

Comparing Multidimensional Poverty and Consumption Poverty Based on Primary Survey in India

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Motivation & Objectives

- Consumption level based poverty measures do not directly measure other dimensions of deprivation.
- This study constructs a multidimensional poverty index and presents the composition of poverty, as well as how poverty level changes as poverty or deprivation cutoffs vary.
- It crosstabulates multidimensional poverty with consumption level based poverty and asset-based poverty from same data.
- It also attempts to identify the groups that are multidimensionally poor but not income poor: what are their demographic and social characteristics?

Outline of the Study

- **Methodology:** (AF, consumption, assets)
- **Data**
- **MPI Results**
- **Income and Multidimensional Poverty:** Patterns
- **Investigation:** Who is MPI poor but not income poor

Methodology – MPI Poverty

- Alkire Foster Adjusted Headcount Ratio used to build a Multidimensional Poverty Index (MPI):

$$\mathbf{MPI} = \mathbf{M}_0 = \mathbf{H} \times \mathbf{A}$$

- \mathbf{H} is the percent of people who are identified as poor, it shows the *incidence* of multidimensional poverty.
- \mathbf{A} is the average proportion of weighted deprivations people suffer at the same time. It shows the *intensity* of people's poverty – the *joint distribution* of their deprivations.

Methodology – MPCE & Assets

- Poor households have been identified using MPCE data from our survey. State specific poverty lines (Urban and Rural) for 2007-08 has been estimated from the poverty lines for 2004-05 and 2009-10 provided by planning commission of India.
- Based on data on holding of various assets, an asset index has also been created using multiple correspondence analysis. Households have also been divided in five quintiles using the index.

Data and RECOUP Survey

- Household survey conducted in the states of Rajasthan and Madhya Pradesh (MP) between October 2007 and January 2008.
- 717 rural and 300 urban households from 6 districts covered in the survey. Detailed data on 6260 individuals collected.
- Height and weight data available for all individuals above 5. Weight for age data for children up to 5.
- Our sample districts are not representative of the state. So interstate comparisons are not made.

Indicators and Cutoffs

Indicator	Deprivation Cut-off	Weights
Nutrition	If any household member is malnourished (BMI<18.5 for adults, WFA< mean-2sd for children up to five years)	1/6
Child mortality	Any child has died in the household before completing 5 years of age	1/6
Years of schooling	No household member has completed five years of schooling	1/6
School attendance	At least one child in 6 to13 age group is not going to school	1/6
Electricity	The household has no electricity	1/18
Sanitation	The household has no toilet or it is shared with other households	1/18
Drinking water	The household does not have access to safe drinking water or safe water is at a distance of 500 meters or more (one way)	1/18
House Type	The house is kachha	1/18
Cooking fuel	The household cooks with dung, wood or charcoal	1/18
Assets	The household does not own more than one of: radio, TV, telephone, bike, motorbike or refrigerator, and does not own a car or tractor.	1/18

