventional poverty measure (SPG) is opposite to the trend in the non-conventional poverty measure (MDPI), for at least two spells compared at the national level. But if we do not give more weight to individuals who are farthest from the poverty line and those who are deprived in more dimensions, the trend in the conventional poverty measure (PG in this case) is opposite to the trend in the corresponding non-conventional poverty measures (MPI) for the majority of spells (at least 3 out of 5) at the national level (Table 2).

Table 2

Number Of Spells (Out Of 5) For Which Poverty Measures Are Moving In the Opposite Direction at the National Level

DOMAIN	PG & SPG	PG & MPI	SPG & MDPI	MPI & MDPI
NATIONAL	0	3	2	1

If we just consider conventional poverty indices (HH, PG, SPG), the trends are exactly the same even if we give more weight to individuals farthest from the poverty line (that is, allowing for distributional sensitivity). In contrast, if we give more weight to the individuals who are deprived in more dimensions, then with the non-conventional poverty measures (MPI and MDPI) it will show opposite trends for one of the five spells, at the national level.

A corresponding analysis of whether trends diverge under conventional versus under the non-conventional poverty measures, but this time at the provincial level is reported in Table 3. It is especially distributionally sensitive measures that show diverging trends.

Table 3

Number of Spells (Out of 5) for which Poverty Measures are Moving in Opposite Direction at Provincial Level

DOMAIN	PG & SPG	PG & MPI	SPG & MDPI	MPI & MDPI
KPK	0	1	1	0
PUNJAB	1	1	2	0
BALOCHISTAN	0	2	1	1
SINDH	0	2	2	0

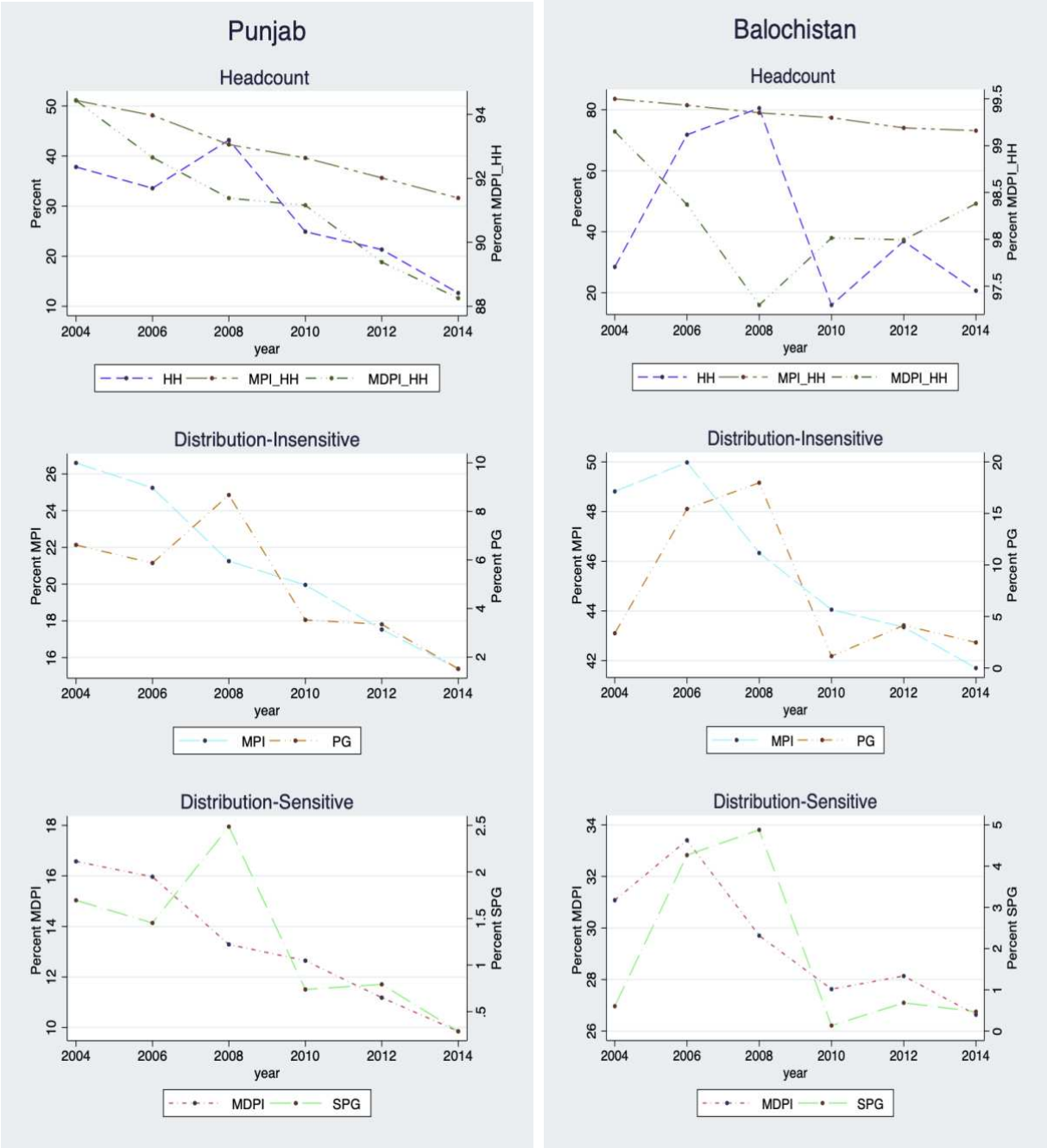

Figure 6 *Poverty Trends at Provincial Level (Punjab and Balochistan)*

The trends in poverty for Punjab, the most developed province (Pasha, 2015), and Balochistan, which is perhaps the least developed (World Bank, 2008), are shown in figure 6. In Punjab, the distribution-sensitive conventional measure (SPG) and the non-conventional measure (MDPI) show opposite trends in two spells. For the distribution-insensitive class (PG and MPI), just one spell showed opposite movement. Thus, if more weight goes on individuals farthest from the poverty line or having more sets of dimensional deprivation, the conventional poverty measures are more likely to shows opposite movement in trends than non-conventional measures. Also, the multidimensional measures showed continuously declining trend in the headcount but the money-metric measures showed volatility over time. Thus, a more developed province shows that poverty trends are sensitive to using measures that respect the axiom of distribution-sensitivity (sensitive to how far people are from poverty line/cut-off).

For Balochistan, the choice of poverty measure (conventional or non-conventional) showed substantial difference in trends (PG and MPI) if we do not consider giving more weight to people living far from poverty line/cut-off. MPI showed declining trend after 2006 whereas volatility is observed in money-metric poverty index (PG). People might be progressing in terms of accessing services/facilities but experience volatility in their monetary status. But if we consider distribution-sensitivity in poverty measures (SPG and MDPI) the trend is the same except for one spell. The fact that if we give more weight to people who are far from the poverty cut-off, the multidimensional measures showed variations highlighting the increase in severity of dimensional deprivation. Because the distribution-sensitive dimensional poverty measure (MDPI) picks up on the fact that the increasing access to services/facilities, which is declining MPI, is not uniform. Giving more weight to people who are farthest from poverty cut-off has induced a slight increase in trend post 2006 in MDPI. In the case of least developed province

the poverty trends are sensitive to the selection of poverty measures (conventional or non-conventional) if we consider distribution-insensitivity.

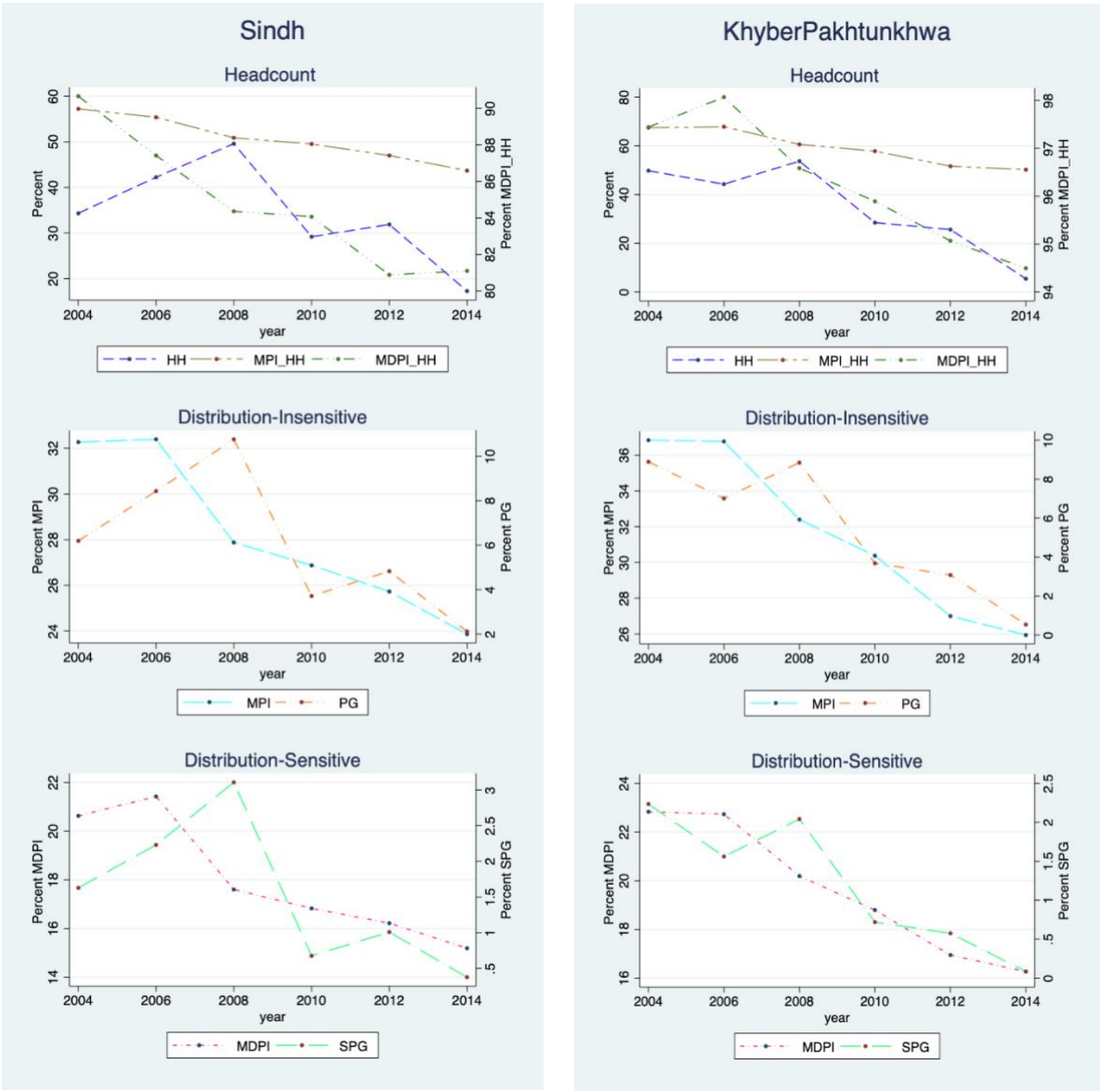

Figure 7 *Poverty Trends at Provincial level (Sindh and Kyber Pakhtunkhwa)*

For the province of Kyber Pakhtunkhwa (the third most populous), apart from one spell the movements in the conventional and the non-conventional poverty measures are the same irrespective of whether the poverty measures are distribution-sensitive (figure 7). Both types of measure show declining trends except for 2008 where money-metric poverty rose. Finally, for Sindh (the 2nd most populous province), both class of measures show opposite movements in two of the spells irrespective of distribution-sensitivity. In all the cases, conventional poverty measures have shown the most volatility while the non-conventional poverty measures show a smoother decreasing trend overall. In some cases the dimensional poverty measure has picked up on the severity in dimensional deprivation and showed volatility/ increase in the trend.

In sum, at the National and Provincial level, sensitivity of poverty trends to the choice of poverty measures (convention and non-conventional) is evident. Researching the poverty trends at the more disaggregated level, district, shows the same results. About 70 percent of the districts in all four provinces have showed opposite movement in trends for at least 2 spells out of 5. In total around 40 percent of districts have shown opposite movement in poverty trends for at least 3 spells using conventional and non-conventional poverty measures (table 4).

Table 4

Percentage of Districts Showing Opposite Movement in Poverty Trends using Different Poverty Measures for at Least 3 Spells and at least 2 Spells (Out of 5)*

DOMAIN	PG & SPG	PG & MPI	SPG & MDPI	MPI & MDPI
BALOCHISTAN	0	38 (77)	35 (73)	0 (4)
KPK	0	43 (78)	43 (65)	0 (4)
PUNJAB	0	37 (77)	43 (86)	0 (3)
SINDH	0	63 (75)	50 (81)	0 (0)
NATIONAL	0	43 (77)	41 (76)	0 (3)

* percentage of districts with opposite moments for at least 2 spells out of 5 are shown in parenthesis ()

When results from the three spatial levels studied – national, provincial, and district – are put together, it is clear that the smooth reduction in poverty according to non-conventional multidimensional measures is not reflected in a corresponding pattern of smoothly falling poverty when measured with conventional monetary indicators. This difference in the trends for these two types of measures suggests that improvements in access to services and facilities, which is picked up by the multidimensional measures, is not reflected in rising values of real consumption, at least in the short term. Likewise, if we consider distribution-insensitive measures (PG and MPI), the opposite trend in poverty rates when using conventional versus non-conventional measures is found in over three-quarters (77%) of districts. The districts that show opposite trends in poverty changes when using conventional versus non-conventional measures are mapped in Appendix C (Figure C1 and C2). The districts that show divergent trends for a majority of inter-survey spells can be found in all parts of the country.

The year-by-year spatial patterns in each of the seven poverty measures that I consider are mapped in Appendix D. While there is heterogeneity within provinces, with some districts having higher poverty rates than others, a general spatial pattern is that poverty rates are highest in the south and west of Pakistan, which includes the provinces of Balochistan, parts of Sindh and south parts of Punjab. Despite the reduction in poverty rates between 2004 and 2014, these spatial patterns are still apparent, in both the conventional and the non-conventional poverty measure

Conclusions

Public policy analysts depend on poverty measures to identify the poor, in terms of areas and also individuals, and to monitor trends in poverty over time. The interest in poverty trend monitoring in developing countries is especially because Sustainable Development Goals are embedded in public policy at both national and regional level. Recently, there has been a surge in the use of non-conventional multidimensional measures of poverty that either replace or supplement the conventional monetary measures. Along with this change, there has been a growing focus on distribution-sensitive classes of poverty measures that can provide richer information on disparities in living standards. These methodological changes are salient for Pakistan, which increasingly relies on multidimensional poverty measures coming from the biennial Pakistan Social and Living Standards Measurement surveys.

This study examines whether the same trends in poverty are apparent if an analysis uses either the conventional or the multidimensional approach, and also if using distributionally sensitive versus insensitive poverty measures. The empirical part of the analysis relies on linking multi-topic surveys fielded every second year (from 2004 to 2014) to household expenditure surveys fielded in alternating (or sometimes overlapping) years. With this linkage I am able to create a longitudinal database at the district, provincial and national level, that has poverty measures from both the conventional and non-conventional approaches in six different years, giving five inter-survey spells that are the focus of many of the results.

