

# MEASUREMENT OF LIVING STANDARDS DEPRIVATION IN LAHORE (PERIODICAL COMPARISON APPROACH)

Presented by

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# INTRODUCTION

Poverty is pronounced as **deprivation in well-being**.

The conventional view links **well-being** primarily to **command over commodities**.

So poor are those who do not have enough **income or consumption** to put them above some adequate **minimum threshold (unidimensional approach)**

A person is said to be a poor if he/she is maintaining the low standards of living and he is unable to fulfil the basic needs in order to sustain in the society (World Bank, 1990).

# INTRODUCTION.....

- ▶ **Income poverty** is not a good measure of poverty because it doesn't show the actual picture of an individual's deprivation and ignores other crucial factors such as health, human security as well as education, which play an important role in human capabilities (Sen, 1999).
- ▶ **Alkire & Santos (2010)** pointed **03 dimensions of core human functioning** i.e., **health, education and living standards** that should be questioned, observed, analyzed and tackled in order to reduce poverty and enhance well-being of the people.

# INTRODUCTION.....

How we measure poverty, How we come to understand it, how we analyze it, and how we create policies to influence it can importantly influence poverty.

In recent years, the literature on multidimensional poverty measurement has blossomed in a number of different directions.

The Millennium Declaration, MDGs (2015) and Sustainable Development Goals (2016) have further highlighted the importance of multiple dimensions of poverty.

Multidimensional phenomenon of poverty has emerged from unidimensional approach.

# INTRODUCTION.....

In spite of taking and implementing various measures by the **GOP** as well as **Govt. of Punjab** to alleviate poverty in Lhr division, **poverty is still there** and has become a constraint in the way of econ. progress and prosperity of the people of the Lahore.

# OBJECTIVES OF THE STUDY

- ▶ The **key objective** is to estimate **MPI** for the periods **2011 & 2014** for **Lahore Division**, using **MICS** data, & going deep into different Areas, and Districts of Lahore Division to have neck to neck evaluations and comparison of the poverty status.
- To estimate depth and intensity of Multidimensional poverty across division
- To determine the absolute contribution of 8 determinants in overall poverty across division.

# SIGNIFICANCE OF THE STUDY

- ▶ The two period comparison *i.e.*, the years 2011 & 2014 proves helpful to track the changes in multidimensional poverty over time in 04 districts of the Lahore division.
- ▶ It provides a picture of the poverty status and helps to monitor the disparities among different areas, and districts of the Lahore division.
- ▶ It will also be helpful in auditory analysis of the allocated funds to specific areas & districts of the Lahore division.

# SIGNIFICANCE OF THE STUDY.....

- ▶ The finding of this study could offer a base for formulation of sound policies for deprived areas and districts of the Lahore, exclusively to public and private organizations for the **betterment of rural households through rise in their living standards.**



# SIGNIFICANCE OF THE STUDY.....

- ▶ The research is an noble input to **understand the absolute contribution** of each indicator in multidimensional poverty.
- ▶ It will **strengthen the work of the Urban Unit** ( A Public Sector Organization) and **Planning & development Departments.**

# DELIMITATION OF THE STUDY

- ▶ This study is *delimited* to two period comparison i.e., for the periods 2011 & 2014 because of the non-availability of MICS data for current periods (after 2014).
- ▶ The study is also *delimited* geographically to Lahore division only as Lahore division having 04 districts is the 2<sup>nd</sup> largest populated division of Pakistan.

People from different **casts**, **backgrounds** and **religious beliefs** are residing here. The **Lahore district** holds the diversity of markets and a broad spectrum of education.

# REVIEW OF LITERATURE

- ▶ The HDR, 1997 presented the most realistic approach by not only highlighting the poverty of income, but also on poverty from human development outlook i.e., poverty as a contradiction of choices and opportunities to live comfortable lifespan.
- ▶ To eradicate the poverty from the world, “A Compact among Nations to End Human Poverty-HDR (2003)”, and UN Millennium Declaration was made. The main goals were maintaining social equality, impartiality and achieving peace & ecological sustainability by 2015 or earlier.