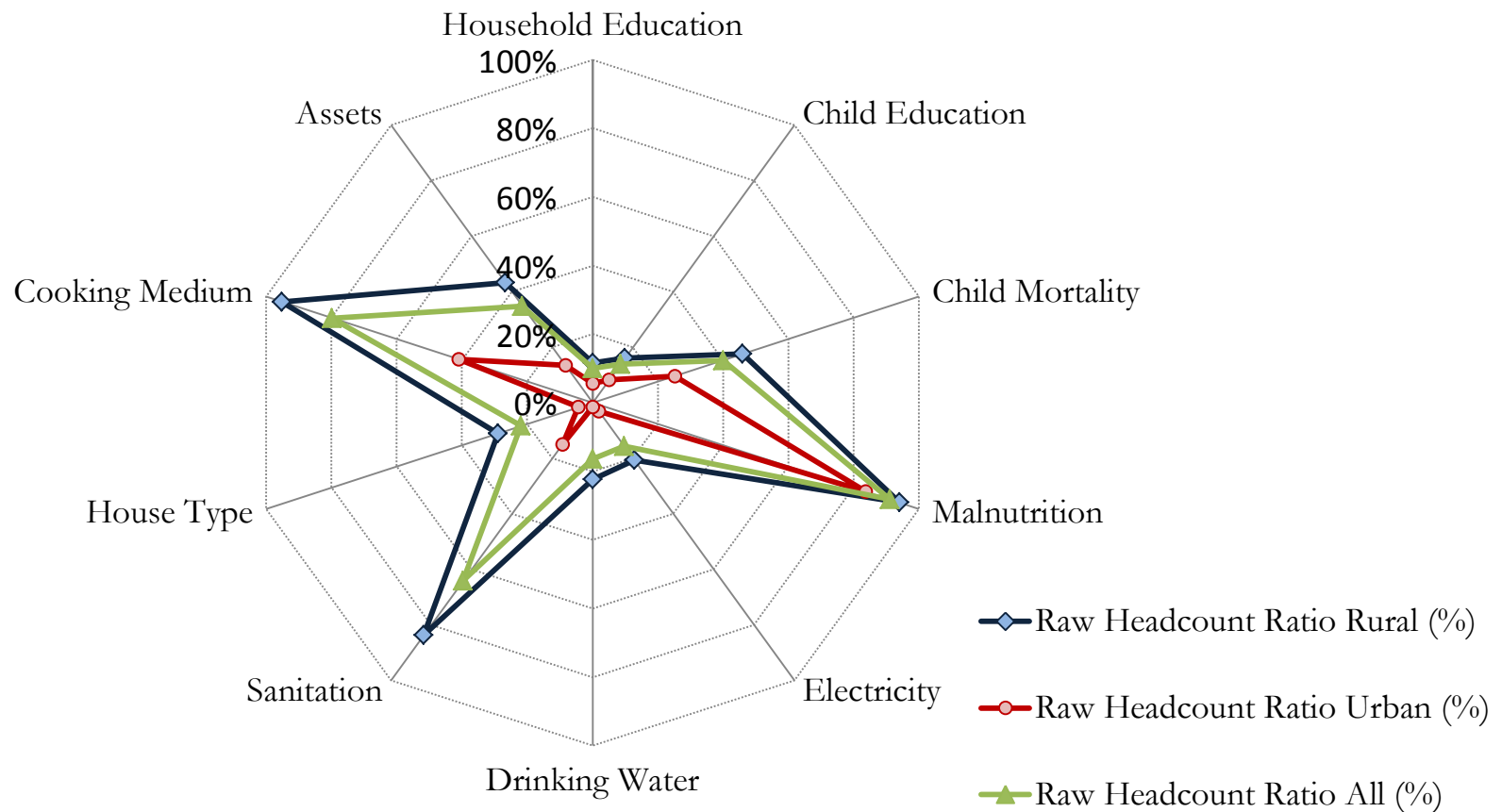
Poverty Cutoff

- A person is identified as poor if the household is deprived in 33% of all weighted indicators.
- Alternatively, we also look at cutoff of 50%.
- We apply alternative deprivation cutoffs to find the extent of “ultra” poverty.