The multidimensional measures show a smoother fall in national poverty rates while the conventional measures show rising poverty up until 2008 and then a sharper fall. Almost half of all districts show opposite trends in poverty for more than two of the five spells between the surveys when using the conventional approach rather than the multidimensional poverty

measures, irrespective of whether distribution-sensitivity is considered or not. One reason for the different trends is that real consumption may fluctuate even as there is better access to services and facilities which gives a declining poverty trend for multidimensional measures. The conventional poverty measures are receptive to inflation shocks in the economy, such as the food price shocks in 2008, which multidimensional poverty measures are not.

In addition to apparent temporal changes in poverty rates – or the direction of these changes – such as poverty seeming to increase or decrease, being sensitive to whether poverty is measured using conventional or non-conventional measures, the cross-sectional pattern of poverty is also affected. For example, many of the districts in the top-tier of income deprivation are not in the top-tier of multidimensional deprivation. The most developed province Punjab, where the poverty trends seem to go in the same direction if using distribution-insensitive class of measures shows discordant trends if the distribution-sensitive class of measures are used.In other words, if we consider convexity in deprivation then conventional and non-conventional measures are moving in different directions. Observing declining poverty rate in terms of access to services and facilities does not assure declining poverty rate in terms of consumption/income status.

Thus, apparent trends are sensitive to the poverty measurement approach used, so public policy analysts should be cautious in the conclusions they draw from poverty estimates. If policy makers are relying on multidimensional poverty measures, to analyze poverty-stricken regions, in the case of Pakistan, they will see a reduction in headcount poverty due partly to improved access to services. But if they rely on money-metric poverty measures they will see that there is volatility in poverty trends. The sensitivity of poverty trends to dimensionality and distribution-sensitivity in poverty measures requires circumspection in conclusions drawn from poverty analysis.

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Appendix A

Availability of Districts Data and the Old Definition of Districts

Districts	2014	2012	2010	2008	2006	2004
			Punjab			
Attock	√	√	√	√	√	√
Rawalpindi	√	√	√	√	√	√
Jehlum	√	√	√	√	√	√
Chakwal	√	√	√	√	√	√
Sargodha	√	√	√	√	√	√
Bhakhar	√	√	√	√	√	√
Khushab	√	√	√	√	√	√
Mianwali	√	√	√	√	√	√
Faisalabad	√	√	√	√	√	√
Jhang	√	√	√	√	√	√
T.T. Singh	√	√	√	√	√	√
Chiniot	Jhang	Jhang	Jhang			
Gujranwala	√	√	√	√	√	√
Gujrat	√	√	√	√	√	√
Sialkot	√	√	√	√	√	√
Hafizabad	√	√	√	√	√	√
Mandi Bahuddin	√	√	√	√	√	√
Narowal	√	√	√	√	√	√
Lahore	√	√	√	√	√	√
Kasur	√	√	√	√	√	√
Okara	√	√	√	√	√	√
Sheikhupura	√	√	√	√	√	√
Nankana Sahib	sheikhupura	sheikhupura	sheikhupura	sheikhupura		
Vehari	√	√	√	√	√	√
Sahiwal	√	√	√	√	√	√
Multan	√	√	√	√	√	√
Khanewal	√	√	√	√	√	√
Pakpatten	√	√	√	√	√	√
Lodhran	√	√	√	√	√	√
D. G. Khan	√	√	√	√	√	√
Rajanpur	√	√	√	√	√	√
Layyah	√	√	√	√	√	√
Muzaffar Garh	√	√	√	√	√	√
Bahawalpur	√	√	√	√	√	√
Bahawalnagar	√	√	√	√	√	√
Rahim Yar Khan	√	√	√	√	√	√
Islamabad	√	√	√	√	√	√
			SINDH			
Khairpur	√	√	√	√	√	√
Sukkur	√	√	√	√	√	√
Nawabshah	√	√	√	√	√	√
Nowshero Feroze	√	√	√	√	√	√
Ghotki	√	√	√	√	√	√
Jacobabad	√	√	√	√	√	√
Kashmore	jacobabad	jacobabad	jacobabad	jacobabad		
Shikarpur	√	√	√	√	√	√
Larkana	√	√	√	√	√	√
Shahdadkot	larkana	larkana	larkana	larkana		
Dadu	√	√	√	√	√	√

Jamshoro	Dadu	Dadu	Dadu	Dadu		
Hyderabad	√	√	√	√	√	√
Matiari	Hyderabad	Hyderabad	Hyderabad	Hyderabad		
Tando Allah Yar	Hyderabad	Hyderabad	Hyderabad	Hyderabad		
Tando Muhammad Khan	Hyderabad	Hyderabad	Hyderabad	Hyderabad		
Badin	√	√	√	√	√	√
Thatta	√	√	√	√	√	√
Sanghar	√	√	√	√	√	√
Mir Pur Khas	√	√	√	√	√	√
Umer Kot	Mir Pur Khas	Mir Pur Khas	Mir Pur Khas			
Tharparkar	√	√	√	√	√	√
Karachi West	Karachi	√	√	√	√	√
Karachi Malir	Karachi					
Karachi South	Karachi					
Karachi East	Karachi					
Karachi Central	Karachi					
Sujawal	Thatta					
KPK						
Swat	√	√	√	√	√	√
Upper Dir	Dir	Dir	Dir	Dir	Dir	Dir
Lower Dir	Dir	Dir	Dir	Dir	Dir	Dir
Chitral	√	√	√	√	√	√
Shangla	√	√	√	√	√	√
Malakand	√	√	√	√	√	√
Bonair	√	√	√	√	√	√
Peshawar	√	√	√	√	√	√
Charsada	√	√	√	√	√	√
Nowsehra	√	√	√	√	√	√
Kohat	√	√	√	√	√	√
Karak	√	√	√	√	√	√
Hangu	√	√	√	√	√	√
D. I. Khan	√	√	√	√	√	√
Tank	√	√	√	√	√	√
Manshera	√	√	√	√	√	√
Abbottabad	√	√	√	√	√	√
Batagram	√	√	√	√	√	√
Kohistan	√	√	√	√	√	√
Haripur	√	√	√	√	√	√
Bannu	√	√	√	√	√	√
Lakki Marwat	√	√	√	√	√	√
Mardan	√	√	√	√	√	√
Swabi	√	√	√	√	√	√
Tor Garh	Manshera	Manshera				
BALOCHISTAN						
Quetta	√	√	√	√	√	√
Pishine	√	√	√	√	√	√
Qilla Abdullah	√	√	√	√	√	√
Chaghai	√	√	√	√	√	√
Nushki	Chaghai	Chaghai	Chaghai	Chaghai		
Sibbi	√	√	√	√	√	√
Ziarat	√	√	√	√	√	√
Kohlu	√	√	√	√	√	X
Dera Bugti	√	√	√	√	√	X
Harnai	Sibbi	Sibbi	Sibbi			
Kalat	√	√	√	√	√	√
Mastung	√	√	√	√	√	√

Khuzdar	√	√	√	√	√	√
Awaran	√	√	√	√	√	√
Kharan	√	√	√	√	√	√
Washuk	*Kharan*	*Kharan*	*Kharan*	*Kharan*		
Lasbela	√	√	√	√	√	√
Ketch/Turbat	X	√	√	√	√	√
Gwader	√	√	√	√	√	√
Panjgoor	X	X	√	√	√	√
Zhob	√	√	√	√	√	√
Loralai	√	√	√	√	√	√
Barkhan	√	√	√	√	√	√
Musa Khel	√	√	√	√	√	√
Qilla Saifullah	√	√	√	√	√	√
Sherani	*Zhob*	*Zhob*	*Zhob*			
Nasirabad/ Tamboo	√	√	√	√	√	√
Jaffarabad	√	√	√	√	√	√
Jhal Magsi	√	√	√	√	√	√
Bolan/ Kachhi	√	√	√	√	√	√

Appendix B

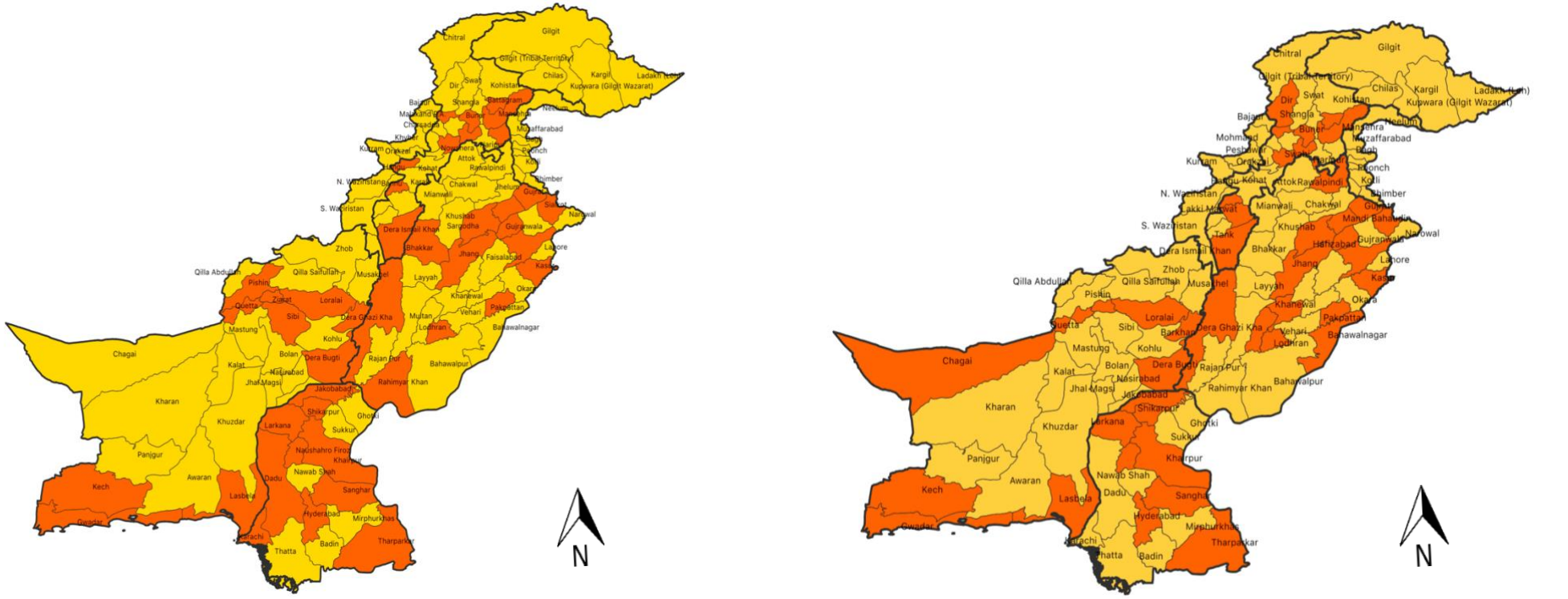
SAE Model Results

Statistics	2004		2006		2008		2010		2012		2014	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Error Decomposition	ELL	ELL	ELL	ELL	ELL	ELL	ELL	ELL	ELL	ELL	ELL	ELL
Beta Model Diagnostics												
Number of Observations	5783	8879	6135	9159	6250	9247	6585	9748	6743	9062	6234	11751
Adjusted R Squared	0.669	0.449	0.501	0.431	0.494	0.430	0.755	0.497	0.531	0.435	0.745	0.623
R Squared	0.674	0.454	0.504	0.433	0.499	0.434	0.757	0.500	0.535	0.437	0.748	0.625
Root MSE	0.368	0.349	0.486	0.351	0.465	0.346	0.298	0.304	0.442	0.337	0.294	0.279
F Stat	159.61	86.02	137.67	188.47	116.31	111.61	307.63	166.94	187.71	175.10	309.96	324.69
Alpha Model Diagnostics												
Number of Observations	5783	8879	6135	9159	6250	9247	6585	9748	6743	9062	6234	11751
Adjusted R Squared	0.014	0.034	0.024	0.030	0.027	0.039	0.026	0.018	0.023	0.020	0.029	0.026
R Squared	0.023	0.040	0.029	0.033	0.034	0.044	0.033	0.022	0.025	0.023	0.034	0.029
Root MSE	2.327	2.240	2.300	2.280	2.310	2.248	2.237	2.257	2.302	2.284	2.264	2.241
F Stat	2.635	7.449	6.903	9.637	4.518	8.472	4.790	5.193	9.773	7.464	7.731	11.520
Model Parameters												
Sigma ETA Sq.	0.027	0.029	0.090	0.019	0.085	0.020	0.016	0.015	0.070	0.023	0.010	0.012
Ratio of Sigma ETA sq over MSE	0.202	0.238	0.377	0.157	0.394	0.169	0.184	0.164	0.357	0.200	0.121	0.161
Variance of Epsilon	0.108	0.093	0.147	0.104	0.131	0.100	0.072	0.077	0.126	0.091	0.076	0.065
Sampling Variance of Sigma eta sq	9.2×10^{-6}	4.4×10^{-6}	3.9×10^{-5}	2.4×10^{-6}	3.5×10^{-5}	2.5×10^{-6}	2.0×10^{-6}	1.3×10^{-6}	2.2×10^{-5}	2.9×10^{-6}	1.2×10^{-6}	7.6×10^{-7}

Appendix C

Figure C1
Districts showing opposite movement in poverty trends using conventional and non-conventional Distribution-insensitive measures (MPI and PG) for at least 3 spells (out of 5)

Figure C2
Districts showing opposite movement in poverty trends using conventional and non-conventional Distribution-sensitive measures (MDPI and SPG) for at least 3 spells (out of 5)