# REVIEW OF LITERATURE.....

- ▶ Mahbub ul Haq's HDI (HDR, 1990)

In spite of the significance HDI, HDI is being criticized for choice of variables, predetermined weighting methodology and redundancy.

- ▶ Ghaus, Pasha & Ghaus (1996) and Noorbakhsh (1998)- an other way to assign weights to the dimensions and variables
- ▶ Julia Salzman (2003) in her article "Centre for the Study of Living Standards" pointed out the methodological adoptions in the construction of composite, economic and social welfare indices.
- ▶ Jamal, et al. (2003), uses the Index of Multiple Deprivation (IMD) based upon the 1998 Population and Housing Census Pakistan data.

# REVIEW OF LITERATURE.....

- ▶ Jamal et.al (2009), Constructed District Human Development Indices for the Punjab for periods 2004 & 2008 by using HDI methodology and Housing Census Pakistan data that focuses the poverty alleviation concerns in Pakistan.
- ▶ Constructing Punjab Indices of Multiple Deprivations 2003-04 & 2007-08, Jamal et.al (2011) presented the income poverty results using MICS data. However the authors ignore the multidimensional aspect of poverty. These indices of multiple deprivations are intended to evaluate the poorest or socially excluded segment of the society.

- ▶ In 2007, Sabina Alkire & James Foster developed the basic methodology for measuring MD poverty, known as **MPI**
- ▶ Alkire & Santos (2010) in their paper developed **MPI** for 104 countries.

# REVIEW OF LITERATURE.....

- ▶ Instead of using **direct income or consumption approaches**, which have their own data constraints and are very probable to be influenced with the annexation of random disturbance terms, Multiple indicators which are directly related to living standards have been considered.
- ▶ The literature review on poverty suggests that

**MPI is the very adequate alternate for measuring the acute, absolute and relative poverty.**

# Summary of Studies conducted

<b>Unidimensional Poverty</b>	(Kakwani, 2003) ; Haq, 2004; Rao, 2006; Cheema & Sial,2010;.....)	Emphasized to measure poverty by using <b>income</b> and/or <b>expenditure</b> method
<b>Living Standard deprivations/ Multidimensional Poverty</b>  (Studies Conducted outside Pakistan)	(Sen, 1990; Bourguignon & Chakravarty, 2002; Wagle, 2005; Batana, 2008; Bossert, Chakravarty & Ambrosio, 2010; Ataguba et al. , 2011; Adeoti, 2014)	Conducted research in developing and developed countries and detected factors regarding Education, Health and Living standards causing multidimensional poverty.
<b>Living Standard deprivations/ Multidimensional Poverty</b>  (Studies Conducted in context of Pakistan)	(Hussain, 2004; Chaudary, 2009; Awan & Iqbal, 2010; Naveed & Aslam, 2010; Yasmeen, Begum & Mujtaba, 2011; Niazi & Khan, 2012; Ali & Ahmad, 2013; Afzal, Rafique & Hameed; Khan et al., 2014; Jali & Ayub, 2015; Zahra & Zafar, 2015; Khan, Saboor, Malik & Mahmood, 2016)	Considered various determinants of poverty and data sets in order to find multidimensional poverty in different regions of the country.



# DATA SOURCES & SAMPLE DESIGN

- ▶ MICS Punjab, 2011 & 2014 provide representative household survey estimates regarding more than 90 indicators on area of residence (major cities, other urban and rural), 9 divisions, 36 districts and 150 tehsils

# DATA SOURCES AND SAMPLE DESIGN.....

- ▶ The sample has been selected in two stages.
  - ▶ In urban areas, the first-stage selection unit is the Enumeration Block
  - ▶ In rural areas, the first-stage selection unit is the Village.
  - ▶ From each first-stage sample unit, a sample of households has been selected: 16 in the rural areas and 12 in the urban areas.