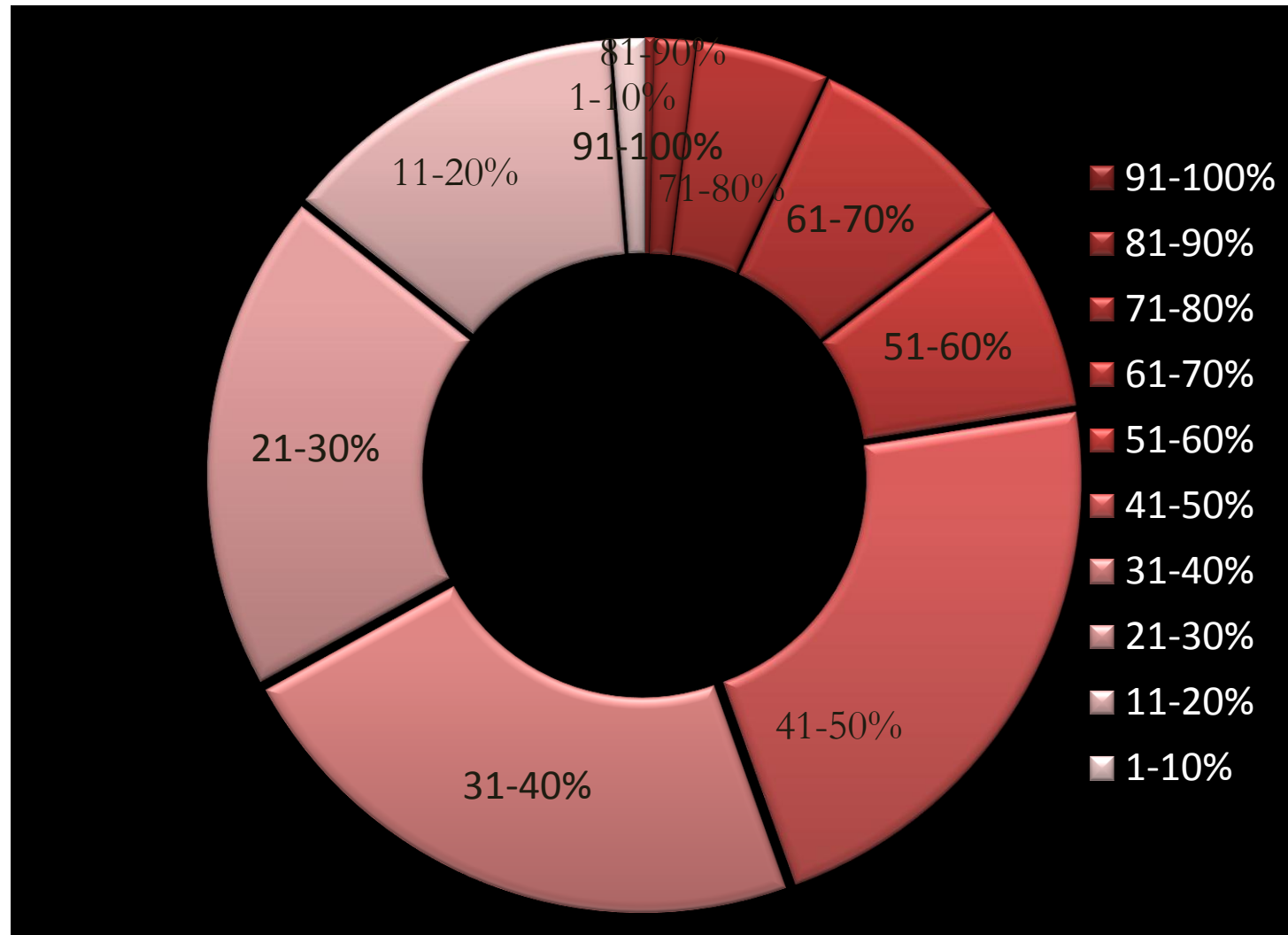
Raw and Censored Headcounts

Deprivation Cut-Off	Raw Headcounts	Censored Headcounts
No household member has completed 5 years of schooling	9.9	9.8
At least one child in 6 to 13 age group is not going to school	13.9	13.8
If any child in the family died before completing 5 years	40.1	38.6
If any household member is malnourished (BMI<18.5 for adults, WFA< mean-2sd for children upto five)	91.1	63.6
Household has no electricity	15.7	15.7
No access to clean drinking water or water source is 500 metres or more (one way)	16.4	15
Toilet is Shared or no toilet	64.2	54.7
House is Kuchha (Pucca and semi pucca houses usually have at least cement floor)	21.9	20.8
Household cooks with wood, charcoal or dung	79.8	61.6
Household does not own more than one of: radio, TV, telephone, bicycle, motorcycle, or refrigerator; and does not own a car or tractor	34.8	32.8