Appendix D

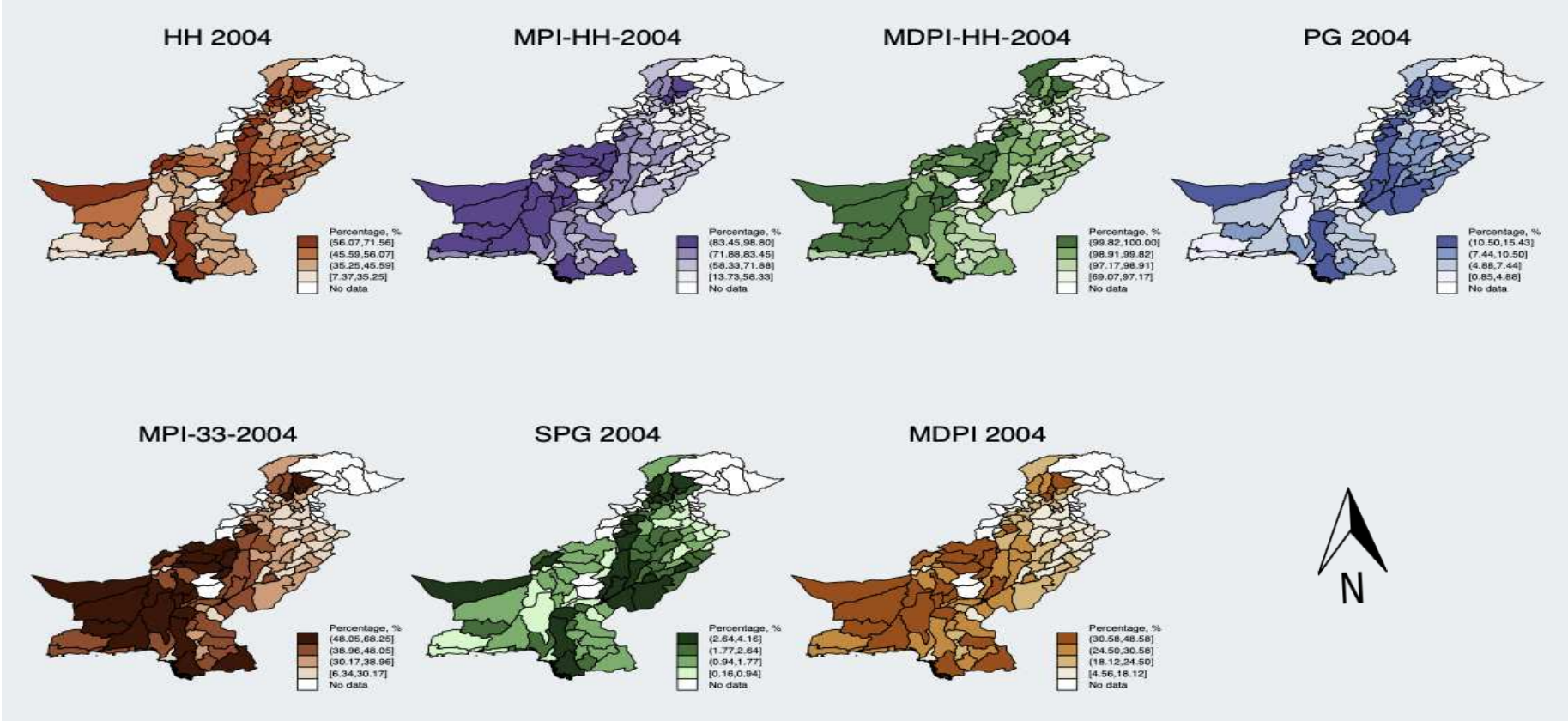


Figure D1 **Poverty Mapping for Poverty Measures (Distribution Sensitive and Insensitive) – 2004**

Note: HH, Headcount Index; MPI-HH, AF multidimensional headcount Index; MDPI-HH, multidimensional distribution-sensitive headcount Index; PG, Poverty Gap; SPG, Squared Poverty Gap; Exit, Time Exit Index; MPI-33, Multidimensional Poverty Index with 33% cut-off; MDPI, Multidimensional Distribution Sensitive Poverty Index

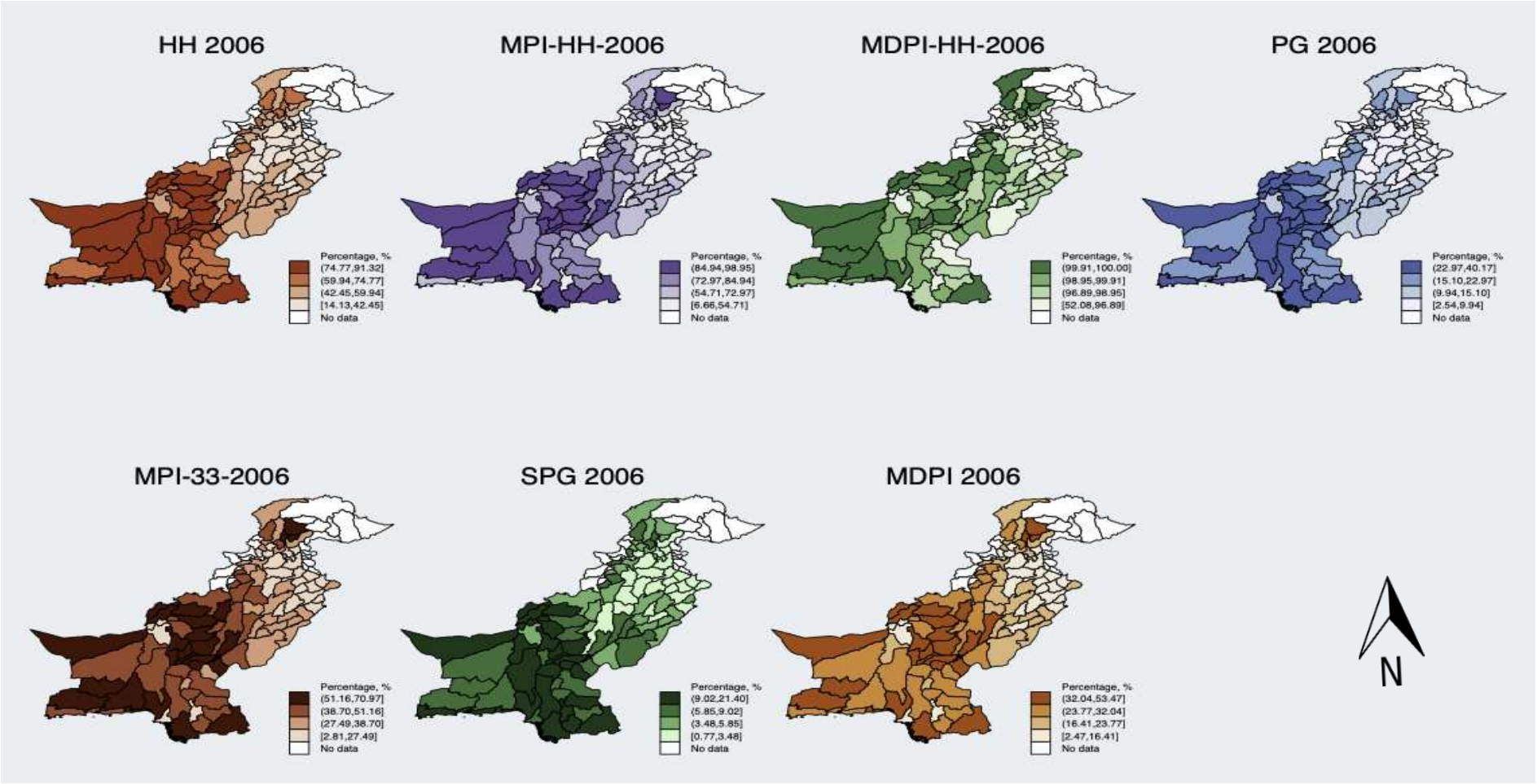


Figure D2 **Poverty Mapping for Poverty Measures (Distribution Sensitive and Insensitive) – 2006***Note:* HH, Headcount Index; MPI-HH, AF multidimensional headcount Index; MDPI-HH, multidimensional distribution-sensitive headcount Index; PG, Poverty Gap; SPG, Squared Poverty Gap; Exit, Time Exit Index; MPI-33, Multidimensional Poverty Index with 33% cut-off; MDPI, Multidimensional Distribution Sensitive Poverty Index

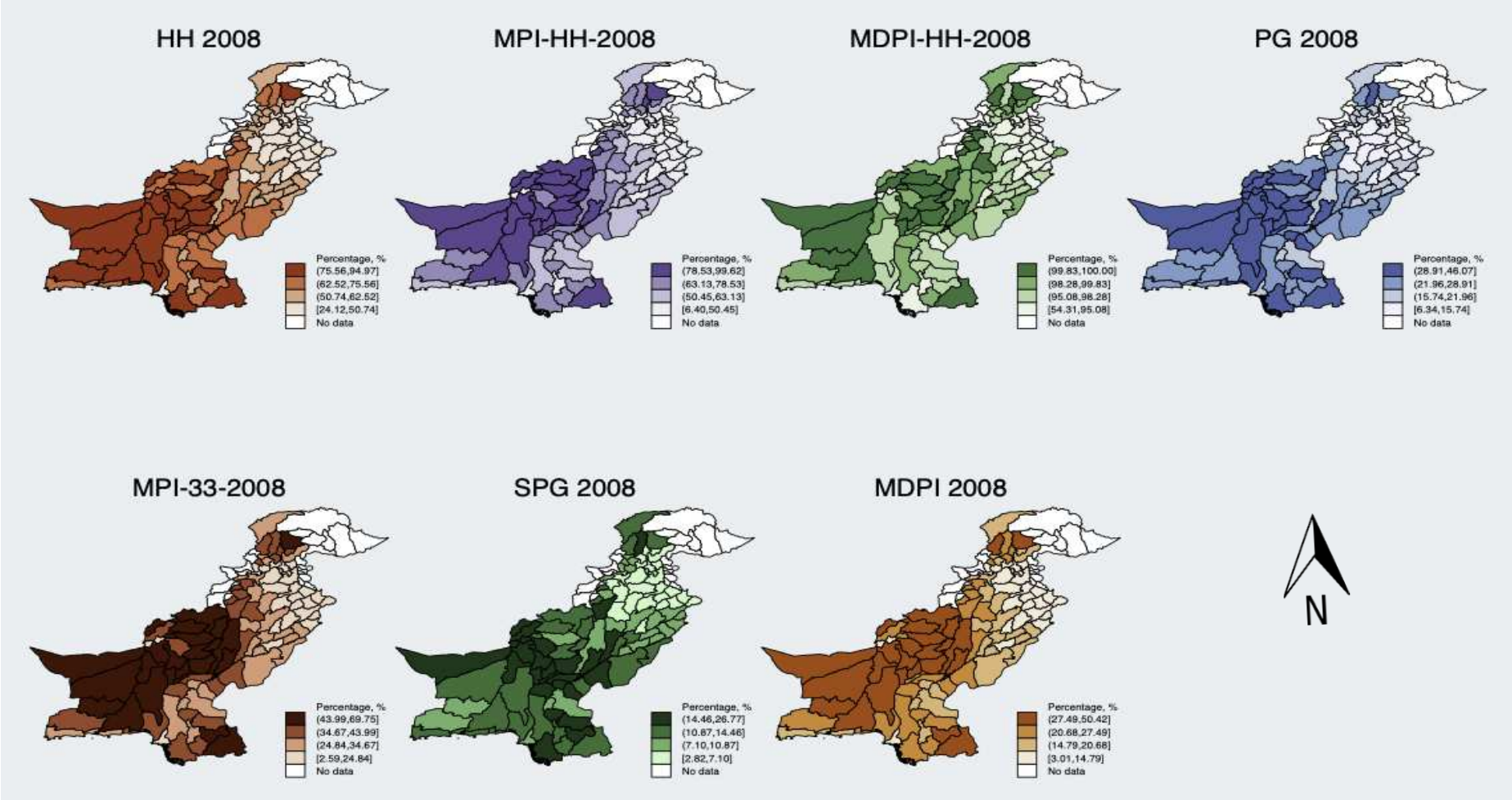


Figure D3 **Poverty Mapping for Poverty Measures (Distribution Sensitive and Insensitive) - 2008**

Note: HH, Headcount Index; MPI-HH, AF multidimensional headcount Index; MDPI-HH, multidimensional distribution-sensitive headcount Index; PG, Poverty Gap; SPG, Squared Poverty Gap; Exit, Time Exit Index; MPI-33, Multidimensional Poverty Index with 33% cut-off; MDPI, Multidimensional Distribution Sensitive Poverty Index

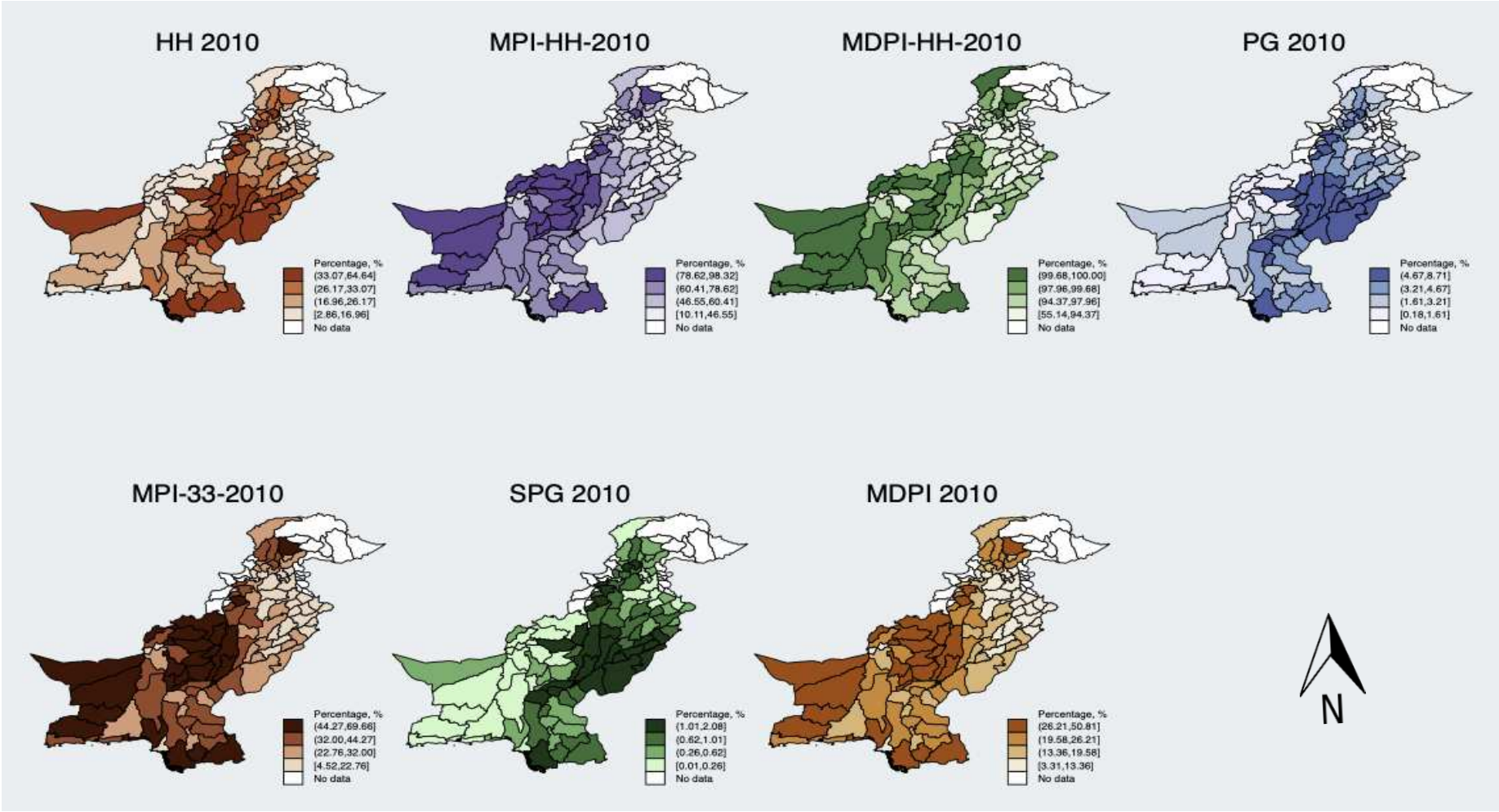


Figure D4 **Poverty Mapping for Poverty Measures (Distribution Sensitive and Insensitive) - 2010**