# INDICATORS, WEIGHTS AND CUTOFFS

- ▶ For the measurement of MPI, **08 indicators** from the household characteristics module of MICS 2011 & 2014 are considered with the total weight evenly distributed among them.
- ▶ The reason for the inclusion of these indicators is that most of the data obtained in these module are the results of the observational and visual reports of the enumerators. So, the chances of false information are very low.

# Table 1: Indicators, Weights and Cutoffs by UN Definition

Indicator	Relative Weight	Deprivation Cut-off
Access to Drinking Water	1/8	A household is consider deprived if it has unimproved source for “access to drinking water” (unprotected well, unprotected spring, pond, tanker-truck, cart, surface , other)
Source of Sanitation (TOILET FACILITY)	1/8	A household is consider deprived if it has unimproved source of “sanitation (toilet facility)”:(flush somewhere else, flush to unknown place, pit latrine without slab, composite toilet, bucket, no facility/bush/field, other).
Main Material of Floor	1/8	A household is considered deprived if it has unimproved “floor material” (earth/sand, dung plastered)
Main Material of Roof	1/8	A household is considered deprived if it has unimproved “roof material” (no roof, thatch/palm leaf, wood planks, metal, wood)
Antenatal Care	1/8	women who did not get antenatal care of get it less than 4 visits is consider deprived
Immunization	1/8	The indicator is defined as the process by which a household/child is immune to the infectious diseases. The child is deprived and counted in the multidimensional poverty if not received vaccination to infectious disease
Years of Schooling	1/8	Any school-aged child is not attending school up to class 8.
Adult Literacy	1/8	No household member has completed five years of schooling

# ACHIEVEMENT MATRIX

- ▶ The  $X$  is the one which represents the outcome of the indicators for each household; it is of the order  $n \times d$ , in this particular case of MICS 2014, the  $X$  will be of the form:

- ▶  $X(2014) = \begin{bmatrix} x_{11} & \cdots & x_{18} \\ \vdots & \ddots & \vdots \\ x_{31079\ 1} & \cdots & x_{31079\ 8} \end{bmatrix}$

- ▶ For MICS 2011, the  $X$  will be of the form:

- ▶  $X(2011) = \begin{bmatrix} x_{11} & \cdots & x_{18} \\ \vdots & \ddots & \vdots \\ x_{77866\ 1} & \cdots & x_{77866\ 8} \end{bmatrix}$

# Deprivation Cutoff Vector

- ▶ A vector  $Z_j = [\text{Improved}, \text{Improved}, \text{Improved}, \text{Improved}, \text{Improved}, \text{Improved}, \text{Improved}, \text{Improved 50\% of Assets}]$  for 8 deprivation cutoffs (one for each dimension) is used to determine whether a person is deprived.
- ▶ If the person's achievement level in a given dimension "j" falls short of the respective deprivation cutoff  $Z_j$ , the person is said to be deprived in that dimension; if the person's level is at least as great as the deprivation cutoff, the person is not deprived in that dimension.



# DEPRIVATION MATRIX

- ▶ According to the cited criteria the entries in the achievement matrices are substituted into dichotomy *i.e.*,  $g^0_{ij} = 1$ , if  $X_{ij} < Z_j$  (Deprived) and,  $g^0_{ij} = 0$  if  $X_{ij} \geq Z_j$  (Non-Deprived). In this way the Deprivation Matrices  $g^0$ 's are obtained for both of MICS 2014 & 2011.

$$\begin{aligned} \text{▶ } g^0(2014) &= \begin{bmatrix} g^0_{11} & \cdots & g^0_{18} \\ \vdots & \ddots & \vdots \\ g^0_{31079\ 1} & \cdots & g^0_{31079\ 8} \end{bmatrix}, \\ \text{▶ } g^0(2011) &= \begin{bmatrix} g^0_{11} & \cdots & g^0_{18} \\ \vdots & \ddots & \vdots \\ g^0_{77866\ 1} & \cdots & g^0_{77866\ 8} \end{bmatrix} \end{aligned}$$