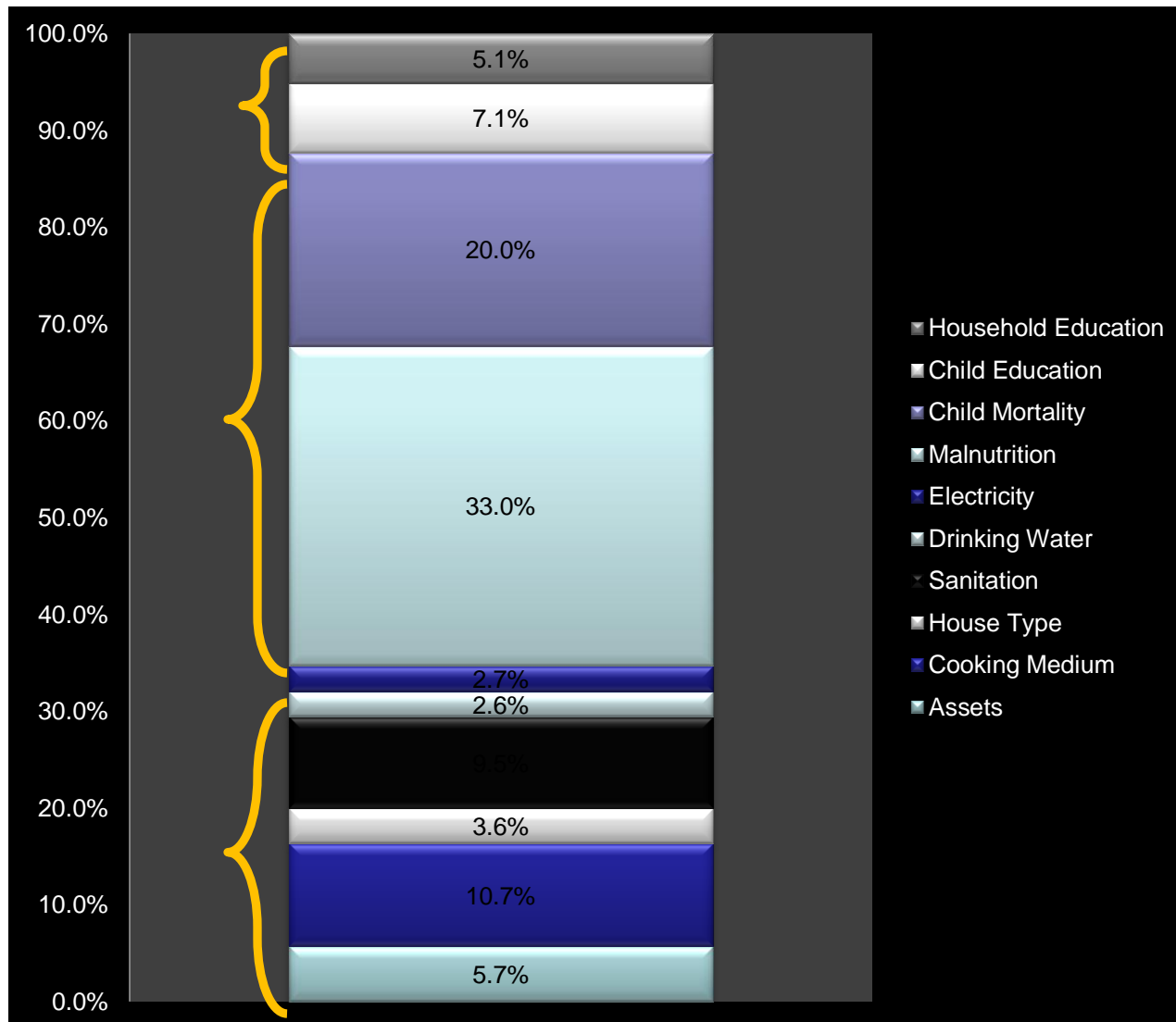
Raw Headcount Ratio, Rural & Urban (%)



Percentage of Deprived Population by level of Deprivation (among the deprived)



Contribution of Indicators to MPI



Indicators and Cutoffs (Ultra Poverty)

Indicator	Deprivation Cut-off	Weights
Nutrition	<i>If any household member is malnourished (<u>BMI<17 for adults, WFA< mean-3sd for children upto five</u>)</i>	1/6
Child mortality	<i>Any child has died in the household before completing 5 years.</i>	1/6
Years of schooling	<i>No household member has had <u>any schooling</u></i>	1/6
School attendance	<i>Any child in 6 to 13 age group is not going to school</i>	1/6
Electricity	<i>The household has no electricity</i>	1/18
Sanitation	<i>The household has <u>no toilet at all</u></i>	1/18
Drinking water	<i>The household does not have access to safe drinking water <u>or safe water is at a distance of 1 km or more (one way).</u></i>	1/18
House Type	<i>The house is kachha</i>	1/18
Cooking fuel	<i>The household cooks with <u>dung or wood</u></i>	1/18
Assets	<i>The household does not own <u>even one</u> of: radio, TV, telephone, bike, motorbike, refrigerator, car or tractor.</i>	1/18

Cutoff Change and Ultra Poverty

	M0	H	A
33% Cutoff, Standard Definition of Deprivations (MPI)	0.321	64.9%	0.494
50% Cutoff, Standard Definition of Deprivations (Severe)	0.195	32.3%	0.602
33% Cutoff, & Ultra Definition of Deprivations (Ultra)	0.202	45.3%	0.447
50% Cutoff, Ultra Definition of Deprivations (Ultra Sev)	0.082	14.2%	0.576