Note: HH, Headcount Index; MPI-HH, AF multidimensional headcount Index; MDPI-HH, multidimensional distribution-sensitive headcount Index; PG, Poverty Gap; SPG, Squared Poverty Gap; Exit, Time Exit Index; MPI-33, Multidimensional Poverty Index with 33% cut-off; MDPI, Multidimensional Distribution Sensitive Poverty Index

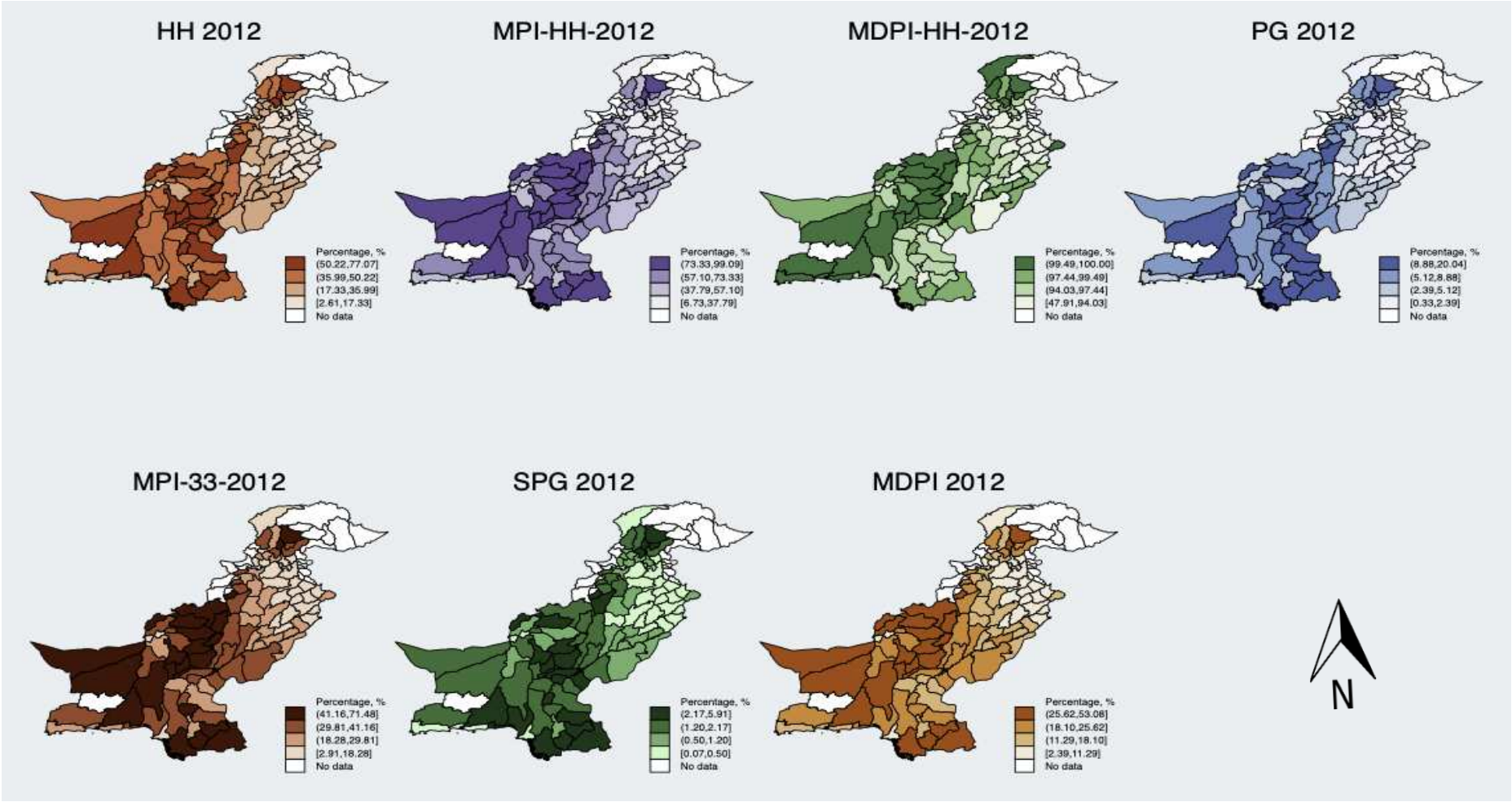


Figure D5 **Poverty Mapping for Poverty Measures (Distribution Sensitive and Insensitive) - 2012**

Note: HH, Headcount Index; MPI-HH, AF multidimensional headcount Index; MDPI-HH, multidimensional distribution-sensitive headcount Index; PG, Poverty Gap; SPG, Squared Poverty Gap; Exit, Time Exit Index; MPI-33, Multidimensional Poverty Index with 33% cut-off; MDPI, Multidimensional Distribution Sensitive Poverty Index

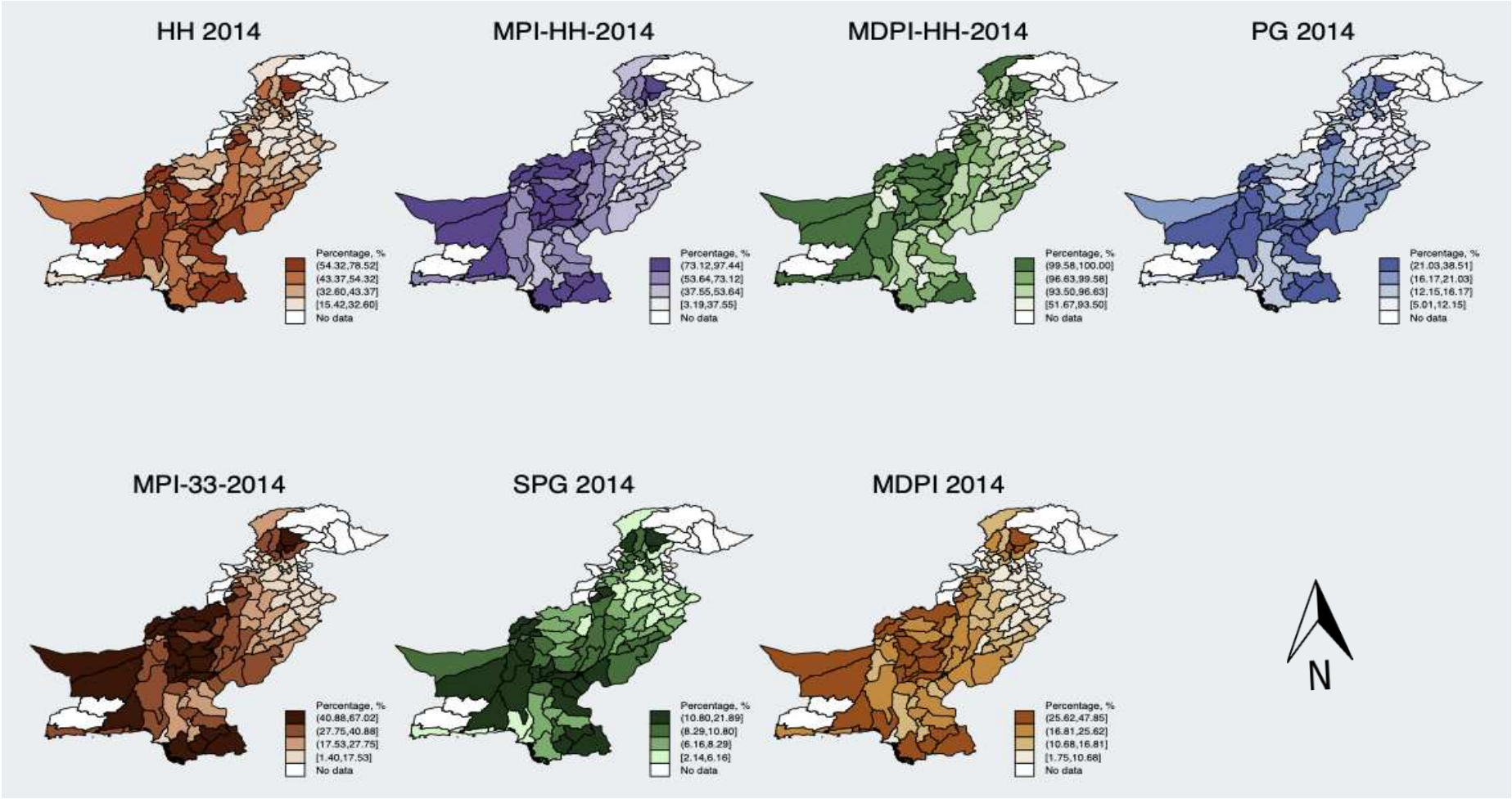


Figure D6 **Poverty Mapping for Poverty Measures (Distribution Sensitive and Insensitive) - 2014**

Note: HH, Headcount Index; MPI-HH, AF multidimensional headcount Index; MDPI-HH, multidimensional distribution-sensitive headcount Index; PG, Poverty Gap; SPG, Squared Poverty Gap; Exit, Time Exit Index; MPI-33, Multidimensional Poverty Index with 33% cut-off; MDPI, Multidimensional Distribution Sensitive Poverty Index

APPENDIX E

Poverty Estimates at District Level[10]

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
PUNJAB									
ISLAMABAD	2004	14.27	99.03	31.42	1.87	14.74	27.36	0.36	9.93
ISLAMABAD	2006	3.58	97.22	17.64	0.39	7.26	19.67	0.07	5.65
ISLAMABAD	2008	14.30	96.27	20.91	2.22	9.21	22.42	0.59	7.02
ISLAMABAD	2010	2.30	98.28	18.91	0.41	8.57	23.99	0.12	7.59
ISLAMABAD	2012	2.35	96.21	13.45	0.22	5.97	18.87	0.03	5.33
ISLAMABAD	2014	1.46	89.06	3.91	0.11	1.66	11.07	0.01	2.26
ATTOK	2004	31.56	99.07	51.18	5.22	23.68	33.93	1.23	14.01
ATTOK	2006	21.60	98.67	37.36	2.64	16.74	28.25	0.47	10.45
ATTOK	2008	31.84	99.81	37.11	4.56	16.42	28.53	1.00	10.35
ATTOK	2010	16.65	99.31	33.82	2.19	15.25	27.63	0.49	10.05
ATTOK	2012	10.94	97.05	22.25	1.88	9.42	21.78	0.70	6.83
ATTOK	2014	5.18	95.52	13.15	0.47	5.49	18.31	0.07	5.03
RAWALPINDI	2004	20.05	99.06	44.88	2.66	20.60	31.39	0.55	12.45
RAWALPINDI	2006	9.05	98.87	34.92	0.98	16.00	28.41	0.18	10.63
RAWALPINDI	2008	16.23	98.16	18.76	2.17	7.89	20.01	0.44	5.86
RAWALPINDI	2010	7.74	96.68	21.49	0.95	9.47	21.06	0.20	6.63
RAWALPINDI	2012	4.08	96.74	12.32	0.68	5.29	19.20	0.22	5.22
RAWALPINDI	2014	3.19	97.45	11.51	0.58	5.01	16.49	0.13	4.46
JHELUM	2004	27.73	100.00	41.91	4.30	19.77	30.64	1.04	12.25
JHELUM	2006	12.44	98.77	30.85	1.57	15.47	26.37	0.29	10.76
JHELUM	2008	27.91	96.84	7.69	4.01	3.08	15.29	0.84	3.49
JHELUM	2010	7.82	97.85	16.81	0.72	7.37	19.83	0.10	5.88
JHELUM	2012	7.26	95.97	11.97	0.67	5.23	16.91	0.09	4.61
JHELUM	2014	1.23	94.55	9.48	0.07	3.78	15.36	0.00	3.71
CHAKWAL	2004	17.64	98.97	28.16	2.13	12.42	25.69	0.41	8.63
CHAKWAL	2006	17.36	97.19	36.19	2.36	16.42	26.89	0.46	10.12
CHAKWAL	2008	19.08	97.08	24.37	2.27	10.22	22.06	0.38	6.86
CHAKWAL	2010	8.64	99.25	22.89	0.85	9.67	23.46	0.16	7.25
CHAKWAL	2012	4.02	97.71	12.73	0.30	5.24	19.26	0.05	5.19
CHAKWAL	2014	1.57	95.94	14.49	0.18	6.35	18.23	0.03	5.18
SARGODHA	2004	40.04	100.00	65.07	7.43	33.03	40.90	1.99	19.72
SARGODHA	2006	24.73	99.82	66.74	3.99	34.34	42.28	0.91	20.75
SARGODHA	2008	40.10	100.00	62.59	6.72	30.39	39.09	1.71	17.60
SARGODHA	2010	23.90	99.93	61.85	3.12	30.34	38.59	0.62	17.59
SARGODHA	2012	14.16	99.46	49.02	1.70	23.09	34.51	0.30	14.22
SARGODHA	2014	8.07	99.89	51.63	1.08	24.32	34.16	0.21	14.26
BHAKKAR	2004	44.53	100.00	82.19	7.50	45.38	49.65	1.80	27.30

[10] Yellow highlighted: Districts showing apposite trends for distribution-sensitive conventional and non-conventional poverty measures for more than 2 spells out of 5.

Red Font: Districts showing apposite trends for distribution-insensitive conventional and non-conventional poverty measures for more than 2 spells out of 5.

