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# Has Poverty Decline in India Faltered Since 2011/12?

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# Has Poverty Decline in India Faltered Since 2011/12?[1]

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**Abstract**

Estimates of poverty in India post-2011/12 are subject to heated public and scholarly debate. The first official, nationally representative consumption survey after 2011/12 to be publicly released pertains to 2022/23. While this survey was also administered and fielded by India's National Sample Survey Organization, the resulting consumption aggregate cannot be directly compared to that from the 2011/12 round due to far-reaching changes in consumption definition, questionnaire design, sampling, and survey organization. Moreover, since 2011/12 there has been no officially endorsed poverty line that updates the 2011/12 line with respect to inflation and spatial price variation. We confront these problems of non-comparability by employing survey-to-survey imputation methods in which consumption is predicted into the data for 2022/23 based on consumption models calibrated using data from 2011/12. We consider a range of model specifications and employ both the NSSO consumption surveys and Periodic Labour Force Surveys (PLFS). The latter allow us to also track poverty during the years between 2017 and 2022/3. All estimates indicate a significant slowing of poverty decline between 2011/12 and 2022/23 compared to the preceding decade. We report state-level trends alongside aggregate trends. We show that there have been sharp differences across states in their achievement of poverty decline.

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## 1. Introduction

Poverty in India has been falling consistently since independence. But progress has not occurred at a constant rate. Poverty reduction during the first decade of the 21st century was particularly rapid. Based on official poverty lines drawn up by the Tendulkar Committee, the share of the population in poverty in India fell from 37 percent in 2004/5 to 22 percent in 2011/12, an annual rate of poverty reduction of more than 2 percentage points per year. A question of considerable interest has been whether this progress has continued or even accelerated in the years since 2011/12. With growth of per capita GDP trending over 4 per cent per year during the past decade it would seem that there are ample reasons for optimism.

The picture is not entirely clear, however. First, there are influential commentators who claim that official growth statistics for India have in recent years become less reliable and are likely overstating the rate at which the India economy has been growing (Mody, 2022, Ghatak and Kumar, 2023). They point to widespread underemployment, puzzling patterns of declining female labor force participation, disappointing progress in raising education and health outcomes, a reversal of employment trends away from agriculture, stagnant real wages of unskilled workers, and a declining share of industrial output in GDP, as evidence that the picture of economic progress is far less rosy than what the official growth statistics would suggest (see also Himanshu, Lanjouw and Schirmer, 2025b).

Second, the empirical foundation upon which poverty estimates in India are produced is in a state of some disarray. Historically, poverty in India has been calculated on the basis of household per capita consumption measures constructed from the Consumer Expenditure Surveys (CES) fielded by India's National Sample Survey Organization (NSSO). Roughly every five years a large sample "quinquennial round" is fielded, and official poverty statistics are based on these rounds. In 2017/18 the next large-sample round of the CES was due to become available. However, the Government of India, citing data quality concerns, chose to prevent the public release of these data. Leaked tabulated consumption estimates from the 2017/18 CES were scrutinized by Subramanian (2019) who found that based on these figures poverty in India appears to have increased slightly between 2011/12 and 2017/18.[2]

In 2024 the NSSO released unit record data from the 2022/23 quinquennial round of the CES.[3] This marks a most welcome return to the standard source of consumption data that has historically underpinned poverty estimation in India. However, important challenges to the task of tracking the evolution of poverty since 2011/12 remain. This is because the 2022/23 CES,

[2] In the years prior to the release of the 2022/23 HCES, several studies carried out by international organizations aimed to track the evolution of poverty post-2011/12, employing a variety of approaches and data (see for example, Bhalla et al, 2022, Newhouse and Vyas, 2019, Edochie et al, 2024). In an influential study Roy and van der Weide (2025) draw on the private sector Consumer Pyramid Household Survey to produce a national poverty estimate for 2019, based on the World Bank's $1.90 global poverty line. This latter study's poverty estimates are currently in the World Bank's Poverty and Inequality Platform database. For further discussion see Himanshu, Lanjouw and Shirmer (2025b).

[3] Unit record data for 2023/24 have recently also been released. Given the proximity of the 2022/23 and 2023/24 rounds, and their essentially identical structure and design, we focus our attention in this paper on poverty estimates derived from the 2022/23 rounds.

while modelled closely on the earlier rounds of the CES surveys, introduced several new procedures and innovations that serve to compromise simple comparisons of consumption outcomes between 2011/12 and 2022/23 (See Himanshu, Lanjouw and Schirmer, 2025a).

First and foremost, the 2022/23 CES marks a departure from the definition of consumption that had been employed in the 2011/12 CES survey and in the earlier 2004/5 and 2008/9 rounds. The 2022/23 CES employs the so-called "modified mixed reference period" (MMRP) concept of consumption. Information on consumption is based on recall periods that vary with the type of consumption item. For example, questions about the consumption of food items are based on a one-week recall period as well as monthly recall, questions on the purchase of non-food items are based on a recall period of one-month, while purchase of low frequency non-food items[4] are based on a recall period of one year. This contrasts with the "mixed reference period" (MRP) approach employed in the 2011/12 and earlier CES surveys, where all food and non-food items use monthly recall except low frequency items for which annual recall is used. Research shows that changes in recall periods can have an important bearing on reported consumption levels (Beegle et al, 2012). So directly comparing MRP consumption to MMRP consumption is not appropriate.

Anticipating this change from MRP to MMRP, NSSO included a module in the 2011/12 CES that applies the MMRP definition of consumption. So, in principle, one might have hoped to compare poverty in 2011/12, based on MMRP, to poverty in 2022/23 similarly based on MMRP. However, two additional complications arise. First, alongside switching to MMRP in 2022/23, NSSO also introduced additional changes: 1) data were collected in 2022/23 on the basis of multiple visits to households, whereas in 2011/12 information had been gathered from a single visit; 2) different level of aggregation was used for some consumption items and new items introduced in the 2022-23; 3) imputed values for items received free of cost were added to the 2022/23 round; 4) data were entered in 2022/23 on the basis of "Computer Assisted Personal Interviews" (CAPI), rather than via paper questionnaires. While it is difficult to assess to what extent these design and implementation changes undermine comparability with the 2011/12 survey, research does show that their impact can be significant (Caeyers et al, 2012, Buffiere et al, 2022, Lanjouw and Lanjouw, 2001). [5]

A second major issue confronted when comparing poverty measured in 2022/23 to poverty in 2011/12, is the question of which poverty line to use. Related to this is the question of how to update the poverty line to adjust for inflation. The incidence of poverty in 2011/12 had been estimated at 22 percent based on the officially endorsed Tendulkar Committee poverty line. This poverty line had been developed to correspond to the MRP consumption definition in the 2011/12 CES and allowed for ready comparison with earlier CES rounds for 2004/5 and 2008/9. Given the shift to the MMRP concept of consumption, a new poverty line was

[4] Low frequency items for which annual recall is used are education, institutional health, clothing, footwear and durables.