# Weighted Deprivation Matrix

- ▶ The relative weights  $W = [\frac{1}{8}, \frac{1}{8}, \frac{1}{8}, \frac{1}{8}, \frac{1}{8}, \frac{1}{8}, \frac{1}{8}, \frac{1}{8}]$  of the indicators are applied to the deprivation matrices. Such that  $g^0_{ij} = W_j = \frac{1}{8}$ , if  $X_{ij} < Z_j$  (Deprived) and  $g^0_{ij} = 0$ , if  $X_{ij} \geq Z_j$  (Non-Deprived) so that this study obtains the WDM as given below:

$$\text{▶ } g^0(w)(2014) = \begin{bmatrix} g^0_{11} & \cdots & g^0_{18} \\ \vdots & \ddots & \vdots \\ g^0_{31079\ 1} & \cdots & g^0_{31079\ 8} \end{bmatrix},$$

$$\text{▶ } g^0(w)(2011) = \begin{bmatrix} g^0_{11} & \cdots & g^0_{18} \\ \vdots & \ddots & \vdots \\ g^0_{77866\ 1} & \cdots & g^0_{77866\ 8} \end{bmatrix}$$



# DEPRIVATION COUNT VECTOR

- ▶ These vectors are the count or score of each person in all the indicators. It is the sum of weighted deprivations. *i.e.*,  $C_i = g_{i1} + g_{i2} + \dots + g_{i8}$ . The DCVs for MICS 2014 & 2011 are given below:

- ▶  $C(2014) = \begin{bmatrix} C_1 \\ C_2 \\ \vdots \\ C_{31079} \end{bmatrix}, \quad C(2011) = \begin{bmatrix} C_1 \\ C_2 \\ \vdots \\ C_{77866} \end{bmatrix}$

# POVERTY CUTOFF

► Given the poverty cutoff  $K$ , we compare the deprivation count with the  $K$  cutoff and then censor the deprivation of those who were not identified as poor:

► If  $\rho_K(x, ; Z) = 1$  , if  $C_i \geq K$

► If  $\rho_K(x, ; Z) = 0$  , if  $C_i < K$

# Censored Weighted Deprivation Matrix

- It is the key matrix over which we will perform the aggregation and find the set of AF measurements for  $M_o$  (MPI). Here  $g^{o_{ij}}(k) = W_j = \frac{1}{8}$ , if  $C_i \geq k$  ( Deprived and poor)  $g^{o_{ij}}(k) = 0$  , if  $C_i < k$  ( Deprived or not ,but non-poor).

- $g^o(k)(2014) = \begin{bmatrix} g^{o_{11}}(k) & \cdots & g^{o_{18}}(k) \\ \vdots & \ddots & \vdots \\ g^{o_{31079\ 1}}(k) & \cdots & g^{o_{31079\ 8}}(k) \end{bmatrix},$

- $g^o(k)(2011) = \begin{bmatrix} g^{o_{11}}(k) & \cdots & g^{o_{18}}(k) \\ \vdots & \ddots & \vdots \\ g^{o_{77866}}(k) & \cdots & g^{o_{77866\ 8}}(k) \end{bmatrix}$

# Censored Weighted Deprivation Count Vector

After the implementation of dual cutoffs, this vector counts the score of each Household from the censored weighted deprivation matrix. Here  $C_i(k) = C_i$ , if  $C_i \geq k$  and  $C_i(k) = 0$ , if  $C_i < k$

$$C(k)(2014) = \begin{bmatrix} C_1(k) \\ C_2(k) \\ \vdots \\ C_{31079}(k) \end{bmatrix}, C(k)(2011) = \begin{bmatrix} C_1(k) \\ C_2(k) \\ \vdots \\ C_{77866}(k) \end{bmatrix}$$