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
BHAKKAR	2006	50.56	100.00	78.27	7.51	42.23	47.35	1.65	25.41
BHAKKAR	2008	54.41	100.00	77.41	10.33	40.21	45.70	2.84	23.36
BHAKKAR	2010	42.46	100.00	72.83	5.96	40.40	46.81	1.24	25.09
BHAKKAR	2012	34.00	100.00	69.03	4.11	33.97	41.24	0.75	19.31
BHAKKAR	2014	13.04	99.88	58.30	1.59	29.38	39.04	0.29	17.95
KHUSHAB	2004	33.41	100.00	69.35	5.54	35.72	42.27	1.41	21.07
KHUSHAB	2006	29.12	99.90	55.20	4.44	27.08	37.17	0.96	16.46
KHUSHAB	2008	42.25	99.89	68.49	7.17	33.88	41.45	1.61	19.47
KHUSHAB	2010	16.39	100.00	59.55	1.72	28.22	37.03	0.28	16.08
KHUSHAB	2012	18.83	100.00	50.38	2.95	23.31	34.17	0.67	13.99
KHUSHAB	2014	7.13	100.00	52.61	0.79	26.67	37.01	0.14	16.77
MIANWALI	2004	28.84	99.73	73.68	3.99	38.14	44.11	0.75	22.20
MIANWALI	2006	30.90	99.05	65.88	3.95	34.45	41.48	0.79	20.87
MIANWALI	2008	46.65	99.46	60.77	7.94	32.14	40.57	1.88	19.97
MIANWALI	2010	28.89	100.00	60.12	3.44	29.96	38.79	0.60	17.97
MIANWALI	2012	22.63	99.59	55.55	3.97	29.74	38.55	1.04	19.34
MIANWALI	2014	9.55	99.73	57.55	1.09	29.59	38.77	0.19	18.33
FAISALABAD	2004	28.90	99.29	56.59	4.25	28.10	37.07	0.96	16.96
FAISALABAD	2006	22.50	99.78	51.92	2.95	25.71	35.24	0.61	15.64
FAISALABAD	2008	38.08	99.18	42.55	7.40	19.40	30.19	2.05	11.78
FAISALABAD	2010	13.56	97.17	38.51	1.58	18.56	28.50	0.30	11.56
FAISALABAD	2012	10.90	98.03	31.53	1.50	14.33	26.75	0.33	9.66
FAISALABAD	2014	6.73	96.64	31.07	0.73	14.08	25.37	0.12	9.13
JHANG	2004	44.33	99.91	82.64	7.90	45.22	49.37	1.96	27.18
JHANG	2006	48.06	100.00	75.55	8.71	40.27	45.39	2.11	23.89
JHANG	2008	47.93	99.56	70.23	8.74	35.55	41.92	2.28	20.51
JHANG	2010	32.68	99.65	61.43	4.70	29.30	36.96	0.98	16.52
JHANG	2012	32.08	99.84	55.85	4.82	26.97	36.07	1.06	16.00
JHANG	2014	15.00	99.93	52.84	1.72	25.18	35.00	0.34	15.00
TOBATEKSINGH	2004	42.00	99.89	68.49	6.98	36.21	43.76	1.62	22.18
TOBATEKSINGH	2006	23.85	99.57	52.66	3.39	25.88	35.98	0.70	15.91
TOBATEKSINGH	2008	36.50	99.82	44.93	6.34	21.47	33.24	1.63	13.55
TOBATEKSINGH	2010	14.37	96.51	30.16	1.85	14.03	25.56	0.37	9.45
TOBATEKSINGH	2012	18.24	98.89	38.14	2.14	17.35	29.05	0.40	10.91
TOBATEKSINGH	2014	7.82	98.65	27.13	0.90	12.37	24.03	0.17	8.36
GUJRANWALA	2004	31.88	98.41	47.27	4.75	22.64	32.42	1.00	13.66
GUJRANWALA	2006	15.68	98.69	41.64	2.02	18.94	29.84	0.39	11.58
GUJRANWALA	2008	28.96	98.78	27.03	4.54	11.83	25.31	1.10	8.42
GUJRANWALA	2010	10.43	98.32	30.85	1.10	13.92	26.85	0.20	9.58
GUJRANWALA	2012	7.24	96.70	27.95	0.85	12.57	25.25	0.17	8.85
GUJRANWALA	2014	7.64	96.37	25.40	0.80	11.98	23.78	0.16	8.51
GUJRAT	2004	26.10	98.28	36.71	4.03	17.32	28.80	0.91	11.25
GUJRAT	2006	17.70	96.31	28.39	2.25	12.42	23.96	0.46	8.12
GUJRAT	2008	26.63	99.21	25.11	4.30	10.98	25.65	1.02	8.36
GUJRAT	2010	11.94	98.96	25.16	1.27	11.51	26.00	0.22	8.87
GUJRAT	2012	9.85	96.52	24.20	1.27	10.40	23.60	0.27	7.55
GUJRAT	2014	3.00	95.73	24.48	0.36	10.50	24.13	0.06	7.79
SIALKOT	2004	27.23	100.00	40.78	3.80	18.26	30.80	0.84	11.59
SIALKOT	2006	25.93	100.00	48.96	3.47	23.85	35.42	0.71	15.23
SIALKOT	2008	43.74	99.84	32.54	7.49	14.37	27.76	1.91	9.82
SIALKOT	2010	11.67	98.93	35.35	1.15	16.13	29.51	0.18	10.83
SIALKOT	2012	10.90	99.33	30.47	0.94	13.91	28.04	0.13	9.92

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
SIALKOT	2014	4.07	97.47	19.75	0.38	8.32	20.95	0.05	6.31
HAFIZABAD	2004	35.35	100.00	67.80	5.25	35.92	42.35	1.09	21.65
HAFIZABAD	2006	36.49	99.12	54.99	5.95	25.77	34.40	1.31	14.66
HAFIZABAD	2008	41.11	98.58	46.23	7.06	21.68	32.46	1.78	13.30
HAFIZABAD	2010	25.21	97.79	50.37	3.03	23.99	32.94	0.57	13.99
HAFIZABAD	2012	19.50	97.73	38.81	1.83	17.22	28.60	0.28	10.57
HAFIZABAD	2014	9.21	97.33	41.80	0.91	20.14	31.03	0.15	12.65
MANDIBAHAUDIN	2004	27.43	99.60	56.80	3.84	28.41	37.70	0.83	17.23
MANDIBAHAUDIN	2006	28.97	99.50	44.95	4.17	21.59	32.45	0.90	13.41
MANDIBAHAUDIN	2008	40.25	99.58	42.30	6.18	19.44	31.55	1.52	12.26
MANDIBAHAUDIN	2010	10.50	98.96	46.89	1.02	21.32	32.67	0.14	12.82
MANDIBAHAUDIN	2012	10.58	99.20	31.59	1.10	14.05	28.03	0.19	9.75
MANDIBAHAUDIN	2014	8.03	99.47	37.65	1.32	17.67	30.27	0.31	11.57
NAROWAL	2004	28.99	99.81	53.98	3.93	25.86	35.87	0.87	15.41
NAROWAL	2006	44.31	99.80	68.46	6.34	33.10	41.06	1.26	18.85
NAROWAL	2008	49.90	100.00	54.55	8.41	25.43	36.87	1.97	15.38
NAROWAL	2010	26.14	99.75	44.66	2.97	20.10	32.85	0.48	12.69
NAROWAL	2012	24.06	100.00	50.84	2.73	23.07	34.83	0.49	13.91
NAROWAL	2014	9.56	100.00	31.54	0.91	13.83	27.56	0.13	9.52
LAHORE	2004	15.48	98.61	39.10	2.17	18.32	28.96	0.51	11.43
LAHORE	2006	10.24	97.63	34.65	1.43	16.62	27.92	0.31	11.06
LAHORE	2008	16.52	97.55	34.67	2.92	16.47	26.78	0.78	10.54
LAHORE	2010	9.24	99.01	39.37	1.22	18.51	29.38	0.24	11.54
LAHORE	2012	4.55	97.56	23.74	0.53	11.24	23.30	0.09	8.27
LAHORE	2014	4.12	92.35	12.42	0.29	4.90	14.59	0.04	3.76
KASUR	2004	42.65	99.84	61.20	7.03	29.61	37.26	1.76	16.97
KASUR	2006	37.09	99.09	61.50	5.83	31.12	39.35	1.29	18.60
KASUR	2008	50.96	98.98	53.40	10.19	24.32	33.61	2.73	13.80
KASUR	2010	25.83	100.00	48.64	2.80	23.05	33.06	0.47	13.81
KASUR	2012	19.91	99.84	43.22	2.81	19.83	30.49	0.60	12.02
KASUR	2014	12.14	99.05	26.09	1.22	11.57	23.77	0.18	8.06
OKARA	2004	38.37	100.00	74.95	6.31	39.39	44.74	1.56	23.15
OKARA	2006	44.98	100.00	73.42	8.51	40.47	46.36	2.13	25.16
OKARA	2008	48.90	99.73	63.06	10.02	31.51	39.82	2.79	18.64
OKARA	2010	31.78	99.82	60.43	4.42	29.66	37.93	0.88	17.35
OKARA	2012	21.37	99.18	56.42	2.75	26.75	35.53	0.58	15.32
OKARA	2014	14.08	98.97	51.39	1.45	24.54	34.18	0.27	14.45
SHEIKHUPURA	2004	37.63	99.28	48.98	6.33	23.85	33.91	1.63	14.73
SHEIKHUPURA	2006	30.01	99.78	56.36	4.38	28.02	36.59	0.95	16.68
SHEIKHUPURA	2008	41.77	99.36	39.45	7.81	18.39	29.56	2.14	11.53
SHEIKHUPURA	2010	21.82	98.77	42.22	2.37	20.40	31.06	0.42	12.82
SHEIKHUPURA	2012	15.19	97.40	35.14	2.15	16.51	27.63	0.44	10.70
SHEIKHUPURA	2014	9.19	97.41	28.14	0.80	12.56	24.43	0.12	8.44
VEHARI	2004	49.34	100.00	63.62	9.17	30.88	38.56	2.39	17.71
VEHARI	2006	48.50	99.74	63.00	9.33	31.10	38.84	2.45	18.06
VEHARI	2008	56.00	99.48	52.44	11.59	24.63	33.60	3.24	14.20
VEHARI	2010	33.95	99.69	52.10	4.61	24.73	34.19	0.92	14.50
VEHARI	2012	32.93	99.91	63.83	5.47	33.20	41.14	1.31	20.14
VEHARI	2014	17.71	99.48	47.12	1.98	22.81	33.13	0.35	14.20
SAHIWAL	2004	38.81	99.97	65.45	6.20	34.15	41.21	1.46	20.60
SAHIWAL	2006	35.45	99.67	61.28	5.92	32.21	39.89	1.42	19.81
SAHIWAL	2008	52.28	100.00	57.63	10.52	28.73	37.57	3.18	17.17

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
SAHIWAL	2010	25.95	99.27	47.48	3.29	23.24	32.83	0.59	14.10
SAHIWAL	2012	24.80	98.79	43.76	4.31	21.29	31.01	0.99	13.01
SAHIWAL	2014	13.80	96.77	39.10	1.65	17.70	26.82	0.34	10.34
MULTAN	2004	44.64	99.49	73.86	8.73	38.09	43.13	2.43	21.93
MULTAN	2006	36.46	99.81	78.04	6.56	42.62	47.28	1.64	25.74
MULTAN	2008	44.70	99.49	72.20	9.38	37.66	43.89	2.71	22.15
MULTAN	2010	29.78	99.44	64.21	4.02	33.89	40.76	0.82	20.56
MULTAN	2012	23.47	99.75	65.38	3.67	33.57	40.84	0.87	19.96
MULTAN	2014	14.11	98.70	55.57	1.56	27.33	35.31	0.27	15.94
KHANEWAL	2004	47.32	99.73	71.34	8.91	37.62	43.30	2.35	22.61
KHANEWAL	2006	45.61	99.86	69.10	7.25	37.18	44.14	1.70	22.90
KHANEWAL	2008	51.58	99.47	68.15	10.58	34.24	41.31	2.93	19.92
KHANEWAL	2010	30.92	99.00	59.50	4.27	30.94	39.32	0.88	19.10
KHANEWAL	2012	30.09	99.23	59.50	4.69	29.67	38.23	1.05	17.64
KHANEWAL	2014	13.57	98.71	48.49	1.82	23.20	32.98	0.37	13.90
PAKPATTAN	2004	43.78	99.89	77.53	7.49	42.71	47.64	1.78	26.12
PAKPATTAN	2006	44.11	100.00	67.64	7.59	36.33	43.56	1.80	22.61
PAKPATTAN	2008	56.68	100.00	72.17	10.89	34.88	40.69	2.91	19.09
PAKPATTAN	2010	35.53	99.07	67.52	5.25	35.15	42.04	1.11	21.06
PAKPATTAN	2012	33.09	100.00	57.97	5.09	29.03	37.95	1.18	17.44
PAKPATTAN	2014	15.33	99.06	48.29	1.43	21.62	31.22	0.23	12.34
LODHRAN	2004	57.98	100.00	80.94	11.62	45.31	49.80	3.41	28.08
LODHRAN	2006	49.53	100.00	76.08	9.63	41.66	47.61	2.54	25.85
LODHRAN	2008	55.06	100.00	64.72	11.64	32.85	40.73	3.38	19.46
LODHRAN	2010	35.71	100.00	69.51	5.18	34.99	41.29	1.04	20.14
LODHRAN	2012	32.65	99.15	60.75	5.24	31.98	40.20	1.21	19.77
LODHRAN	2014	16.47	99.67	54.13	1.78	26.87	35.79	0.31	16.11
DERAGHAZIKHAN	2004	59.87	100.00	82.15	12.22	50.53	54.21	3.44	33.61
DERAGHAZIKHAN	2006	58.40	100.00	81.70	12.07	49.08	52.98	3.28	32.17
DERAGHAZIKHAN	2008	71.29	100.00	85.06	18.63	52.19	55.60	6.28	35.15
DERAGHAZIKHAN	2010	56.85	100.00	87.93	10.12	54.27	57.10	2.32	36.16
DERAGHAZIKHAN	2012	55.56	100.00	73.56	10.41	39.36	45.26	2.60	23.68
DERAGHAZIKHAN	2014	36.28	99.72	72.62	4.95	40.40	46.21	0.99	25.49
RAJANPUR	2004	59.79	100.00	83.01	10.82	51.50	55.51	2.77	34.96
RAJANPUR	2006	75.57	100.00	95.54	19.14	65.42	66.50	5.94	47.40
RAJANPUR	2008	81.04	99.94	93.80	19.49	55.93	57.44	5.97	35.49
RAJANPUR	2010	64.09	100.00	83.71	12.17	49.90	53.45	2.98	32.17
RAJANPUR	2012	55.65	100.00	76.53	11.74	42.72	48.00	3.32	26.93
RAJANPUR	2014	33.67	100.00	74.51	4.04	41.92	47.83	0.69	26.50
LAYYAH	2004	46.82	99.80	72.46	7.67	42.55	47.53	1.85	27.59
LAYYAH	2006	45.34	100.00	64.24	7.55	34.05	41.51	1.70	21.12
LAYYAH	2008	55.04	100.00	71.30	9.97	35.33	41.26	2.60	19.90
LAYYAH	2010	42.61	100.00	60.09	7.74	31.38	38.98	1.96	19.47
LAYYAH	2012	25.39	100.00	51.81	3.29	24.97	34.14	0.65	14.73
LAYYAH	2014	11.18	100.00	51.60	0.92	24.46	34.95	0.11	14.70
MUZAFFARGARH	2004	63.42	100.00	86.76	13.32	50.61	53.37	3.75	31.79
MUZAFFARGARH	2006	60.28	100.00	89.58	13.20	54.52	56.86	3.74	35.70
MUZAFFARGARH	2008	64.26	99.79	79.54	16.23	45.33	49.49	5.36	28.09
MUZAFFARGARH	2010	51.40	100.00	80.36	8.46	44.90	49.42	1.93	27.62
MUZAFFARGARH	2012	38.18	100.00	72.76	6.31	38.68	44.47	1.55	23.11
MUZAFFARGARH	2014	29.90	99.82	71.51	4.12	37.62	43.65	0.82	22.29
BAHAWALPUR	2004	47.97	100.00	77.87	9.23	45.00	49.73	2.47	28.78