[5] In a recent review of the comparability issues that plague analyses of household survey data, Beegle, de Weerdt and Gibson (2020) argue that survey methods matter and that the size of survey design effects can be "nothing short of staggering, affecting basic stylized facts of development…"

proposed by a committee headed by Chakravarti Rangarajan, in 2014. This Rangarajan Committee poverty line has not been formally adopted but is regarded as a more appropriate poverty line when working with MMRP consumption. Confronting the Rangarajan poverty line to the 2011/12 MMRP distribution of consumption yields an estimated incidence of poverty in India of 30 percent in 2011/12.

Whether one uses the Tendulkar or the Rangarajan Committee poverty lines, it is necessary to update that line from 2011/12 to 2022/23 in order to correct for cost-of-living changes over time. In India the most commonly applied price index for this purpose is the Consumer Price Index (CPI) reported separately for rural and urban areas. This price index essentially tracks the evolving cost of a base-year bundle of goods and services over time. Both the Tendulkar and Rangarajan Committees had argued that such a price index is not appropriate for the purpose of tracking poverty over time, as it does not reflect well the changing cost of living . Comparisons of poverty in 2011/12 with earlier years had employed a Fisher price index produced by the Tendulkar Committee for that specific purpose. Consistent comparisons from 2011/12 to 2022/23 would ideally employ a similarly constructed price index. Himanshu, Lanjouw and Schirmer (2025a) construct such a Fisher price index along the precise lines recommended by the Tendulkar Committee. They track poverty between 2011/12 and 2022/23, using both the Tendulkar and Rangarajan poverty lines in combination with the MMRP consumption definition. They find that poverty, based on the Tendulkar methodology, declined from 22 percent to 10 percent between 2011/12 and 2022/3, and from 30 percent to 12 percent based on the Rangarajan poverty line. However, Himanshu, Lanjouw and Schirmer (2025a) warn that these estimates cannot be given much credence because the non-comparability of the two surveys remains uncorrected.

Setting aside all the caveats noted above, a useful starting point is to ask how poverty in India would appear to have fallen if a "naïve" comparison between 2011/12 and 2022/23 is made. Table 1 indicates that employing the MMRP concept of consumption at face value in each year, the Rangarajan Committee poverty line, and the conventional Consumer Price Index, generates a significant decline in poverty between the two survey years from 30 to 7 percent.

| | 2011/12 | 2022/23 |
|---|---|---|
| Rural | 30.9 | 7.4 |
| Urban | 26.4 | 6.7 |
| National | 29.6 | 7.2 |

**Table 1** "Naïve" comparison of poverty rates [% of population] between 2011/12 and 2022/23 (MMRP, CPI deflation and Rangorajan Committee poverty lines)

In this paper we probe this finding of a marked decline in poverty between 2011/12 and 2022/23. Given the multiple possible sources of non-comparability, we implement an imputation-based approach that allows us to estimate poverty in 2022/23 in a manner that overcomes many of the more onerous threats to comparability. We start with the exercise of imputing consumption from the 2011/12 CES survey into the 2022/23 survey. This exercise consists of fitting a model of consumption in the 2011/12 data as a function of household

characteristics that are also available (and identically defined) in the 2022/23 survey. Based on the estimated parameters from this model we then predict consumption (defined in terms of 2011/12 consumption expenditures) into the 2022/23 round. The exercise is carried out both ways; once where we impute MRP consumption into the 2022/23 survey and we measure poverty based on the Tendulkar Committee poverty line; and once where we impute MMRP consumption from the 2011/12 round into the 2022/23 round and we measure poverty using the Rangarajan Committee poverty line. The procedure absolves us from having to make any adjustment for temporal cost of living differences, given that the model covariates are not expressed in monetary values. The results from this exercise suggest that poverty decline between 2011/12 and 2022/23 was significantly less rapid than the poverty reduction indicated in Table 1.[6]

While suggestive, imputing from the 2011/12 CES into the 2022/23 CES is not fully satisfactory for several reasons. First, given the nature and extent of differences in the entire data collection procedure across the two rounds, it is perhaps not certain that the household covariates used to serve as statistical "bridge" between the two surveys are fully comparable. It is possible, for example, that information on stocks of consumer durables owned, when based on repeated visits involving CAPI, is more complete than when based on a single round paper questionnaire. Second, the 2022-23 survey used a random allocation of the three questionnaires with one third of households having been asked the household durable questions first. It is well known that ordering of the questions does affect the estimates of items or item categories (Tourangeau, Rips and Rasinski, 2012). Third, the consumption models that are possible with CES surveys do not allow for inclusion of several economically relevant variables that are sensitive to changing economic circumstances. For example, there is limited scope for inclusion of wage and employment variables as covariates in these models, since the CES surveys do not collect such information.[7] One might worry that the CES models are not terribly well placed to capture changes in poverty as many of the available covariates are likely to respond only sluggishly to the changing economic environment.

In an effort to overcome some of the above concerns we employ a second imputation strategy to track the evolution of poverty since 2011/12. We draw on India's employment surveys for this purpose. In 2011/12 the NSSO fielded its regular Employment and Unemployment Survey (EUS). This is a companion survey to the 2011/12 CES, based on a very similar sampling design and survey implementation procedures. The EUS includes a consumption module, but its somewhat abbreviated consumption aggregate is not identical to the comprehensive consumption measure available in the CES. In 2017/18 the NSSO introduced a new employment survey to replace the EUS. This Periodic Labor Force Survey (PLFS) closely resembles, and is modelled on, the EUS. However, it includes an even more simplified measure of consumption than what is collected in the EUS (and CES)[8]. The PLFS is collected yearly,

[6] See also Roy and van der Weide (2025) who reach a conclusion based on the $1.90 (PPP) global poverty line.
[7] Stemmler et al (2025) highlight the particular importance of such covariates in capturing the effect of economic shocks.
[8] Further complications arise due to the change in the PLFS consumption questionnaire which was based on a single question for 2017-18 and 2018-19 but was expanded to five questions from 2019-20 onwards.

with data available each year from 2017/18 to 2022/23. An attraction of the EUS and PLFS surveys is that, like the CES, they are designed, fielded and administered by the NSSO, follow very similar definitions and procedures, and collect similarly large samples, representative at the state and sector level.