# HEADCOUNT RATIO OF MD POOR

► It is the proportion, who have been identify as poor. It is called incidence of poverty, or Poverty Rate.

$$\text{► } H(2014) = \frac{\sum_{i=1}^{31079} \rho_k(x_i; Z)}{31079} = \frac{q_{2014}}{31079} ,$$

$$\text{► } H(2011) = \frac{\sum_{i=1}^{77866} \rho_k(x_i; Z)}{77866} = \frac{q_{2011}}{77866}$$

# INTENSITY (BREADTH) OF MD POVERTY

- ▶ It is average proportion of deprivation in which the poor are deprived and is calculated as:

- ▶ 
$$A(2014) = \frac{\sum_{i=1}^{31079} C_i(k)}{8q_{2014}},$$

- ▶ 
$$A(2011) = \frac{\sum_{i=1}^{77866} C_i(k)}{8q_{2011}}$$

# $M_o$ (MPI)

▶ The final step for the calculation of Multidimensional Poverty Index (MPI):

$$M_o = H \times A$$

- ▶  $M_o$  = MPI
- ▶  $H$  = Incidence of poverty
- ▶  $A$  = Intensity of poverty

$M_o$  is developed by Alkire & Foster in 2007.

# RESULTS AND THEIR INTERPRETATION

## ► POVERTY IDENTIFICATION

- Considering the **range of k-cutoffs** to observe the pattern of each of the AF measurement, Table 2 shows the results for periods 2014 & 2011.



Table 2: A, H, M<sub>0</sub> at different K Cut-offs for 2014 & 2011

K- Cut-off (Percent)	2014			2011		
	Head Count (H)	Average Intensity (A)	M0 = MPI	Head Count (H)	Average Intensity (A)	M0 = MPI
10	1.000	0.451	0.451	1.000	0.456	0.456
20	0.904	0.482	0.435	0.889	0.493	0.438
30	0.760	0.525	0.399	0.827	0.511	0.422
40	0.631	0.564	0.356	0.632	0.566	0.358
50	0.465	0.617	0.287	0.493	0.608	0.230
60	0.191	0.727	0.139	0.190	0.722	0.137
70	0.110	0.771	0.085	0.092	0.780	0.721
80	0.017	0.884	0.015	0.025	0.860	0.007
90	0.010	0.918	0.009	0.008	0.923	.007
100	0.001	1.000	0.001	0.001	1.000	0.001

## Table 2: Interpretation

- ▶ On contrary it is observed that **average intensity is tending to rise** as the percentage of poverty is increasing.
- ▶ Average intensity is found low (0.451) for 2014 as compared to 2011 (0.456) at 10% Cut-offs.
- ▶ As the percentage of poverty cut-offs are surging, average intensity (A) is increased and becomes 100 percent for both of the time horizons (2011 & 2014).

(Average intensity is the average of multidimensional poor people)

# POVERTY IDENTIFICATION (K-CUTOFF 33 %)

Table 3: Poverty Identification

(K-Cutoff 33 %)

AF Measures	2011	2014	Rise/Fall
H	0.756	0.661	-0.095
A	0.483	0.477	-0.006
$M_0$	0.365	0.316	-0.049

- ▶ Results show a decline in each of the measures for the year 2014 as compared to year 2011.
- ▶ H and A have declined by 9.5% and 0.6%, respectively.
- ▶ MPI ( $M_0$ ) has declined by 4.9%.

# RESULTS AND THEIR INTERPRETATION.....

- ▶ **H is very high for both time periods** at poverty cutoff at 10% deprivations. *As we move from 10% to 100% poverty cutoff, it declines.*
- ▶ The average intensity **(A)** exhibits the **increasing pattern**, because it is average of MD poor.
- ▶ **With the increase in the poverty cutoffs, the value of  $M_0$  declines.**

( $M_0$  is the percentage of people who are MD poor and facing deprivations at the same time)

# Interpretation of the results at k-cutoff 33%

## ► *i) For the Period 2014*

- $H = 66.1\%$  of the people are multi-dimensionally poor.
- $A = 47.7\%$  poor people are facing the deprivations on the average.
- $MPI = M_0(2014) = 31.6\%$  people are multidimensional poor and deprived.