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
BAHAWALPUR	2006	50.78	99.80	78.05	10.36	43.83	48.52	2.83	27.18
BAHAWALPUR	2008	55.23	100.00	75.28	13.39	41.39	46.70	4.58	25.32
BAHAWALPUR	2010	34.85	100.00	71.76	5.28	39.16	45.27	1.14	24.31
BAHAWALPUR	2012	37.29	99.82	73.14	6.73	40.47	45.82	1.71	25.00
BAHAWALPUR	2014	22.21	99.90	66.87	2.95	35.29	42.02	0.60	21.25
BAHAWALNAGAR	2004	35.69	99.76	67.71	6.34	36.36	43.41	1.61	22.50
BAHAWALNAGAR	2006	44.44	98.83	64.98	8.43	34.50	41.06	2.15	20.98
BAHAWALNAGAR	2008	58.06	100.00	68.77	11.98	34.64	41.19	3.37	19.94
BAHAWALNAGAR	2010	35.70	100.00	60.02	5.37	31.61	39.41	1.17	19.38
BAHAWALNAGAR	2012	28.14	100.00	53.38	4.61	26.25	35.41	1.08	15.64
BAHAWALNAGAR	2014	16.06	100.00	56.54	1.75	27.97	36.41	0.35	16.48
RAHIMYARKHAN	2004	59.13	99.70	80.54	12.97	47.70	51.64	3.92	31.05
RAHIMYARKHAN	2006	61.25	99.89	85.32	12.50	49.36	52.60	3.33	31.02
RAHIMYARKHAN	2008	61.64	100.00	72.60	15.62	40.79	46.59	5.35	25.60
RAHIMYARKHAN	2010	39.82	99.86	71.20	6.61	38.64	44.59	1.49	23.62
RAHIMYARKHAN	2012	46.98	99.67	69.81	9.21	37.93	44.27	2.54	23.33
RAHIMYARKHAN	2014	28.76	99.51	65.98	4.10	34.08	40.97	0.88	20.19
SINDH									
KHAIRPUR	2004	45.85	98.93	80.15	8.53	46.14	50.05	2.25	29.22
KHAIRPUR	2006	61.07	100.00	84.35	11.48	49.94	53.40	2.91	32.41
KHAIRPUR	2008	69.15	99.91	69.54	15.62	35.55	42.21	4.55	20.80
KHAIRPUR	2010	43.36	99.81	73.49	5.37	39.46	44.93	0.91	23.91
KHAIRPUR	2012	48.15	99.91	69.17	7.23	35.20	41.69	1.47	20.70
KHAIRPUR	2014	26.59	99.35	64.91	3.41	34.12	41.25	0.67	20.80
SUKKUR	2004	29.10	100.00	86.73	4.78	51.00	54.23	1.20	32.56
SUKKUR	2006	43.24	100.00	88.45	9.25	57.46	59.87	2.62	40.36
SUKKUR	2008	58.49	99.71	83.28	13.39	48.86	52.33	4.01	31.45
SUKKUR	2010	33.36	99.64	77.44	4.01	42.17	46.74	0.69	25.71
SUKKUR	2012	36.58	98.83	73.26	6.29	40.85	45.78	1.43	25.42
SUKKUR	2014	26.15	100.00	74.66	3.70	39.41	44.35	0.72	23.22
NAWABSHAH	2004	42.19	100.00	93.03	7.89	53.92	55.56	2.14	33.35
NAWABSHAH	2006	53.15	100.00	93.97	9.98	57.12	58.64	2.43	37.12
NAWABSHAH	2008	64.97	99.84	88.98	13.41	51.74	54.41	3.62	32.31
NAWABSHAH	2010	29.95	100.00	85.58	3.25	48.34	51.56	0.51	29.65
NAWABSHAH	2012	42.59	100.00	89.87	5.85	53.04	55.52	1.10	33.21
NAWABSHAH	2014	8.96	100.00	76.38	0.77	41.43	46.68	0.11	24.90
NAUSHAHROFIROZ	2004	43.49	100.00	88.92	8.62	50.09	52.49	2.37	30.33
NAUSHAHROFIROZ	2006	51.13	99.75	74.84	9.60	40.76	46.14	2.55	25.04
NAUSHAHROFIROZ	2008	61.00	99.52	61.34	10.79	30.66	38.97	2.60	18.16
NAUSHAHROFIROZ	2010	33.96	100.00	68.94	4.65	36.68	43.10	0.92	22.31
NAUSHAHROFIROZ	2012	40.61	100.00	67.84	5.39	36.65	43.79	1.03	22.79
NAUSHAHROFIROZ	2014	12.59	99.54	52.03	1.35	25.85	37.01	0.19	16.55
GHOTKI	2004	35.10	100.00	85.45	6.49	50.10	53.74	1.75	32.21
GHOTKI	2006	66.12	100.00	91.75	12.81	56.93	58.92	3.22	37.77
GHOTKI	2008	80.62	100.00	81.96	18.59	45.33	49.38	5.47	27.74
GHOTKI	2010	41.47	99.96	75.38	5.09	40.11	45.67	0.83	23.83
GHOTKI	2012	52.95	100.00	79.37	7.83	43.27	47.54	1.64	25.97
GHOTKI	2014	41.51	99.61	78.52	5.20	43.11	47.46	0.90	26.13
JAKOBABAD	2004	44.48	99.75	92.63	6.95	53.14	54.58	1.53	32.33
JAKOBABAD	2006	76.70	100.00	98.19	17.59	64.76	65.21	5.05	44.43
JAKOBABAD	2008	76.81	100.00	85.66	17.86	46.32	49.74	5.29	27.42
JAKOBABAD	2010	50.27	100.00	87.41	6.82	48.72	51.61	1.29	29.74

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
JAKOBABAD	2012	59.66	99.66	82.35	10.48	45.97	49.54	2.38	27.99
JAKOBABAD	2014	41.15	99.94	89.55	5.69	53.31	55.56	1.10	34.05
SHIKARPUR	2004	47.32	99.81	84.67	9.21	51.31	54.40	2.81	33.66
SHIKARPUR	2006	67.28	99.80	94.75	14.61	60.79	62.07	4.04	40.94
SHIKARPUR	2008	69.23	99.79	78.83	17.04	41.76	46.05	5.30	24.36
SHIKARPUR	2010	48.54	99.89	78.04	6.86	44.48	48.94	1.55	28.04
SHIKARPUR	2012	51.38	99.76	70.82	8.38	36.69	42.77	1.86	21.41
SHIKARPUR	2014	38.16	98.52	74.16	5.22	42.05	46.96	0.98	26.71
LARKANA	2004	61.00	100.00	90.52	12.66	54.87	57.06	3.53	35.83
LARKANA	2006	56.24	99.88	89.70	11.96	56.44	58.76	3.34	37.93
LARKANA	2008	69.84	99.88	83.40	18.02	49.77	53.76	5.92	32.34
LARKANA	2010	46.01	99.56	73.72	6.25	38.33	43.65	1.20	22.47
LARKANA	2012	48.94	99.68	71.26	7.80	37.19	42.61	1.70	21.94
LARKANA	2014	27.31	99.64	68.72	3.33	36.99	43.00	0.60	22.70
DADU	2004	54.90	99.72	87.58	10.65	52.10	54.86	2.81	33.41
DADU	2006	64.29	100.00	86.66	13.32	52.80	55.91	3.64	35.02
DADU	2008	68.51	99.28	66.14	13.56	37.46	44.43	3.67	24.65
DADU	2010	31.76	99.74	76.11	3.87	40.14	45.73	0.70	24.11
DADU	2012	38.04	99.92	78.47	5.45	42.32	47.31	1.12	25.47
DADU	2014	11.27	99.90	63.56	1.34	32.21	40.73	0.22	19.66
HYDERABAD	2004	28.47	100.00	83.12	4.79	45.65	49.46	1.13	27.38
HYDERABAD	2006	37.86	100.00	79.81	7.04	43.83	48.10	1.80	26.64
HYDERABAD	2008	41.41	99.29	81.23	8.32	46.69	50.74	2.26	29.38
HYDERABAD	2010	21.07	99.41	79.47	2.62	46.83	51.15	0.48	30.46
HYDERABAD	2012	28.07	99.69	78.22	4.27	44.25	48.95	0.89	27.79
HYDERABAD	2014	16.93	99.82	81.69	1.98	46.37	50.31	0.33	28.84
BADIN	2004	47.27	100.00	88.84	8.55	49.70	52.17	2.33	29.94
BADIN	2006	70.59	100.00	90.04	15.21	51.98	54.13	4.06	32.38
BADIN	2008	69.50	100.00	86.76	14.83	49.10	52.01	4.19	30.15
BADIN	2010	47.97	100.00	89.79	6.56	53.92	56.31	1.20	34.91
BADIN	2012	55.49	100.00	93.48	8.56	56.60	58.17	1.74	36.57
BADIN	2014	28.67	99.77	89.02	3.43	53.27	55.66	0.60	34.15
THATTA	2004	58.11	100.00	93.65	12.36	56.26	57.68	3.69	36.14
THATTA	2006	65.68	100.00	93.58	14.22	58.07	59.66	4.00	38.46
THATTA	2008	67.63	100.00	89.26	15.20	52.12	54.85	4.51	32.78
THATTA	2010	50.04	100.00	86.47	6.46	50.10	53.39	1.17	31.51
THATTA	2012	34.03	99.78	85.81	4.75	49.79	52.73	0.95	31.24
THATTA	2014	24.93	100.00	90.52	3.05	51.37	53.68	0.56	31.33
SANGHAR	2004	42.00	100.00	90.21	7.53	56.22	58.40	1.95	37.44
SANGHAR	2006	56.43	99.83	84.85	10.87	53.23	56.36	2.75	36.15
SANGHAR	2008	62.90	98.78	76.58	13.25	44.58	49.19	3.70	28.98
SANGHAR	2010	30.28	99.64	74.45	3.48	40.83	45.77	0.58	24.85
SANGHAR	2012	38.19	98.80	73.56	6.04	42.21	47.18	1.31	26.88
SANGHAR	2014	17.37	99.40	84.55	1.77	50.46	53.34	0.26	32.31
MIRPHURKHAS	2004	42.38	100.00	89.04	7.84	55.29	57.74	2.04	36.98
MIRPHURKHAS	2006	51.73	100.00	90.98	10.02	56.95	59.29	2.54	38.37
MIRPHURKHAS	2008	64.80	100.00	89.93	14.11	54.69	57.18	4.07	35.95
MIRPHURKHAS	2010	41.77	100.00	83.13	5.80	46.74	50.71	1.09	29.06
MIRPHURKHAS	2012	46.02	100.00	91.11	6.57	57.32	59.45	1.31	38.68
MIRPHURKHAS	2014	24.86	100.00	91.55	2.83	56.44	58.55	0.47	37.53
THARPARKAR	2004	41.14	100.00	98.78	6.74	65.86	66.16	1.61	45.82
THARPARKAR	2006	70.63	100.00	96.98	13.38	64.68	65.36	3.28	45.22

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
THARPARKAR	2008	72.87	100.00	94.85	13.98	56.84	58.19	3.60	36.37
THARPARKAR	2010	50.33	100.00	95.10	5.53	59.05	60.31	0.88	38.68
THARPARKAR	2012	53.07	100.00	89.86	7.67	53.90	56.26	1.52	35.06
THARPARKAR	2014	31.71	100.00	90.40	3.22	51.77	54.13	0.49	32.07
KARACHI	2004	9.08	99.67	81.30	1.13	47.67	51.47	0.23	30.69
KARACHI	2006	7.27	99.58	76.23	1.04	46.73	51.69	0.24	31.96
KARACHI	2008	10.22	99.73	58.40	1.65	29.04	37.25	0.41	17.15
KARACHI	2010	2.84	99.70	72.74	0.24	39.65	44.78	0.03	24.02
KARACHI	2012	2.38	99.81	52.49	0.22	25.88	35.23	0.03	15.77
KARACHI	2014	0.95	100.00	37.48	0.13	17.79	29.76	0.03	11.68
KYBER PAKHTUNKHWA									
SWAT	2004	54.61	99.72	77.97	9.71	44.38	48.88	2.41	27.81
SWAT	2006	36.27	100.00	70.53	5.27	37.35	43.83	1.14	22.58
SWAT	2008	61.16	100.00	78.34	10.75	45.02	48.88	2.54	28.70
SWAT	2010	33.47	100.00	65.02	3.98	35.95	43.53	0.68	23.25
SWAT	2012	20.92	99.69	54.49	2.11	26.79	36.05	0.33	16.24
SWAT	2014	5.69	100.00	65.30	0.64	32.51	40.01	0.09	18.82
DIR	2004	57.09	100.00	76.30	10.53	43.93	49.25	2.59	28.18
DIR	2006	54.44	100.00	82.25	8.93	49.05	52.72	1.98	31.89
DIR	2008	71.19	100.00	79.93	12.46	45.59	50.46	2.95	28.73
DIR	2010	30.95	100.00	67.99	3.43	35.78	43.05	0.58	21.90
DIR	2012	33.33	100.00	74.05	3.52	40.83	46.52	0.56	25.46
DIR	2014	6.11	99.84	61.39	0.60	33.14	41.15	0.10	21.17
CHITRAL	2004	35.79	100.00	71.12	5.38	37.15	43.81	1.15	22.42
CHITRAL	2006	30.74	100.00	67.19	3.63	33.32	41.10	0.64	19.39
CHITRAL	2008	41.49	100.00	61.59	5.10	30.75	39.50	0.97	18.75
CHITRAL	2010	15.91	100.00	61.27	1.34	30.38	39.32	0.17	18.17
CHITRAL	2012	8.12	100.00	37.58	0.64	18.00	29.63	0.09	11.84
CHITRAL	2014	0.48	99.86	49.87	0.00	22.61	32.89	0.00	13.16
SHANGLA	2004	66.20	100.00	85.63	13.13	54.42	57.63	3.48	37.72
SHANGLA	2006	61.21	100.00	84.67	10.45	53.61	57.50	2.45	36.88
SHANGLA	2008	66.51	100.00	79.00	9.82	42.90	47.35	2.04	25.62
SHANGLA	2010	41.99	99.94	73.19	4.79	38.88	44.68	0.78	23.32
SHANGLA	2012	36.56	100.00	74.77	5.05	41.65	47.06	0.94	26.23
SHANGLA	2014	4.25	100.00	84.75	0.39	47.66	51.04	0.06	29.40
MALAKAND	2004	60.59	99.79	72.98	11.96	39.65	44.93	3.22	24.47
MALAKAND	2006	48.27	99.63	72.51	7.32	38.13	44.08	1.67	22.73
MALAKAND	2008	55.62	98.88	53.69	10.00	26.76	35.85	2.49	16.31
MALAKAND	2010	24.09	99.27	58.48	2.93	28.75	35.66	0.51	16.44
MALAKAND	2012	19.09	97.39	35.39	2.04	16.79	27.30	0.33	10.69
MALAKAND	2014	2.92	98.34	39.68	0.21	18.59	30.14	0.03	11.91
BUNER	2004	70.26	100.00	86.78	13.30	52.96	55.97	3.42	35.09
BUNER	2006	63.98	100.00	79.55	11.28	42.99	47.90	2.75	26.18
BUNER	2008	74.85	99.55	77.55	13.38	38.94	44.06	3.33	22.05
BUNER	2010	55.66	99.91	80.61	9.67	42.87	47.59	2.27	25.49
BUNER	2012	41.57	100.00	61.60	5.70	32.94	40.21	1.08	20.37
BUNER	2014	16.41	100.00	72.17	1.99	38.20	44.44	0.34	23.14
PESHAWAR	2004	43.17	99.72	82.67	8.18	45.90	49.39	2.20	27.64
PESHAWAR	2006	42.62	99.78	66.65	6.79	34.38	41.09	1.47	20.46
PESHAWAR	2008	43.76	98.92	69.66	7.48	35.43	41.69	1.81	20.56
PESHAWAR	2010	22.20	98.11	56.96	3.06	27.14	35.23	0.74	15.63
PESHAWAR	2012	14.77	98.83	41.87	1.50	20.14	30.79	0.23	12.63