The strategy followed involves two steps. First, we carefully compare the CES and EUS surveys for 2011/12. We establish that the two surveys represent the same underlying Indian population, such that they essentially differ only in that their respective consumption aggregates are not the same. Accordingly, we redefine the Tendulkar and Rangajaran poverty lines so that we can replicate in the EUS survey, using the EUS consumption aggregate, the same poverty outcomes as observed in the 2011/12 CES survey at the state and urban/rural sector level. In our second step we apply our survey-to-survey imputation procedure to predict the EUS consumption aggregate into each of the PLFS surveys from 2017/18 through 2022/23. Applying our re-defined poverty lines to this imputed consumption aggregate in each of the PLFS surveys, we can estimate poverty in the respective PLFS survey years.

Several features of the procedure we implement help, in our view, to strengthen the plausibility of our poverty estimates. By undertaking the imputations from the EUS to the PLFS surveys, we are able to add to our imputation models a range of wage and employment variables as predictors of consumption. This is appealing as there exists a large literature linking poverty in India to agricultural wage rates and employment in casual wage labor.[9] Such labour market variables are also sensitive to broader macro-economic conditions and public transfers and can be thus expected to reflect changes in such economy-wide conditions.

In an effort to capture the significant regional and sectoral differences in a country as large as India, we follow two modelling strategies. In the first, we employ sector-wide models, separately for urban and rural areas, but include state-fixed effects (SFE). In the second, we estimate our imputation models at the state level, also separately for urban and rural areas. This allows us to produce national-level poverty estimates that are explicitly built up from state and sector level estimates[10]. This offers us an additional window on the plausibility of our national estimates – they should line up with what we understand and believe applies at the subnational level.

As with our CES-based imputation exercise, our estimates suggest that poverty decline since 2011/12 has slowed. However, estimates from this strategy suggest an even more sluggish decline between 2011/12 and 2017/18 and on to 2022/23. From an original all-India estimate of 22 percent in 2011/12 we estimate poverty to have fallen to 18 percent by 2017/18 and then only slightly further to 17 percent by 2022/23.

[9] See for example, Acharya, 1989, Deaton and Dreze, 2002, Eswaran, Kotwal, Ramaswami and Wadhwa, 2009, Kijima and Lanjouw, 2003, Lanjouw and Murgai, 2009.

[10] This, in fact has been the suggested practice for obtaining national poverty estimates in all the expert groups of the planning commission to estimate poverty.

Our imputation-based analysis thus provides a very different picture of poverty decline than what is reported in Table 1. But how reliable are these imputation methods? It is important to acknowledge that the imputation approach is predicated on possibly strong assumptions. Perhaps the most critical one is that the "returns" to covariates from the consumption models are assumed not to change over time. Changes in predicted consumption in, say, the 2022/23 PLFS are assumed to derive from the fact that the model covariates have changed, and that the parameter estimates on those covariates – estimated in the 2011/12 EUS – are still applicable in 2022/23.

In an effort to probe this "stability assumption" we turn our attention to the comparison of poverty between the 2004/5 CES and the 2011/12 CES surveys (and similarly between the 2004/5 EUS and 2011/12 EUS surveys). These surveys are strictly comparable: the underlying data collection methods and consumption definitions are unchanged. As a result poverty comparisons between 2004/5 and 2011/12 can be conducted via direct calculation from the household-level consumption data. We take advantage of this data configuration to probe the validity of the imputation methods we have described above with reference to the 2004/5 and 2011/12 interval. As noted above poverty declined sharply during this period, against a background of strong economic growth. This is a period where one might expect "returns" to factors to change over time; that the "stability assumption" does not hold. We show, however, that the imputation strategies that we have employed to track poverty post-2011/12 are quite successful in replicating the true decline in poverty observed between 2004/5 and 2011/12. We suggest that this adds to the plausibility of our post-2011/12 estimates.[11]

In sum, the headline finding from our study is that poverty reduction in India has faltered post-2011. While poverty based on Tendulkar Committee poverty lines fell sharply between 2004/5 and 2011/12, from 37 percent of the population to 22 percent, we estimate poverty to have fallen further to only 16-18 percent by 2022 - based on our EUS-PLFS imputations – or, at best, to 10-13 percent in 2022, based on our more tentative CES based imputations. These estimates suggest that the annual average poverty decline was at most 1 percentage point per year, and plausibly considerably less. This compares to the 2 percentage point decline per year recorded between 2004/5 and 2011/12. Based on our estimates we calculate that the number of poor persons in India are likely to have fallen marginally since 2011/12, from 270 million persons to possibly only 250 million in 2022/3.

This picture of sluggish poverty decline is not specific to application of the Tendulkar Committee poverty line. A very similar trend is noted when consumption is measured using the MMRP definition of consumption in combination with the Rangarajan Committee poverty line. While overall levels are higher with this poverty line, we estimate poverty to have fallen only from 30 percent in 2011/12 to 23 percent in 2022/23.

[11] Dang and Lanjouw (2018) undertake a similar validation exercise for the 2019/20 and 2011/12 interval, and similarly find that the imputation method works well.

State-level trends indicate that progress in poverty reduction was quite uneven over this time period. Encouragingly, India's largest state, Uttar Pradesh, appears to have markedly reduced its poverty rate. However, in other historically poor states, such as Jharkand and Bihar, progress was much slower. It is noteworthy that in several of the large central and southern states, such as Maharashtra and Andhra Pradesh, poverty reduction appears to have stagnated.

The remainder of this paper provides the analytical and empirical underpinnings of the above account. We describe in Section 2 the basic survey-to-survey methodology employed in this paper. Section 3 the various data sources on which our analysis is based. Section 4 presents our results. Sub-sections 4.1 presents the results from our CES2011/12-CES2022/23 imputations; 4.2 turns to our EUS-PLFS based analysis. Section 5 describes the results of our exercise to validate the imputation approach with data from 2004/5 and 2011/12. Section 6 provides concluding remarks.