MPI, H and Intensity by Sector and Social Groups

	M_0	H	A	Pop Share (%)
National	0.321	0.649	0.494	100.0
Rural	0.393	0.784	0.502	71.6
Urban	0.138	0.311	0.444	28.4
Scheduled Caste	0.489	0.875	0.559	18.3
Scheduled Tribe	0.410	0.808	0.507	9.1
OBCs	0.306	0.645	0.474	40.7
Muslims	0.283	0.562	0.504	11.7
Other Caste	0.170	0.392	0.433	20.2

MPI and Income Poverty by MPCE Quintiles (Rural)

MPCE Quintiles	MPI Poor	Income Poor	MPI Poor Income Non Poor	Income Poor MPI Non Poor	Both Poor	Population Share
1 (poorest)	89.3	100.0	0.0	10.7	89.3	22.9
2	87.4	84.8	14.8	12.2	72.6	21.4
3	82.4	6.7	76.4	0.8	6.0	19.9
4	70.6	0.0	70.6	0.0	0.0	18.0
5 (Richest)	56.9	0.0	56.9	0.0	0.0	17.9
Overall H	78.4	42.4				

MPI and Income Poverty by MPCE Quintiles (Urban)

MPCE Quintiles	MPI Poor	Income Poor	MPI Poor Income Non Poor	Income Poor MPI Non Poor	Both Poor	Population Share
1 (poorest)	47.6	100.0	0.0	52.4	47.6	24.6
2	34.6	39.2	19.1	23.7	15.5	24.7
3	31.8	0.0	31.8	0.0	0.0	19.6
4	20.1	0.0	20.1	0.0	0.0	16.5
5 (Richest)	8.9	0.0	8.9	0.0	0.0	14.6
	31.1	34.3				

MPI and Income Poverty by Asset Quintiles (Rural)

Asset Quintiles	MPI Poor	Income Poor	MPI Poor Income Non Poor	Income Poor MPI Non Poor	Both Poor	Population Share
1 (poorest)	100.0	58.2	41.8	0.0	58.2	20.8
2	94.4	48.3	48.7	2.7	45.7	26.1
3	79.2	47.3	41.3	9.5	37.9	23.1
4	46.6	23.3	35.1	11.8	11.5	19.8
5 (Richest)	53.1	20.5	32.5	0.0	20.5	10.2

MPI and Income Poverty by Asset Quintiles (Urban)

Asset Quintiles	MPI Poor	Income Poor	MPI Poor Income Non Poor	Income Poor MPI Non Poor	Both Poor	Population Share
1 (poorest)	75.8	71.2	22.7	18.2	53.0	3.7
2	58.7	70.7	8.7	20.7	50.0	8.4
3	46.1	50.6	20.6	25.1	25.5	13.7
4	33.6	46.0	15.3	27.8	18.2	25.3
5 (Richest)	17.5	14.5	15.0	12.0	2.5	48.9

MPI and Income Poverty by Household Size (Rural)

Household Size	MPI Poor	Income Poor	MPI Poor Income Non Poor	Income Poor MPI Non Poor	Both Poor	Population Share
Upto 4	75.6	14.7	60.9	0.0	14.7	13.6
5	74.6	30.2	47.6	3.2	27.0	14.1
6	82.5	46.7	40.9	5.1	41.6	18.3
7	81.4	51.6	38.1	8.3	43.3	15.2
8	78.1	60.9	29.7	12.5	48.4	11.4
9 and Above	77.3	46.7	34.9	4.2	42.4	27.4

MPI and Income Poverty by Household Size (Urban)