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
PESHAWAR	2014	4.25	98.34	60.74	0.31	28.79	35.28	0.04	15.76
CHARSADDA	2004	56.01	99.16	75.82	10.78	41.65	46.62	2.76	25.63
CHARSADDA	2006	45.54	99.11	75.83	6.82	40.11	44.87	1.40	23.54
CHARSADDA	2008	59.27	99.00	72.29	9.06	39.55	44.46	1.95	23.87
CHARSADDA	2010	24.72	99.02	59.15	3.10	29.63	37.53	0.54	17.48
CHARSADDA	2012	27.19	98.89	56.98	3.15	28.46	36.90	0.54	17.13
CHARSADDA	2014	7.15	98.76	51.88	0.54	25.33	34.56	0.07	15.32
NOWSHERA	2004	43.15	99.71	72.46	6.56	37.96	43.72	1.48	22.45
NOWSHERA	2006	24.68	97.95	54.81	3.06	27.03	35.41	0.56	15.98
NOWSHERA	2008	41.74	98.59	47.60	6.13	22.59	32.90	1.31	13.79
NOWSHERA	2010	25.75	99.39	54.38	3.33	25.80	34.76	0.60	15.03
NOWSHERA	2012	19.37	96.48	42.79	2.30	21.04	30.62	0.44	13.42
NOWSHERA	2014	3.51	99.24	50.41	0.25	22.94	31.66	0.03	12.92
KOHAT	2004	50.15	99.75	73.63	8.29	38.87	44.44	1.83	23.35
KOHAT	2006	37.62	100.00	75.56	6.01	38.79	43.94	1.34	22.25
KOHAT	2008	53.00	99.87	65.03	8.88	31.99	39.20	2.13	18.46
KOHAT	2010	25.02	100.00	73.28	3.71	39.67	45.62	0.76	24.21
KOHAT	2012	23.91	99.16	61.35	3.21	31.06	38.97	0.61	18.62
KOHAT	2014	5.26	98.71	60.09	0.94	30.78	38.67	0.28	18.50
KARAK	2004	54.67	100.00	71.23	10.10	39.91	46.27	2.49	25.20
KARAK	2006	54.15	100.00	71.58	8.01	39.22	45.64	1.59	24.55
KARAK	2008	60.81	100.00	71.94	10.27	41.70	47.68	2.34	27.43
KARAK	2010	47.46	100.00	79.24	7.29	46.28	51.41	1.53	30.25
KARAK	2012	28.43	97.50	55.04	3.27	27.79	37.28	0.61	17.26
KARAK	2014	8.62	98.18	54.26	1.01	28.26	37.64	0.20	18.07
HANGU	2004	48.31	99.71	74.74	10.11	40.94	46.61	2.81	25.23
HANGU	2006	51.09	100.00	81.96	9.20	43.22	47.24	2.64	25.16
HANGU	2008	70.28	100.00	62.95	12.33	31.62	40.33	3.00	19.21
HANGU	2010	38.93	100.00	74.77	6.47	38.50	44.36	1.52	22.27
HANGU	2012	37.53	100.00	74.68	4.69	38.23	43.27	0.85	21.66
HANGU	2014	5.02	99.68	64.48	0.47	32.06	40.21	0.08	18.72
DERAISMAILKHAN	2004	58.45	100.00	79.41	11.66	43.19	47.53	3.16	25.51
DERAISMAILKHAN	2006	62.42	100.00	87.75	10.42	50.73	53.70	2.57	31.54
DERAISMAILKHAN	2008	68.16	100.00	82.89	13.42	47.23	50.66	3.48	29.17
DERAISMAILKHAN	2010	36.46	100.00	83.15	4.92	46.36	50.21	0.97	28.12
DERAISMAILKHAN	2012	47.77	100.00	77.23	7.24	44.04	48.82	1.42	27.63
DERAISMAILKHAN	2014	12.68	100.00	74.34	1.34	42.04	47.51	0.22	26.73
TANK	2004	61.16	100.00	92.47	11.44	50.11	51.76	3.06	29.14
TANK	2006	70.52	100.00	85.87	13.62	48.99	52.18	3.34	30.25
TANK	2008	68.04	100.00	84.84	12.30	45.08	48.49	3.08	26.12
TANK	2010	38.71	100.00	87.86	5.86	48.03	50.69	1.21	28.31
TANK	2012	48.19	100.00	87.26	6.72	48.99	51.94	1.38	30.02
TANK	2014	17.49	100.00	82.06	2.02	46.38	50.58	0.33	28.94
MANSEHRA	2004	40.21	99.62	67.65	5.67	36.79	43.48	1.23	23.05
MANSEHRA	2006	31.65	100.00	70.80	4.80	37.54	44.04	1.06	22.93
MANSEHRA	2008	39.94	100.00	56.17	5.24	30.39	39.60	0.99	19.79
MANSEHRA	2010	19.85	99.77	58.54	2.07	32.72	40.81	0.34	21.65
MANSEHRA	2012	19.60	99.47	59.68	2.04	32.48	40.79	0.33	20.88
MANSEHRA	2014	2.76	99.21	55.15	0.25	31.19	39.76	0.03	21.12
ABBOTTABAD	2004	28.30	99.56	56.83	3.42	28.02	36.73	0.66	16.71
ABBOTTABAD	2006	10.89	99.66	59.14	1.39	28.27	37.65	0.24	16.44
ABBOTTABAD	2008	14.13	98.90	47.80	1.37	22.20	33.75	0.21	13.67

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
ABBOTTABAD	2010	15.11	97.94	49.16	1.63	23.76	33.32	0.28	14.46
ABBOTTABAD	2012	6.27	98.91	32.16	0.40	13.99	25.68	0.03	9.00
ABBOTTABAD	2014	0.00	97.27	37.98	0.00	17.47	28.96	0.00	10.99
BATTAGRAM	2004	55.64	100.00	85.94	8.22	48.22	51.49	1.75	29.41
BATTAGRAM	2006	53.25	100.00	86.01	8.93	52.00	55.23	2.04	34.44
BATTAGRAM	2008	60.54	99.81	69.20	9.49	34.80	41.79	2.04	20.27
BATTAGRAM	2010	27.31	100.00	58.39	3.30	28.86	38.17	0.55	17.66
BATTAGRAM	2012	31.39	100.00	71.15	3.14	38.31	44.37	0.47	23.61
BATTAGRAM	2014	6.83	100.00	78.00	0.45	45.27	50.03	0.05	29.24
KOHISTAN	2004	52.16	100.00	97.38	9.88	61.36	62.06	2.58	41.19
KOHISTAN	2006	54.37	100.00	98.37	8.29	65.24	65.66	1.75	44.83
KOHISTAN	2008	70.24	100.00	99.62	9.78	69.75	69.83	1.88	50.42
KOHISTAN	2010	35.12	100.00	97.62	3.70	63.27	63.84	0.61	42.80
KOHISTAN	2012	46.98	100.00	98.68	5.88	66.70	67.02	1.05	46.43
KOHISTAN	2014	6.71	100.00	96.49	0.69	61.13	62.03	0.11	41.11
HARIPUR	2004	29.27	100.00	62.57	4.14	33.75	41.33	0.87	21.19
HARIPUR	2006	14.28	99.82	58.58	1.86	29.81	39.05	0.40	18.37
HARIPUR	2008	17.09	99.30	38.19	1.73	18.72	30.74	0.26	12.73
HARIPUR	2010	12.03	99.76	32.59	1.14	13.91	27.22	0.17	9.28
HARIPUR	2012	6.11	98.26	32.43	0.73	15.34	28.35	0.12	10.89
HARIPUR	2014	2.59	96.52	28.75	0.08	12.92	24.65	0.00	8.59
BANNU	2004	47.91	100.00	75.67	8.37	39.00	44.98	1.99	23.12
BANNU	2006	51.89	100.00	84.45	8.81	47.41	51.15	1.96	29.16
BANNU	2008	63.75	99.97	74.88	10.49	38.02	43.32	2.35	21.89
BANNU	2010	27.11	99.84	78.78	3.49	40.54	45.61	0.72	23.40
BANNU	2012	43.52	100.00	75.78	6.22	39.42	44.54	1.98	22.82
BANNU	2014	4.45	100.00	62.74	0.37	32.08	39.92	0.04	19.16
LAKKIMARWAT	2004	63.92	100.00	86.37	12.57	51.68	54.99	3.40	33.68
LAKKIMARWAT	2006	54.89	100.00	87.34	9.12	50.40	53.19	2.05	31.51
LAKKIMARWAT	2008	65.88	100.00	79.22	11.01	44.46	49.28	2.50	27.77
LAKKIMARWAT	2010	46.40	100.00	90.36	5.72	54.40	56.72	1.01	34.95
LAKKIMARWAT	2012	44.38	99.80	69.71	5.64	38.43	45.11	1.02	24.42
LAKKIMARWAT	2014	6.23	100.00	68.76	0.66	36.44	42.28	0.10	21.78
MARDAN	2004	56.72	99.48	66.12	10.68	33.21	40.16	2.88	19.19
MARDAN	2006	46.18	99.08	62.17	6.88	30.19	38.15	1.37	17.54
MARDAN	2008	52.55	99.05	57.45	9.17	28.86	37.15	2.20	17.23
MARDAN	2010	28.91	98.70	63.12	4.03	32.91	39.84	0.79	19.91
MARDAN	2012	17.65	99.87	59.89	1.84	28.99	36.71	0.28	16.50
MARDAN	2014	4.11	98.22	39.09	0.38	18.20	29.02	0.05	11.27
SWABI	2004	42.97	98.95	64.43	7.09	34.03	40.21	1.63	20.46
SWABI	2006	42.86	99.82	74.95	6.71	40.51	46.06	1.43	24.45
SWABI	2008	49.86	100.00	54.83	7.44	26.30	34.98	1.59	15.40
SWABI	2010	25.70	99.15	53.29	3.35	27.73	36.60	0.70	17.58
SWABI	2012	17.46	99.55	52.10	1.81	23.94	32.81	0.30	13.45
SWABI	2014	1.52	99.73	50.08	0.10	24.43	35.24	0.01	15.35
BALOCHISTAN									
QUETTA	2004	16.55	99.51	78.57	1.98	44.18	48.70	0.36	27.29
QUETTA	2006	46.02	99.88	78.76	7.76	43.71	48.17	1.83	26.54
QUETTA	2008	52.01	99.47	64.83	9.61	33.08	40.45	2.34	19.70
QUETTA	2010	3.11	99.33	67.41	0.22	33.74	40.42	0.02	19.37
QUETTA	2012	7.30	99.60	54.78	0.56	25.63	34.71	0.07	14.81
QUETTA	2014	11.87	99.80	61.57	1.91	29.36	37.77	0.43	16.64

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
PISHIN	2004	37.62	100.00	82.49	5.21	43.29	47.11	1.20	24.95
PISHIN	2006	81.50	100.00	91.99	17.83	54.31	56.52	4.89	34.45
PISHIN	2008	81.59	100.00	81.01	18.26	44.84	49.41	4.99	27.67
PISHIN	2010	2.06	100.00	89.54	0.19	44.41	46.56	0.02	23.63
PISHIN	2012	29.98	99.14	75.42	3.42	42.65	48.16	0.58	26.86
PISHIN	2014	15.48	99.85	85.44	1.69	49.46	52.70	0.26	30.93
QILLAABDULLAH	2004	42.79	100.00	95.56	5.89	58.28	59.24	1.10	37.60
QILLAABDULLAH	2006	80.23	100.00	98.58	20.91	68.46	68.80	6.57	49.40
QILLAABDULLAH	2008	89.67	100.00	96.00	24.12	60.36	61.23	7.60	40.23
QILLAABDULLAH	2010	7.14	100.00	96.60	0.60	54.69	55.46	0.08	32.43
QILLAABDULLAH	2012	69.36	100.00	95.02	10.86	60.27	61.50	2.52	40.45
QILLAABDULLAH	2014	41.67	100.00	98.76	6.89	68.83	69.19	1.69	49.41
CHAGAI	2004	49.45	100.00	92.26	6.94	56.26	58.06	1.36	37.05
CHAGAI	2006	84.51	100.00	92.70	19.05	62.37	64.20	5.30	44.59
CHAGAI	2008	85.88	100.00	92.82	18.41	55.58	57.35	4.87	35.93
CHAGAI	2010	26.66	100.00	96.26	1.76	61.53	62.35	0.17	41.60
CHAGAI	2012	39.69	100.00	87.28	4.42	51.03	53.76	0.72	32.41
CHAGAI	2014	12.15	99.88	86.12	1.04	50.93	54.28	0.12	33.42
SIBI	2004	28.05	100.00	91.72	3.36	55.30	57.36	0.55	36.57
SIBI	2006	72.28	99.62	84.42	18.44	54.03	56.52	5.97	37.63
SIBI	2008	79.35	100.00	88.51	17.98	54.96	57.76	4.83	36.65
SIBI	2010	6.58	100.00	78.84	0.61	44.69	49.33	0.09	27.84
SIBI	2012	31.12	99.09	79.12	3.57	43.38	47.33	0.58	26.23
SIBI	2014	26.31	99.85	91.69	3.10	60.68	62.30	0.54	42.64
ZIARAT	2004	25.15	100.00	92.64	2.26	51.29	53.12	0.30	30.24
ZIARAT	2006	68.45	99.84	83.49	13.54	46.39	50.00	3.56	28.44
ZIARAT	2008	70.59	100.00	90.42	9.66	44.80	47.22	2.00	23.82
ZIARAT	2010	4.00	100.00	91.60	0.20	51.50	53.59	0.02	30.66
ZIARAT	2012	34.14	100.00	66.87	2.99	33.70	41.05	0.39	19.71
ZIARAT	2014	49.28	100.00	93.36	6.74	62.79	64.29	1.31	44.73
KOHLU	2004								
KOHLU	2006	88.54	100.00	99.48	20.11	73.78	73.89	5.38	56.20
KOHLU	2008	94.79	100.00	98.51	18.63	63.27	63.68	4.17	41.71
KOHLU	2010	23.15	100.00	98.81	2.25	63.68	63.97	0.32	42.52
KOHLU	2012	50.41	100.00	99.87	5.06	73.27	73.31	0.75	54.96
KOHLU	2014	14.86	100.00	96.67	1.17	57.98	58.63	0.14	37.05
DERABUGTI	2004								
DERABUGTI	2006	88.97	100.00	99.20	19.08	72.84	72.99	5.24	55.12
DERABUGTI	2008	96.28	100.00	98.15	24.79	67.44	67.76	7.43	49.13
DERABUGTI	2010	27.50	100.00	100.00	1.86	71.38	71.38	0.19	52.22
DERABUGTI	2012	58.79	100.00	98.41	6.25	67.09	67.51	0.91	47.33
DERABUGTI	2014	46.77	100.00	93.39	6.00	56.31	57.90	1.09	35.76
KALAT	2004	27.08	99.64	91.63	2.70	54.27	55.84	0.40	34.77
KALAT	2006	70.00	100.00	86.07	14.01	45.88	49.11	3.80	26.72
KALAT	2008	91.75	100.00	98.16	21.55	62.44	62.91	5.97	41.20
KALAT	2010	12.92	100.00	75.45	0.86	38.66	44.26	0.08	22.61
KALAT	2012	34.16	100.00	89.54	3.47	45.25	48.03	0.50	24.48
KALAT	2014	7.98	100.00	69.64	0.47	34.15	40.57	0.05	19.46
MASTUNG	2004	31.47	100.00	86.31	3.94	48.93	51.75	0.65	30.33
MASTUNG	2006	54.20	100.00	74.12	9.74	32.96	38.92	2.23	16.77
MASTUNG	2008	89.08	100.00	97.01	23.01	62.12	62.85	6.88	41.89
MASTUNG	2010	6.45	100.00	57.56	0.43	30.70	39.55	0.04	19.70