## 2. Survey to Survey Imputation-Based Poverty Measurement

The idea of imputing missing household consumption has long existed in various forms in the economic literature, but there was an upsurge of interest in the 2000's. Deaton and Drèze (2002) and Kijima and Lanjouw (2003) provide early examples for India. Many of the applications draw on an approach for producing small-area estimates of poverty formalized by Elbers, Lanjouw and Lanjouw (ELL) (2003). The ELL approach estimates model parameters of consumption from a household survey that are then applied to overlapping variables in an alternative data source, such as a population census. This then permits ELL to predict consumption into the census at the unit-record level. These predicted consumption data can then be used to estimate poverty at lower administrative levels than is possible with just the household survey. Kijima and Lanjouw (2003) adapt the ELL small-area estimation approach to the 1993/94 and 1990/00 rounds of the CES in an effort to overcome comparability concerns between these two surveys.[12]

Imputation approaches in the analysis of poverty trends rely on a key assumption that the (distributions of the) parameters estimated from the first survey be identical for the missing data. This assumption is practically a prerequisite for any existing work with data imputation. Another assumption is that the two surveys have comparable designs. While it is not always possible to formally test these assumptions, we discuss their plausibility in the context of our study further below.

*Imputation Framework*[13]

[12] A large literature has since emerged applying survey-to-survey methods in a variety of applications. A recent survey by Dang et al (2024) reviews this literature and summarizes a variety of validation studies. See also Corral, Ham, Lanjouw, Lucchtti and Stemmler (2025).

[13] We draw here on the more detailed exposition provided Dang, Lanjouw and Serajuddin (2017).

Let $x_j$ be a vector of characteristics that are commonly observed between the two surveys, where j indicates the type of survey that can either be the same household expenditure survey or another survey. Subject to data availability, these characteristics can include household characteristics as well as community or regional variables. Household consumption (or income) data exist in one survey but are missing in the other survey, thus without loss of generality, let survey 1 and survey 2 respectively represent the survey with and without household consumption data, and $y_1$ represent household per capita consumption in survey 1. More generally, the two surveys can be either in the same period or in different periods. We focus here on the latter case.

Following ELL we assume that the linear projection of household consumption on household and other characteristics ($x$) for survey 1 is given by a cluster random-effects model

$$y_1 = \beta_1' x_1 + \mu_1 + \varepsilon_1 \quad (1)$$

Were the household consumption data $y_2$ available in survey 2, we would assume the same linear projection of household consumption on household characteristics

$$y_2 = \beta_2' x_2 + \mu_2 + \varepsilon_2 \quad (2)$$

where, conditional on household characteristics, the cluster random effects and the error terms are assumed uncorrelated with each other. Often it is convenient to also assume that the cluster random effects and error terms respectively follow a normal distribution $\mu_j \mid x_j \sim N(0, \sigma^2_{\mu_j})$ and $\varepsilon_j \mid x_j \sim N(0, \sigma^2_{\varepsilon_j})$. Equation (1) thus provides a linear random effects model that can be straightforwardly estimated using most available statistical packages.

We are interested in the poverty estimates for survey 2, where the consumption data are missing. Let $z_2$ be the poverty line in period 2. If $y_2$ existed the poverty rate $P_2$ in this period could be estimated with the following quantity

$$P(y_2 \leq z_2) \quad (3)$$

where P(.) is the probability (or poverty) function that gives the percentage of the population that is under the poverty line $z_2$ in survey 2. P(.) is thus non-increasing in household consumption.

We assume that the sample data in the two surveys are representative of the population in each respective time period. For two non-contemporaneous surveys, we thus assume that estimates based on the same characteristics $x$ in these two surveys are consistent and comparable over time. A further, key, assumption is that changes in poverty rates over time are attributable to changes in the explanatory variables $x$ rather than the returns to characteristics (or economic structure) and the unexplained characteristics (or random shocks)—which are respectively represented by $\beta_1$ and $\varepsilon_1$. In other words, given the same observed characteristics $x$, households would be equally poor regardless of the time period the data were collected. While this assumption may seem strong, it may not be reasonable in settings where the returns to characteristics do not change or simply change little over time. Clearly, this is a testable assumption if household consumption is available for both of the periods under consideration.

Given our two assumptions the poverty rate in data from survey 2 can be predicted based on data from survey 1. Let *P(.)* be the poverty function and $y_2^1$ be defined as $\beta_1' x_2 + \mu_1 + \varepsilon_1$, we have

$$P(y_2) = P(y_2^1) \tag{4}$$

Letting $\hat{\beta}_1$, $\hat{\mu}_1$, and $\hat{\varepsilon}_1$ represent the estimated parameters obtained from equation (1) and let $\hat{y}_{2,s}^1 = \hat{\beta}_1' x_2 + \tilde{\hat{\mu}}_{1,s} + \tilde{\hat{\varepsilon}}_{1,s}$, where $\tilde{\hat{\mu}}_{1,s}$ and $\tilde{\hat{\varepsilon}}_{1,s}$ represent the $s^{th}$ random draw from their estimated distributions. The poverty rate $P_2$ in period 2 and its variance can be estimated as

$$i)\ \hat{P}_2 = \frac{1}{S}\sum_{s=1}^{S} P(\hat{y}_{2,s}^1 \le z_1) \tag{5}$$

$$ii)\ V(\hat{P}_2) = \frac{1}{S}\sum_{s=1}^{S} V(\hat{P}_{2,s} \mid x_2) + V(\frac{1}{S}\sum_{s=1}^{S} \hat{P}_{2,s} \mid x_2) \tag{6}$$

Simulation of the error terms for households in survey 2 is mandatory rather than a matter of choice since we are working with two cross sections, which by definition precludes the linkage of households in survey 1 to those in survey 2. We use the poverty line in period 1 in equation (5) rather than the poverty line in period 2 to be consistent with the estimated parameters that are also obtained from the data in period 1. More generally, the poverty line to be used should come from the same time period as the estimated parameters.

The variance for the estimated poverty rate in (6) consists of two components, one for the variance of the estimated poverty rate conditional on household characteristics averaged over the S simulations (i.e. first term on the right hand side in (6)), and the other the variance of the average of the predicted poverty rate (the second term on the right hand side in (6)). Furthermore, the first and second terms on the right hand side in (6) correspond to, respectively, the variance resulting from the survey design (or sampling error), and the fitness of the regression model (or modelling error). If the regression model has a good model fit and the usual complex survey design with cluster sampling and stratification for most surveys is taken into account, the dominant part of the variance would likely be the first term in (6).[14]

## 3. Indian data and approaches

In this study, ten different National Sample Survey Organisation (NSSO) datasets are drawn on, covering roughly two decades: three rounds of (H)CES, one of EUS and six rounds of PLFS. One significant advantage of employing these datasets lies in the fact that they are all gathered by the same, well-respected, statistical organization (NSSO) using similar question design, sampling frames, and fieldwork procedures.