## ► *ii) For the Period 2011*

- $H = 75.6\%$  of the people are multi-dimensionally poor.
- $A = 48.3\%$  poor people are facing the deprivations on the average.
- $MPI = M_0(2011) = 36.5\%$  people are multidimensional poor and deprived.

# Lahore Division: Urban & Rural bifurcation

Table 4 :Urban & Rural Bifurcation of MPI of Lahore Division

	2014			2011			
	H	A	M <sub>0</sub>	H	A	M <sub>0</sub>	Rise/Fall
Urban	0.528	0.420	<b>0.222</b>	0.656	0.430	<b>0.282</b>	-0.060
Rural	0.750	0.504	<b>0.378</b>	0.860	0.526	<b>0.452</b>	-0.074
Lahore Division	0.661	0.477	<b>0.316</b>	0.755	0.482	<b>0.365</b>	-0.049

## Urban and Rural bifurcation of MPI ( $M_0$ ).....

- ▶ The decrease in the poverty is found 6% for the Rural & 7.4% Urban areas of Lahore division.
- ▶ The poverty in the rural areas of the Lahore division for period 2014 is found to be 15.6% more than that of the urban areas.
- ▶ The poverty in the rural areas of the Lahore division for period 2011 was found to be 17.0% more than that of the urban areas.

# Sorting by Districts and Bands of Poverty

- ▶ The results for both time periods are ranked from lowest to the highest poverty levels for 04 districts of the Lahore division and are presented Tables 5 & 6.
- ▶ On the basic of the poverty level, districts are classified into:
  - ▶ *Low* (up to 20%)
  - ▶ *Medium* (21% to 35%)
  - ▶ *High* (above 35%)

**BANDS OF POVERTY**



Table 5: Sorting by Districts and Bands of Poverty

DISTRICT	M <sub>0</sub> (2014) %	BANDS OF POVERTY
		LOW POVERTY
Lahore	20.9	MEDIUM POVERTY
Sheikhupura	31.0	
Nankana Sahib	34.3	
Kasur	45.2	HIGH POVERTY
DISTRICT	M <sub>0</sub> (2011) %	BANDS OF POVERTY
		LOW POVERTY
		MEDIUM POVERTY
Lahore	28.3	HIGH POVERTY
Sheikhupura	39.4	
Nankana Sahib	40.9	
Kasur	43.3	

# District-wise by Band of Poverty Comparison MPI 2011 vs. MPI 2014

- ▶ All the districts of Lahore division were under high poverty band during the period 2011.
- ▶ In 2014, All the districts of Lahore division except Kasur have revealed progress and are in medium band of poverty as these were tumbling under high poverty band in 2011.

# District-wise comparison MPI 2007 vs. MPI 2011

- ▶ All the districts showing decrease in poverty except **Kasur district**.
- ▶ Highest decrease is of 8.4% in the Sheikhupura followed by 7.4% in Lahore, 6.6% in Nankana Sahib.
- ▶ The 1.9% rise in poverty is observed in **Kasur district** of Lahore division.
- ▶ **In conclusion** the corresponding decline in the poverty has pushed 03 districts of Lahore division out of their ranked band of poverty.