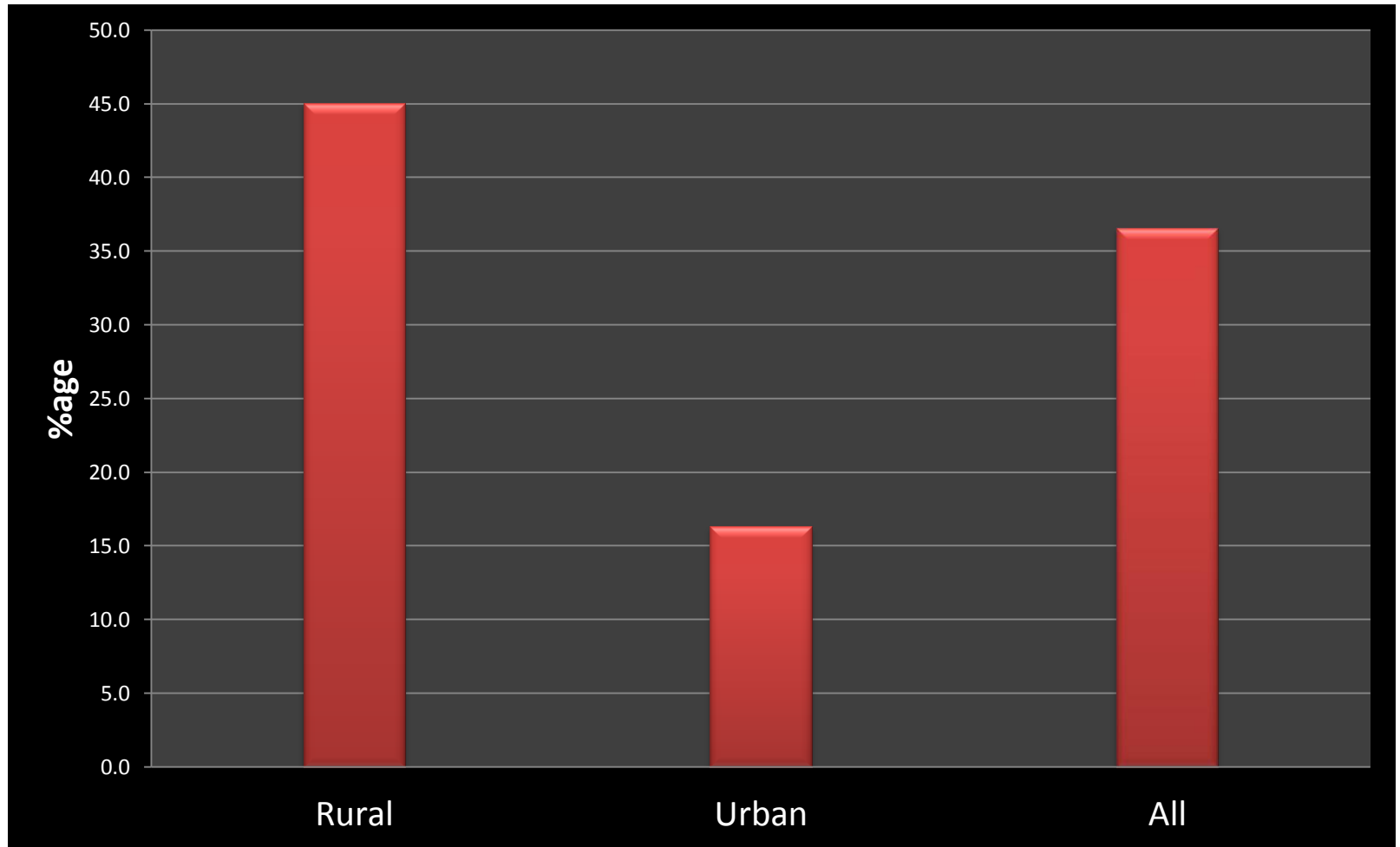
Household Size	MPI Poor	Income Poor	MPI Poor Income Non Poor	Income Poor MPI Non Poor	Both Poor	Population Share
Upto 4	23.1	5.9	18.4	1.3	4.7	18.1
5	30.8	24.6	15.4	9.2	15.4	18.3
6	21.8	32.7	14.6	25.5	7.3	18.6
7	34.6	57.7	11.5	34.6	23.1	10.2
8	44.4	50.0	27.8	33.3	16.7	8.1
9 and Above	37.8	47.3	12.4	21.9	25.4	26.8

Correspondence Between MPI Poverty and Income Poverty (% of Population)