[14] An implication of this is that the standard error for the imputation-based poverty estimate can in fact be even smaller than that of the true rate if the sample size in survey 2 is much larger than in survey 1 and there is a good model fit. See, e.g., Matloff (1981) for further discussion.

All ten surveys are representative at the national, state, as well as regional level of aggregation. ***Table 2*** provides an overview of the available variables in the different datasets.

| Name of survey | CES | CES type 1 | CES type 2 | EUS | PLFS | HCES |
|---|---|---|---|---|---|---|
| Year(s) | 2004/05 | 2011/12 | 2011/12 | 2011/12 | 2017/18 - 2022/23 | 2022/23 |
| General household information | Yes | | | | | |
| Demographics of household members | Yes | | | | | |
| Durable ownership | Yes | | | No | | Yes |
| Labour market and wage variables | No | | | Yes | | No |
| Measure of Consumption | Detailed, URP | Detailed, MRP & URP | Detailed, MMRP | Fairly detailed | One item, self-reported | Detailed, MMRP |

**Table 2** This table reports general information of the ten different data sources we rely on for our imputation exercises. They cover a span of nearly two decades and are all implemented by the NSSO. The third to sixth row refer to the categories of variables that are included in the datasets. The last row reports on the type of consumption measure that is included in the dataset where URP refers to Uniform Reference Period, MRP to Mixed Reference Period and MMRP to Modified Mixed Reference Period.

*(Household) Consumer Expenditure Survey – (H)CES*

Generally, the CES covers general household information as well as demographic variables and questions concerning ownership of several durables. However, its focus – also reflected in the number of devoted modules – is on measurement of consumption. In India, official poverty rates classically arise out of the comparison of appropriate poverty lines with the CES rounds' measure of monthly per capita consumption expenditure (MPCE). However, as noted above, due to changes in the survey design and reference period, this measure is not always easily compared between the different rounds of CES. We use three different rounds of the survey, the 2004/05, the 2011/12 and lastly the 2022/23.

The 2004/05 round is needed to probe our approach while the 2011/12 round is a logical starting point for imputations. The consumption aggregate included in the 2004/05 and 2011/12 rounds are widely judged to be fully comparable. Questionnaire design and sampling methods are also identical. The CES surveys include data on range of demographic, education and occupational variables, as well as on ownership of certain durable assets such as a car, radio or washing machine. These can all potentially serve as regressors for imputing poverty[15]. As noted above, a CES round was fielded in 2017/18, but results were not formally published nor were the data made available to researchers. As a result, the 2011/12 round was the last official and reliable data source for poverty estimated for about a decade until the publication of the 2022/23 data.[16]

[15] **Appendix Table 20** presents share of households that own a certain asset in the different years of the survey.
[16] Note that the 2022/23 round is officially called the Household Consumption Expenditure Survey and is therefore commonly referred to as the HCES.

It is clear that the 2022/23 CES could represent an improvement over earlier surveys. The newly included items of consumption are more detailed and plausibly more appropriate; the survey is administered based on computer-assisted personal interview (CAPI) methods; and the introduction of multiple visits was intended to offset possible respondent fatigue arising from one single, lengthy, interview. While these innovations may yield higher quality data, what is indisputable is that they introduce an element of non-comparability with earlier CES rounds. Unfortunately, the NSSO did not build in a bridging survey in 2022/23 which closely followed the 2011/12 data collection approach, permitting an assessment of the impact of the changes made to the 2022/23 round.

In 2004/05 consumption is based on URP (uniform reference period), but a MRP (mixed reference period) was also gathered. The CES 2011/12 survey includes two types of consumption module, type one covers the MRP and type two the MMRP (modified mixed reference period). The 2022/23 round contains only the MMRP measure.[17] The differences across surveys in their preferred consumption definition sharply constrain their comparability. However, the measures taken in 2004/5 and 2011/12 to also include prospective consumption definitions do allow for some assessment of their impact on measured consumption. A similar assessment of the impact of changes to the 2022/23 CES is not possible.

As we are ultimately interested in poverty rates, an appropriate poverty line must be chosen. As noted above, our focus is on the official poverty lines for 2011/12 produced by the Tendulkar Committee. Given the great spatial heterogeneity in India, state and urban/rural sector-specific poverty lines are available. These poverty lines must be appropriate for the specific definition of consumption that is being scrutinized. Hence, we work with two sets of poverty lines for the CES 2011/12 survey. For 2011/12 consumption defined in terms of MRP (measured in CES type 1), we employ Tendulkar committee endorsed state-sector specific poverty lines. For the MMRP consumption measure in 2011/12 (measured in CES type 2), we employ the poverty lines proposed by the Rangajaran Committee. Note that only poverty estimates based on the MRP measure and the Tendulkar MRP poverty lines have been officially endorsed.

*Employment and Unemployment Survey (EUS) & Periodic Labour Force Survey (PLFS)*

In our second imputation approach, we draw on the 2011/12 EUS. Both the CES and EUS of 2011/12 were implemented by the NSSO using a similar sampling frame and questionnaire design.[18] However the sampled households differ across the two surveys. The EUS collects some general household information and individual demographic information but is primarily focused on employment characteristics. Both surveys cover about 100000 households and are

[17] In URP, consumption of all items is asked for a recall basis of 30 days. For MRP, low-frequency items such as clothing, footwear, durables and educational and institutional health expenditure are covered with a recall basis of one year. For MMRP, food items such as edible oil, fish and meat, vegetables as well as tobacco etc. are covered with a recall basis of 'last 7 days', with the rest of the items following same recall period as MRP.
[18] In particular, both surveys are part of the Socio Economic Survey Round 68. CES 2011/12 is sometimes referred to as Schedule 1.0 of the Socio-Economic Survey while the EUS 2011/12 is referred to as Schedule 10.0.

representative of the Indian population in 2011/12. In terms of the distributions of those household and individual characteristics collected in both surveys, the two are indistinguishable from one another. Although EUS does not include information on ownership of durables, it does include a number of additional household and individual characteristics that are not collected in the CES. Notably these pertain to detailed labour market participation and wage variables.

Like the CES, the EUS 2011/12 does also include a consumption measure. However, this consumption measure is less detailed than what is available from CES. It covers a reasonable spread of consumption items (about 40) broadly following the MRP recall period. As can be seen in Figure 1, one can view the EUS consumption aggregate as a rescaled version of the CES measure; EUS consumption exhibits a nearly identical distribution as the CES consumption but is positioned slightly moved to the left. The two consumption measures can be viewed as independent measures of the same underlying distribution of economic welfare.[19] This link allows us to compute appropriate poverty lines for EUS – see further below.