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
MASTUNG	2012	34.52	100.00	67.62	3.45	35.99	42.53	0.51	21.69
MASTUNG	2014	20.07	100.00	77.11	1.66	39.51	44.67	0.19	22.92
KHUZDAR	2004	26.38	100.00	94.29	2.56	59.56	61.04	0.42	39.73
KHUZDAR	2006	75.10	100.00	89.78	15.16	50.66	53.12	3.83	30.87
KHUZDAR	2008	85.71	100.00	97.87	20.45	60.29	60.84	5.44	38.51
KHUZDAR	2010	15.34	100.00	80.57	1.02	43.51	47.73	0.11	26.04
KHUZDAR	2012	33.64	100.00	90.24	3.63	51.75	54.14	0.53	31.91
KHUZDAR	2014	19.29	100.00	83.16	1.94	43.48	47.14	0.25	24.94
AWARAN	2004	32.50	100.00	91.98	3.52	52.65	54.63	0.55	32.18
AWARAN	2006	57.01	100.00	90.26	8.21	51.25	53.59	1.55	31.12
AWARAN	2008	85.58	100.00	84.16	16.19	52.13	55.85	4.00	35.38
AWARAN	2010	12.08	100.00	62.44	0.61	31.04	39.77	0.05	18.74
AWARAN	2012	38.75	100.00	94.67	3.88	57.53	58.83	0.57	36.82
AWARAN	2014	37.63	100.00	77.72	2.58	42.62	47.62	0.31	25.97
KHARAN	2004	30.00	100.00	94.06	3.18	52.99	54.51	0.47	31.81
KHARAN	2006	74.72	100.00	90.22	13.21	51.57	53.98	3.03	32.18
KHARAN	2008	93.14	100.00	93.01	21.13	53.79	55.54	5.66	33.20
KHARAN	2010	17.59	100.00	86.57	0.84	47.27	50.44	0.07	27.84
KHARAN	2012	42.21	100.00	91.74	4.02	52.82	54.95	0.55	32.79
KHARAN	2014	27.26	100.00	86.91	2.73	53.01	55.89	0.40	35.19
LASBELA	2004	37.20	100.00	92.63	4.79	56.00	57.67	0.88	36.13
LASBELA	2006	72.60	100.00	95.88	17.18	60.35	61.30	5.11	40.35
LASBELA	2008	58.31	100.00	90.40	8.66	51.32	53.78	1.89	31.28
LASBELA	2010	23.43	100.00	92.89	1.96	58.49	60.15	0.29	39.68
LASBELA	2012	22.29	100.00	90.21	2.29	52.41	54.77	0.37	32.74
LASBELA	2014	12.44	100.00	93.03	1.33	57.63	59.54	0.20	38.13
KECH	2004	12.77	100.00	88.71	1.27	51.02	53.80	0.18	31.44
KECH	2006	64.16	100.00	92.09	10.65	57.64	59.52	2.31	38.61
KECH	2008	78.74	100.00	86.18	13.22	49.13	52.19	2.70	30.30
KECH	2010	8.66	100.00	95.64	0.38	60.00	61.07	0.03	39.72
KECH	2012	31.71	100.00	78.43	2.80	46.08	50.66	0.34	30.38
KECH	2014								
GWADAR	2004	19.48	100.00	97.11	1.99	63.03	63.83	0.32	42.45
GWADAR	2006	49.98	100.00	90.26	9.41	55.85	58.54	2.27	36.75
GWADAR	2008	53.53	100.00	82.13	8.53	47.63	51.42	1.77	30.82
GWADAR	2010	7.20	100.00	95.44	0.36	56.89	58.09	0.03	36.00
GWADAR	2012	25.15	100.00	69.29	2.75	36.23	42.46	0.42	21.94
GWADAR	2014	5.72	100.00	89.71	0.30	48.40	51.15	0.02	28.19
PANJGUR	2004	28.70	100.00	92.76	3.48	56.64	58.16	0.61	36.80
PANJGUR	2006	75.26	100.00	94.31	13.11	61.36	62.91	2.95	42.28
PANJGUR	2008	78.82	100.00	81.67	13.42	49.62	53.84	2.93	33.19
PANJGUR	2010	4.89	100.00	98.40	0.27	62.41	62.91	0.02	41.04
PANJGUR	2012								
PANJGUR	2014								
ZHOB	2004	36.91	100.00	97.78	4.75	63.66	64.13	0.87	43.34
ZHOB	2006	73.24	100.00	87.38	14.36	52.51	55.42	3.68	33.87
ZHOB	2008	86.03	100.00	92.24	21.57	58.73	60.15	6.40	39.88
ZHOB	2010	14.68	100.00	92.36	1.08	50.79	52.73	0.14	30.49
ZHOB	2012	50.96	100.00	92.80	6.30	59.23	61.00	1.09	40.65
ZHOB	2014	9.37	100.00	95.42	0.62	61.78	62.91	0.07	41.80
LORALAI	2004	32.73	100.00	96.94	3.68	60.65	61.50	0.61	39.69
LORALAI	2006	80.75	100.00	96.44	15.46	60.04	60.83	3.75	39.48

DISTRICT	YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
LORALAI	2008	86.85	100.00	93.56	22.26	52.41	54.23	6.52	32.38
LORALAI	2010	37.31	100.00	98.23	3.23	60.69	61.13	0.39	39.90
LORALAI	2012	20.59	100.00	95.94	1.61	57.80	58.74	0.20	36.58
LORALAI	2014	5.89	100.00	77.69	0.35	37.69	42.97	0.03	20.58
BARKHAN	2004	27.16	100.00	94.82	2.99	65.35	66.68	0.55	47.12
BARKHAN	2006	75.33	100.00	94.68	14.14	54.19	55.53	3.36	32.94
BARKHAN	2008	88.82	100.00	93.44	18.88	55.31	56.93	4.67	34.79
BARKHAN	2010	32.43	100.00	99.17	2.32	59.01	59.26	0.28	36.16
BARKHAN	2012	48.57	100.00	98.90	4.69	63.23	63.41	0.64	41.43
BARKHAN	2014	9.89	100.00	98.14	0.74	70.55	70.96	0.09	52.39
MUSAKHEL	2004	27.25	100.00	98.80	2.82	68.25	68.64	0.46	48.58
MUSAKHEL	2006	81.30	100.00	97.52	15.48	57.97	58.54	3.79	36.01
MUSAKHEL	2008	94.40	100.00	95.82	23.09	61.22	62.21	6.60	41.33
MUSAKHEL	2010	52.09	100.00	95.90	4.44	53.04	54.18	0.55	30.50
MUSAKHEL	2012	27.77	100.00	98.72	2.26	61.72	62.08	0.26	39.79
MUSAKHEL	2014	11.78	100.00	72.72	0.92	40.41	46.05	0.11	25.06
QILLASAIFULLAH	2004	46.52	100.00	98.82	6.14	69.23	69.59	1.16	50.75
QILLASAIFULLAH	2006	87.82	100.00	96.43	20.31	63.14	64.18	5.69	43.36
QILLASAIFULLAH	2008	93.68	100.00	94.96	22.11	60.17	61.34	6.03	40.04
QILLASAIFULLAH	2010	12.82	100.00	93.93	0.86	54.26	55.75	0.09	33.50
QILLASAIFULLAH	2012	52.42	100.00	97.76	6.26	61.13	61.80	1.00	39.86
QILLASAIFULLAH	2014	4.51	100.00	92.68	0.13	47.98	49.97	0.01	26.40
NASIRABAD	2004	21.63	100.00	93.86	2.75	57.06	58.62	0.54	37.39
NASIRABAD	2006	86.30	100.00	98.10	21.74	69.18	69.71	6.54	50.71
NASIRABAD	2008	93.38	100.00	96.12	23.12	57.47	58.44	6.64	36.40
NASIRABAD	2010	30.59	100.00	94.88	2.24	57.88	59.14	0.26	37.77
NASIRABAD	2012	50.19	100.00	94.08	5.85	61.09	62.46	0.92	42.38
NASIRABAD	2014	23.30	99.54	93.99	2.66	53.35	54.54	0.45	32.54
JAFARABAD	2004	19.29	100.00	92.95	1.64	50.63	52.38	0.23	29.88
JAFARABAD	2006	81.52	99.81	97.13	19.64	65.26	65.81	5.86	46.16
JAFARABAD	2008	88.93	99.54	91.46	20.85	50.51	52.26	5.89	29.93
JAFARABAD	2010	26.69	100.00	91.60	2.00	53.55	55.73	0.25	33.31
JAFARABAD	2012	50.81	100.00	91.42	5.57	54.11	55.74	0.82	34.14
JAFARABAD	2014	30.40	100.00	90.31	3.06	52.66	54.62	0.50	32.83
JHAL-MAGSI	2004	31.93	100.00	98.53	3.31	62.86	63.09	0.57	42.18
JHAL-MAGSI	2006	89.20	100.00	94.33	20.44	58.94	60.36	5.71	39.07
JHAL-MAGSI	2008	95.63	100.00	97.35	24.68	63.14	63.64	7.27	43.03
JHAL-MAGSI	2010	14.79	100.00	87.51	1.00	44.88	47.97	0.10	24.93
JHAL-MAGSI	2012	34.13	100.00	90.37	3.44	56.74	58.83	0.55	38.59
JHAL-MAGSI	2014	31.49	100.00	93.67	3.52	57.60	58.94	0.58	37.93
BOLAN	2004	26.24	100.00	94.16	2.59	55.91	57.00	0.43	35.78
BOLAN	2006	77.02	100.00	94.98	18.71	63.08	64.08	6.04	44.78
BOLAN	2008	89.06	100.00	98.68	23.33	66.01	66.29	6.92	45.65
BOLAN	2010	14.73	100.00	91.51	0.86	53.12	55.22	0.07	33.00
BOLAN	2012	47.41	100.00	92.97	5.07	61.34	62.97	0.79	43.01
BOLAN	2014	18.11	100.00	90.81	1.83	54.07	56.05	0.26	34.84

Appendix F

Table F1

Poverty Estimates at Provincial Level

YEAR	PROVINCE	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
2004	Punjab	37.83	94.44	51.11	6.62	26.60	34.61	1.70	16.58
2006	Punjab	33.58	92.65	48.13	5.88	25.24	33.32	1.45	15.97
2008	Punjab	43.20	91.38	42.31	8.68	21.25	30.02	2.49	13.29
2010	Punjab	24.91	91.16	39.63	3.53	19.96	28.85	0.74	12.65
2012	Punjab	21.33	89.38	35.65	3.35	15.39	24.39	0.79	11.18
2014	Punjab	12.65	88.25	31.63	1.52	17.53	26.82	0.29	9.85
2004	Sindh	34.34	90.66	57.23	6.20	32.27	37.97	1.63	20.62
2006	Sindh	42.22	87.42	55.38	8.43	32.40	37.69	2.23	21.42
2008	Sindh	49.60	84.36	50.89	10.77	27.88	33.73	3.11	17.60
2010	Sindh	29.20	84.07	49.53	3.71	26.88	32.63	0.68	16.82
2012	Sindh	31.89	80.89	47.00	4.83	23.86	29.77	1.01	16.22
2014	Sindh	17.30	81.10	43.69	2.12	25.73	31.18	0.38	15.19
2004	KhyberPakhtunkhwa	49.79	97.44	67.46	8.89	36.84	42.76	2.23	22.83
2006	KhyberPakhtunkhwa	44.27	98.07	67.84	7.01	36.77	42.96	1.56	22.73
2008	KhyberPakhtunkhwa	53.71	96.59	60.61	8.85	32.40	39.46	2.04	20.19
2010	KhyberPakhtunkhwa	28.47	95.89	57.81	3.69	30.38	37.76	0.72	18.79
2012	KhyberPakhtunkhwa	25.62	95.07	51.64	3.08	25.94	34.37	0.58	16.95
2014	KhyberPakhtunkhwa	5.43	94.50	50.22	0.54	27.00	35.07	0.09	16.27
2004	Balochistan	28.48	99.15	83.57	3.37	48.81	52.03	0.60	31.08
2006	Balochistan	71.82	98.37	81.48	15.43	49.98	53.36	4.27	33.41
2008	Balochistan	80.52	97.30	79.01	17.98	46.33	49.95	4.88	29.70
2010	Balochistan	15.98	98.01	77.40	1.15	44.05	48.05	0.13	27.63
2012	Balochistan	36.90	98.00	74.06	4.14	41.70	46.79	0.69	28.14
2014	Balochistan	20.69	98.38	73.15	2.47	43.35	48.05	0.47	26.63

Table F2

Poverty Estimates at National Level

YEAR	HH	MDPI-HH	MPI-HH	PG	MPI_33	MPI_0	SPG	MDPI
2004	38.32	94.16	56.16	6.71	30.27	37.25	1.71	18.99
2006	38.98	92.46	54.29	7.10	29.79	36.71	1.78	19.07
2008	48.09	90.78	48.78	9.67	25.66	33.24	2.69	16.11
2010	25.95	90.55	46.45	3.47	24.28	31.99	0.69	15.26
2012	25.17	88.63	42.46	3.70	20.28	28.24	0.81	14.01
2014	13.20	87.84	39.29	1.58	22.06	30.05	0.29	12.91