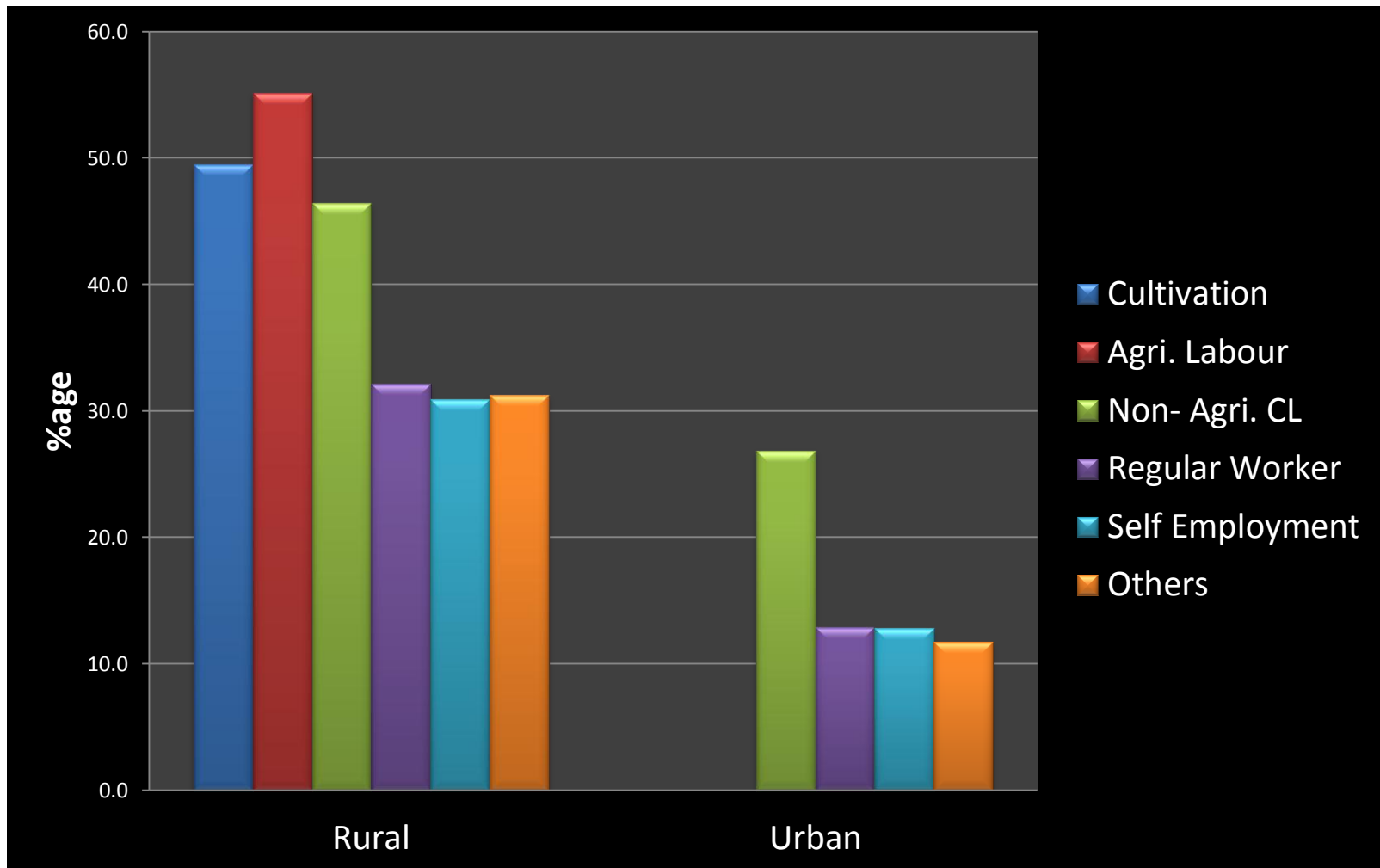
	Income Non Poor	Income Poor	All
MPI Non Poor	26.0	9.1	35.1
MPI Poor	33.9	31.0	64.9
All	59.9	40.1	100.0