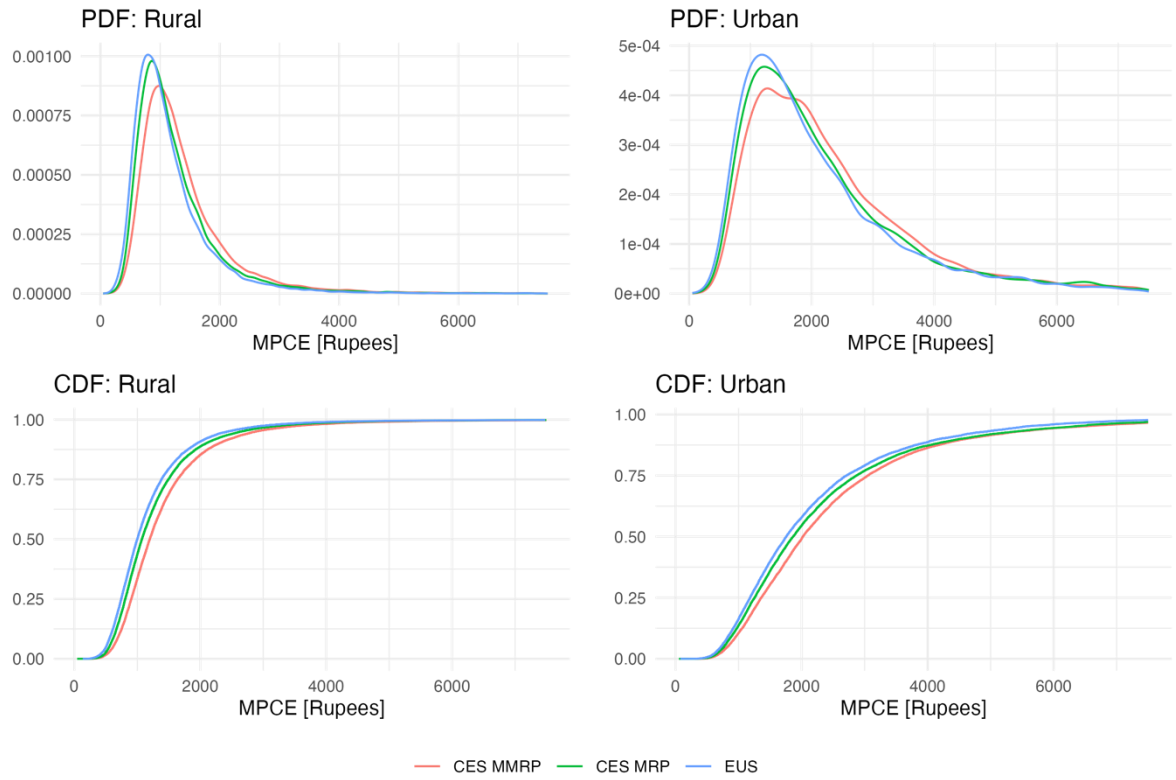



**Figure 1** Probability density function (PDF) and cumulative distributive function (CDF) of the three available consumption measures in 2011/12 for urban and rural population. The observations are weighted by the respective household sizes and survey weights. Thus, the graphs can be interpreted to represent individuals, not households. For visibility, outliers on the right tail of each distribution were removed, a cut-off of 7500 Rupees was deemed appropriate for this.

We use six consecutive rounds of the PLFS, ranging from 2017/18 to 2022/23. Note that the last available round coincides with the last available round of CES, giving us the opportunity

[19] See **Appendix Table 21**, **Appendix Table 22** for a comparison of some descriptives of the CES and EUS consumption measures. And **Appendix Figure 19** of the PDF of these consumption measures with a logged x-axis.

to compare the results from different approaches for the same year. Generally, the PLFS can be thought of as the successor survey of the EUS. It also covers detailed questions on labour market participation and wage variables. These variables will be useful in an imputation exercise using EUS as the source survey and the different rounds of PLFS as the target survey. They are plausibly 'economically sensitive', i.e. they are likely to be responsive to changes in the general economic environment.

Unlike EUS and CES, none of the PLFS rounds contain a full-fledged section on consumption that allows for detailed computation of MPCE. They do contain, however, a much-abbreviated consumption question[20]. It is clearly not comparable to either the CES or the EUS consumption measure.