Table 7 : District-wise Comparison of MPI  
2011 vs. MPI 2014

	2014			2011			Rise/Fall
	H	A	M <sub>0</sub>	H	A	M <sub>0</sub>	(%)
District							
Lahore	0.490	0.423	0.209	0.662	0.427	0.283	-7.4
Kasur	0.841	0.538	0.452	0.838	0.516	0.433	1.9
Nankana Sahib	0.721	0.476	0.343	0.788	0.518	0.409	-6.6
Sheikhupura	0.678	0.457	0.310	0.795	0.495	0.394	-8.4

Table 9: Absolute Contribution of Various Indicators of Poverty  
Comparing MPI(2014) by MPI(2011) {Rise(+)/Fall(-) in %}

Indicator	Dimension	Lahore Div.	District			
			Lahore	Kasur	Nankana Sahib	Sheikhupura
Access to Drinking Water	Living Standards	-0.1	-0.1	-0.2	0.0	0.0
Source of Sanitation		0.2	0.5	1.2	-0.3	-0.8
Main Material of Floor		-0.2	0.0	0.0	-0.4	-0.8
Main Material of Roof		1.1	0.7	2.7	-1.1	0.2
Antenatal Care	Health	-0.8	-1.1	0.0	-1.2	-1.6
Immunization		-3.0	-3.1	-1.8	-4.7	-2.9
Years of Schooling	Education	-0.6	-1.5	0.1	0.1	-0.6
Adult Literacy		-1.5	-2.8	1.0	-1%	-2.0

# CONCLUSION

- ▶ MPI for the **Lahore division** at different k-cutoffs and detailed results at 33% indicated **overall moderate level** in the economic barometers of living standards in 2014 as compared to 2011.
- ▶ The **disparities and issues are evident** when results are bifurcated **areas and district** wise.
- ▶ The **Rural area** of the **Lahore division** has almost **MPI 37.8%** in 2014 as compared to **45.2% in 2011**.

# CONCLUSION.....

- ▶ **District Kasur** are found to have isolated thresholds of MPI.
- ▶ **Kasur** has been found to have **high poverty**, whereas Lahore, Nankana Sahib, and Sheikhpura districts are having comparatively **Medium poverty in 2014**.
- ▶ Overall Multidimensional Poverty decreased in Lahore Division.
- ▶ **Kasur** has **rising trend of poverty** than Lahore, Nankana Sahib and Sheikupura districts.
- ▶ Among 03 dimensions, the **education is found absolutely contributing more** in multidimensional poverty reduction, especially **adult literacy** than others.

# RECOMMENDATIONS

- ▶ Area wise split-ups of the **Lahore division** is not having similar standing, so **uniform policy will not prove its worth to tackle poverty**.
- ▶ **Need to Focus on bands of poverty** and allocation of resources should be made accordingly. For instance, district **Kasur** need **more care** as compared to **Lahore, Nankana Sahib and Sheikupura districts of Lahore division**.
- ▶ **Rural poverty is contributing more than urban**. So policy makers should priorities the rural areas with respect to facilities of health, education and living standards.



# RECOMMENDATIONS

- Measurement of absolute contribution of each indicator in effecting poverty provides unique direction to policy makers to tackle 03 dimensions of poverty by various ways.

# FUTURE AVENUES

- ▶ As latest MICS data have not been yet completed and is in process. The findings of this study may be generalized using data of MICS 2007, 2011, 2014 and latest MICS data in the measurement of MPI.
- ▶ The sampling distribution of the  $A$  and  $M_0$  can be classified and test of goodness of fits can be performed in order to detect the underlying distributions of each.
- ▶ Based upon the findings and evidence of the distributions, the statistical inference and predictions can be made.

# FUTURE AVENUES.....

- ▶ **A robust analysis of the MPI class of measures** can be done. e.g., association among class of measures, Gap Analysis, Standard Error (Precision and Accuracy) etc.
- ▶ **Scientific method of assigning weights, if possible** to different indicators and dimensions may be used.

- ▶ **Exiting data sets** does not allow us to include more and more indicators as the scopes of available data sets are either too narrow or too broad.
- ▶ In order to include further dimensions and indicators it is very necessary, to conduct a **PURPOSE BASED SURVEY** which includes all indicators and dimensions which are more dynamic and internationally comparable. This will further broaden the scope of MPI.
- ▶ The current study is specified to Lahore division only including four districts. This further can be proceeded to other division as well as districts of the Punjab and other provinces of Pakistan.



THANKS