**52.2% of MPI poor people are not income poor, but only
22.6 % of income poor people are not MPI poor.**

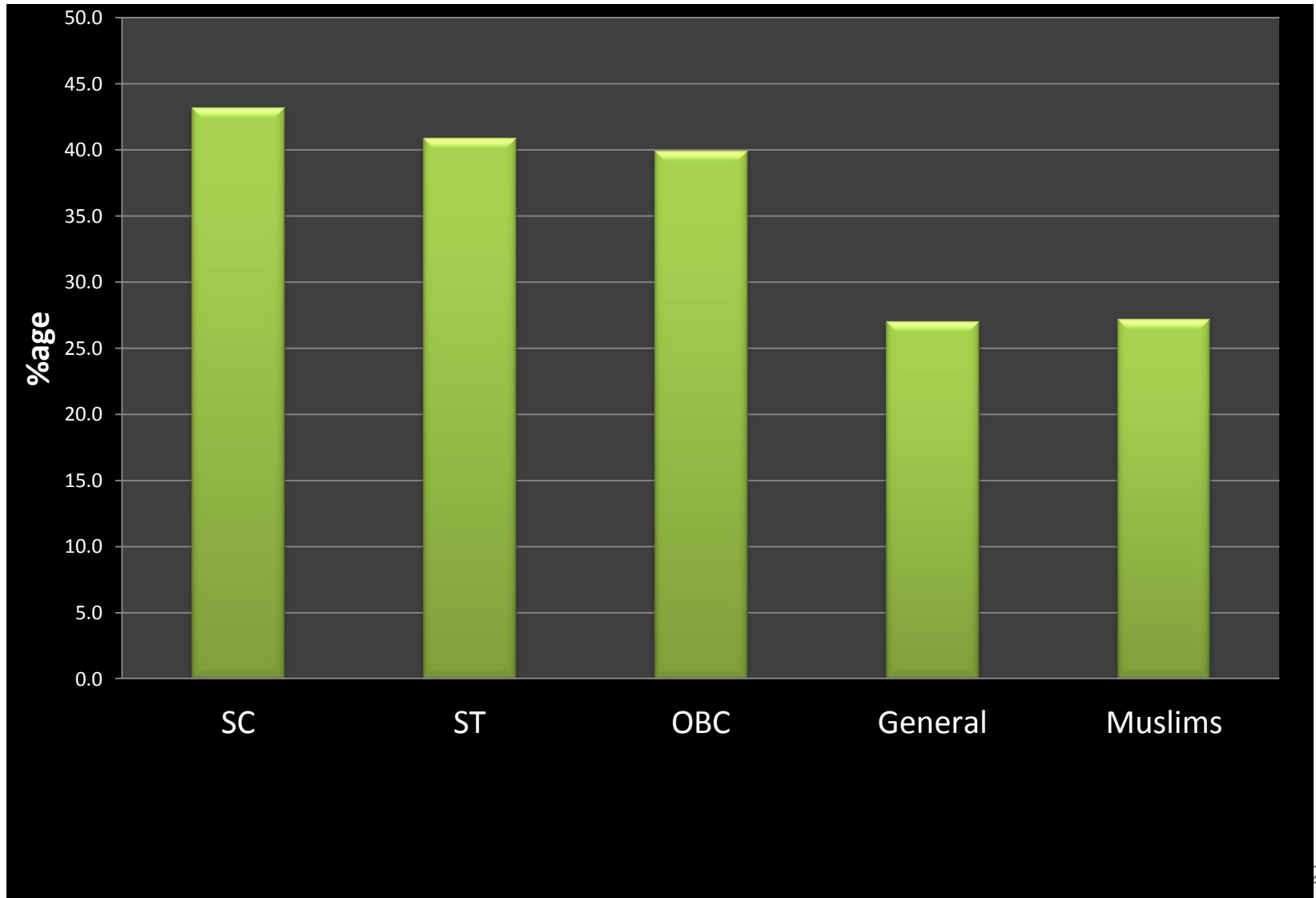
M_0 poor ($k=33\%$) but *not* income poor (By Sector)



M_0 poor but *not* income poor (By HH Occupation)



M_0 poor but *not* income poor (By Social Group)



Conclusion

- Relative deprivations are similar across individual indicators in rural and urban areas, but rural areas face greater of deprivation in sanitation, cooking medium and assets.
- Malnutrition is almost equally high in rural and urban areas.
- 70% of the MPI poor are ‘ultra’ poor; 50% are severe poor.
- Rural-urban differences in MPI much higher than in income
- Mismatch in crosstabs between MPI and income poverty is significant
- Asset ownership and income or MPI poverty are also distinct
- Household size doesn’t have strong link to MPI poverty in rural areas, unlike the urban areas.

Further Scope in this Study

- Can look at individual deprivations, especially across gender (Individual data on training, employment income, health, subjective well being, social attitudes, empowerment etc. available)
- Can compare the association of MPI poverty and income poverty with other outcomes.