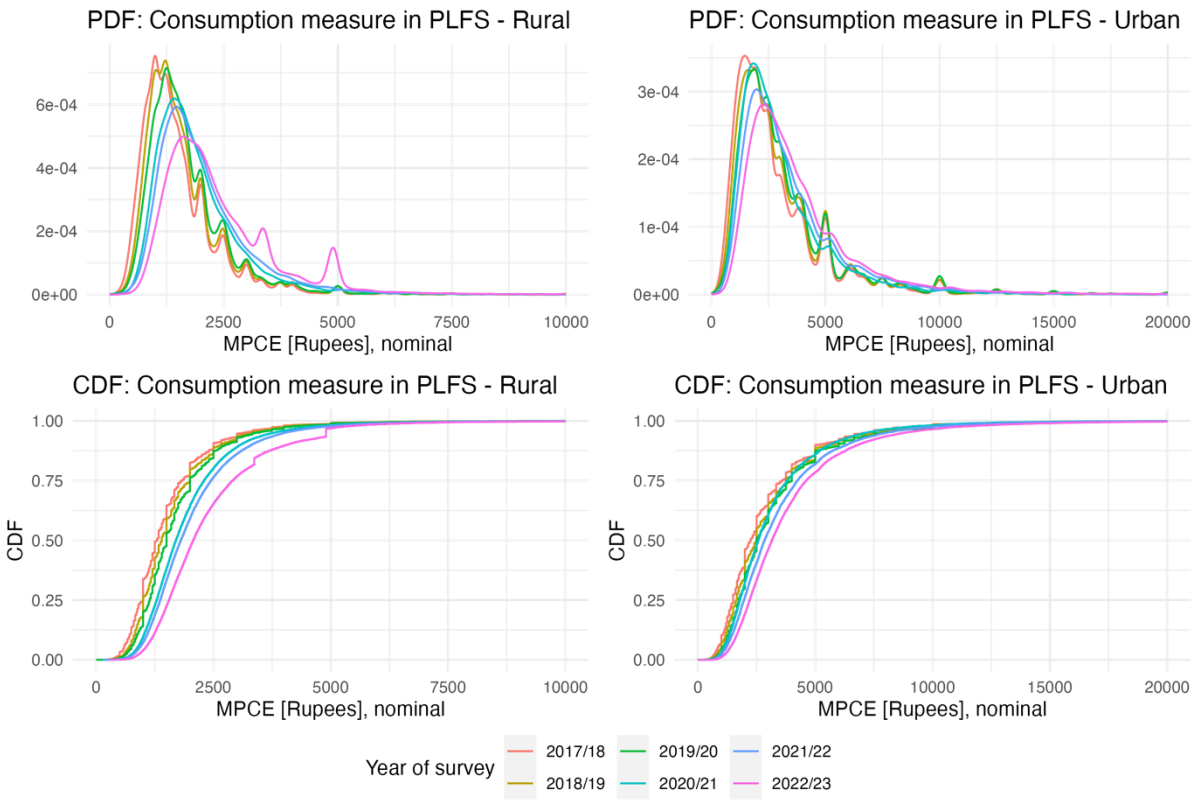



**Figure 2** Probability density function (PDF) and cumulative distributive function (CDF) of the different rounds of PLFSs consumption measure between 2017/18 and 2022/23 for urban and rural population, in nominal terms. The observations are weighted by the respective household sizes and surveyweights. The graphs can be interpreted to representative individuals, not households. For visibility, outliers on the right tail of each distribution were removed, a cut-off of 10000 respectively 20000 Rupees was deemed appropriate for this.

***Figure 2*** presents the PDF and CDF of these different measures from the PLFS rounds for urban and rural[21]. The first three rounds and the latest of PLFS consumption measure show clearly visible bunching at 'round' numbers. This is expected as the interviewees are asked to

[20]This consumption measure is also not consistent within PLFS. The first three rounds of PLFS, from 2017/18-2019/20 contain, a single, self-reported estimate of the household's total usual consumption expenditure in a month. The other rounds contain a total measure consisting of five individual question covering different consumption good groups like clothing, durables as well as imputed values for home grown stock and wages in kind and free collection.

[21]**Appendix Table 25** presents summary statistics of the MPCE measure in the different years.

give one number to indicate their consumption. The later rounds, from 2020/21 on, appear a bit smoother. This will probably be due to the fact that there five different numbers are asked for about a household's consumption that are subsequently aggregated. Each year, the distributions shift to the right, reflecting the fact that the values have not been deflated.

*Approaches*

Given the different available datasets, a variety of imputation applications are feasible. ***Figure 3*** displays those that are focused on here. We pursue two broadly distinct approaches. In the first, we use the 2011/12 CES rounds - type 1 as well as type 2 - to impute into HCES 2022/23. This has the obvious advantage that the surveys have a wide overlap in variables, comprising demographics, education, and occupation characteristics, but also asset ownership variables. The imputed values of consumption are expressed in CES 2011/12 terms, so that the 2011/12 poverty lines can be used to determine the poverty status of households in the HCES 2022/23. We can also impute from the EUS 2011/12 into the HCES 2022/23. However, these two surveys have a much more abbreviated overlap in variables. This will be considered as part of our robustness checks.

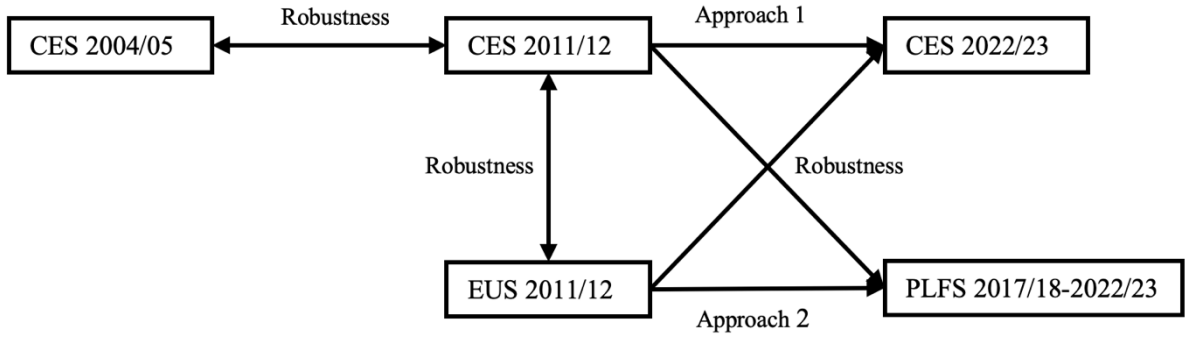



**Figure 3** Schematic overview of datasets used and direction of imputations (shown by arrows). The main approaches are indicated as well as some of the subsequent robustness checks.

The second approach involves imputing out of the EUS into the different rounds of PLFS. Here too there is a significant overlap in variables. Of particular value, in our view, is that employment participation and wage variables are available in these surveys. As has been argued in the literature, they are likely to be good predictors of poverty status. These variables seem – conceptually – closely connected to the idea of monthly consumption expenditure. The asset ownership variables in the CES represent occasional purchases while labor market variables are more likely to vary in accordance with fluctuations in general economic conditions. The association is likely to be particularly strong in the lower tail of the consumption distribution, precisely where our interest lies given our focus on poverty estimation.

Despite the appeal of the EUS-PLFS approach, a concern arises in that we do not have formally approved poverty lines to be used with EUS consumption. In addition, when including wage data, we need to adjust for inflation. Of course, imputations into the PLFS could also be carried out with the CES as the starting point. But the overlap of variables would then neither include

asset variables, nor labor market variables. Again, this is a route we examine in the robustness analysis.

As noted above, and seen in ***Figure 1***, the distribution of EUS consumption closely resembles a slightly rescaled version of the CES consumption distribution. This suggests that we can obtain EUS poverty lines by computing state-sector poverty lines for the 2011/12 EUS measure that give us the same poverty rates as their CES counterparts, see **Appendix Table *23*** for Rupee values of these cut-offs. These poverty lines would then be used to estimate poverty in the PLFS rounds as the EUS consumption measure predicted into the PLFS rounds would be expressed in 2011/12 expenditures.[22]

Since multiple PLFS rounds are available, from 2017/18 up to 2022/23, imputing from the EUS into the PLFS also allows us to shed some light on the trajectory of poverty rates over time after 2017/18. This, in addition to the attraction of being able to appeal to labor market variables as predictors of consumption, illustrates the attraction of EUS-PLFS imputation over CES imputation between the 2011/12 and 2022/23. However, as already noted, proceeding with our second approach does imply that certain predictors – such as wages - are expressed in currency terms and will need to be deflated for inflation. We draw on the CPI for this purpose.[23]

Selection of variables to be included in our prediction models (CES or EUS) is a somewhat subjective exercise. As a general rule it is desirable that variable selection leads to parsimonious models that employ individually significant regressors which in combination result in high explanatory power. In this paper we pursue variable selection in two ways: first we select variables using "economic reasoning" and contextual knowledge; and second, we employ LASSO to specify the model. The first approach helps to retain a degree of interpretability, and we can ensure that only statistically significant predictors are included. The LASSO approach involves two steps. First, LASSO selects variables out of a list of candidate regressors comprising household-level information such as demographics, asset ownership (for CES) and/or labour market variables (for EUS) as well as all state-fixed effects. We find that the resulting model is then often observed to suffer from three potential problems: first, the overall number of selected variables is often very high; the individual parameters may not be individually significant (reflected in high p-values); and state fixed-effects may not be selected. We thus attempt to address these issues in the second step. Here we drop – one by one – all variables that are not strongly significant, and we force inclusion of the state-fixed effects.[24]

Relative to the LASSO models, our "economically reasoned" models might be expected to achieve lower explanatory power. However, in practice the two approaches did not differ markedly in this respect.

[22] As illustrated by ELL (2003) failure to ensure precision of parameter estimated in the prediction model can generate considerable "model error" in the resulting poverty estimates.
[23] We also considered other deflators, e.g. the implicit ones from comparing the poverty lines for 2011/12 as well as those computed in (Himanshu, Lanjouw and Schirmer, 2025a). Results remained robust.
[24] Here we only present results where the threshold was chosen to be 0.01.

We estimate separate models for rural and urban populations. To further capture state level variation, we experimented with separate models at the state level, as well as overall aggregate sector specific models that include state fixed effects (SFE). The objective is to produce credible estimates at the state/sector level, and to then arrive at national poverty estimates by aggregating.

The area-effect in the error term is computed at the district level. Borders of some of the states changed between 2011/12 and 2022/23, with some new states coming into being. For example, the state of Andhra Pradesh was divided in two, called Telangana and Andhra Pradesh. For imputations out of 2011/12, we chose to convert all locational identifiers into 2022/23 terms.[25] For the sector-wide models, all imputations are implemented with 1000 simulations. For the state-wide models, we rely on 500 simulations. In an effort to work with state-level samples that are sufficiently large we focus on only the 29 biggest states in this study. In other words, in this analysis we drop India's smaller states[26]. That leaves us with about 99% of the initial observations available in the datasets.

Finally, we undertake extensive robustness checks.[27] We start with imputations between the 2011/12 CES and EUS datasets showing that we can broadly reproduce poverty estimates across those two surveys. We then go back to 2004/05 and impute between that year's CES and the 2011/12 CES type 1. This allows us to establish that imputations over time in the Indian context – during a time of sizeable poverty reduction – is possible. Lastly, we can go for the imputations out of CES 2011/12 into the different rounds of PLFS and EUS 2011/12 into the HCES 2022/23. As noted above, these have certain disadvantages, but we include them for completeness.

## 4. Results

We start by presenting results from our first approach, imputing out of CES 2011/12 into HCES 2022/23. We then proceed to our second approach, where we impute out of the EUS 2011/12 into the multiple rounds of PLFS.

As our calculations derive from many datasets and a large number of imputation models, we report here only our main findings[28].

*Approach 1: Impute out of CES 2011/12 into HCES 2022/23*

[25] That implies that overviews of poverty rates in 2011/12 at the state-level might not match official statistics for 2011/12.
[26] List of states not included: Andaman and Nicobar Islands, Chandigarh, Dadra & Nagar Haveli and Daman and Diu, Goa, Ladakh, Lakshadweep and Puducherry.
[27] See Himanshu, Lanjouw and Schirmer (2025b) for corroborating evidence on the broad conclusions reached in this paper.
[28] For both approaches, we limit ourselves to presenting only some of the many models we used for imputation. These are chosen based on findings in the robustness section. However, tables and plots presenting the results of the other models, as well as state-level comparisons can be consulted in the appendix. Additional overviews are also available upon request.

The clear advantage of imputing into another – although somewhat altered – round of the (H)CES is the overlap in variables. Alongside standard demographic, education, and occupational information, both surveys include household-level information on access to services, such as electricity source, as well as on ownership of durables. In contrast to the EUS and PLFS, the CES surveys do not include detailed labour market data on wages and earnings. Therefore, these cannot be included within this approach. On the other hand, absence of such variables also means that selection of deflators for wage variables can be avoided.

As there are two different types of the CES 2011/12 available, there are two source ("training") surveys on which the models can be based. Type 1 employs the MRP consumption definition Type 2 employs the MMRP definition. We use the Tendulkar poverty lines to determine poverty status for imputations out of CES Type 1 and the Rangajaran poverty lines for the CES Type 2 imputations.

*CES T1 2011/12 – HCES 2022/23*

We consider three different modelling approaches: one sector-wide model and two models that are estimated at the state-level. We explore usage of State Fixed Effects (SFE) and state-level models as we are interested not only in aggregate sector wide or national poverty rates, but also in the poverty rates that obtain at the state-level. These estimates can offer insight into the spatial distribution of poverty, and also gauge the plausibility of the aggregated numbers (see further in the robustness checks). The sector-wide model uses an "economically sensible" model specification that includes demographics and asset ownership variables as well as state-fixed effects (SFE). This model specification is hand-picked based on what our intuition would suggest is reasonable. This specification is then also used to predict poverty at the state-level. This allows for a direct comparison of the sector-wide and the state-wide imputation. While the sector-wide model includes SFE to accommodate between-states differences, the coefficients on all non-state regressors are the same for all states. Tables **Appendix *Table 26*** and **Appendix *Table 27*** report the model estimates.

The state-level models we use apply the same set of predictors as the sector-wide models, but now the parameter coefficients are state-specific. In order to maximize flexibility, we also experiment with state-level models for which LASSO is used to arrive at the model specifications. In this case a different model specification is applied in each state[29].

In the Appendix we present tables with state-level poverty estimates based on these three approaches.[30] In **Figure *4*** we plot the imputed values for 2022/23 against their 2011/12 counterpart.[31]

[29] **Appendix Table 32** presents an overview of some key characteristics of the state-level models for the state-specific LASSO Demographics model. More detailed beta-model overviews for the state-wise imputations are available upon request.
[30] See **Appendix Table 39**, **Appendix Table 40**, **Appendix Table 41** and **Appendix Table 42**.
[31] Again, we only plot the three discussed models, more overviews can be found in appendix or are available upon request.

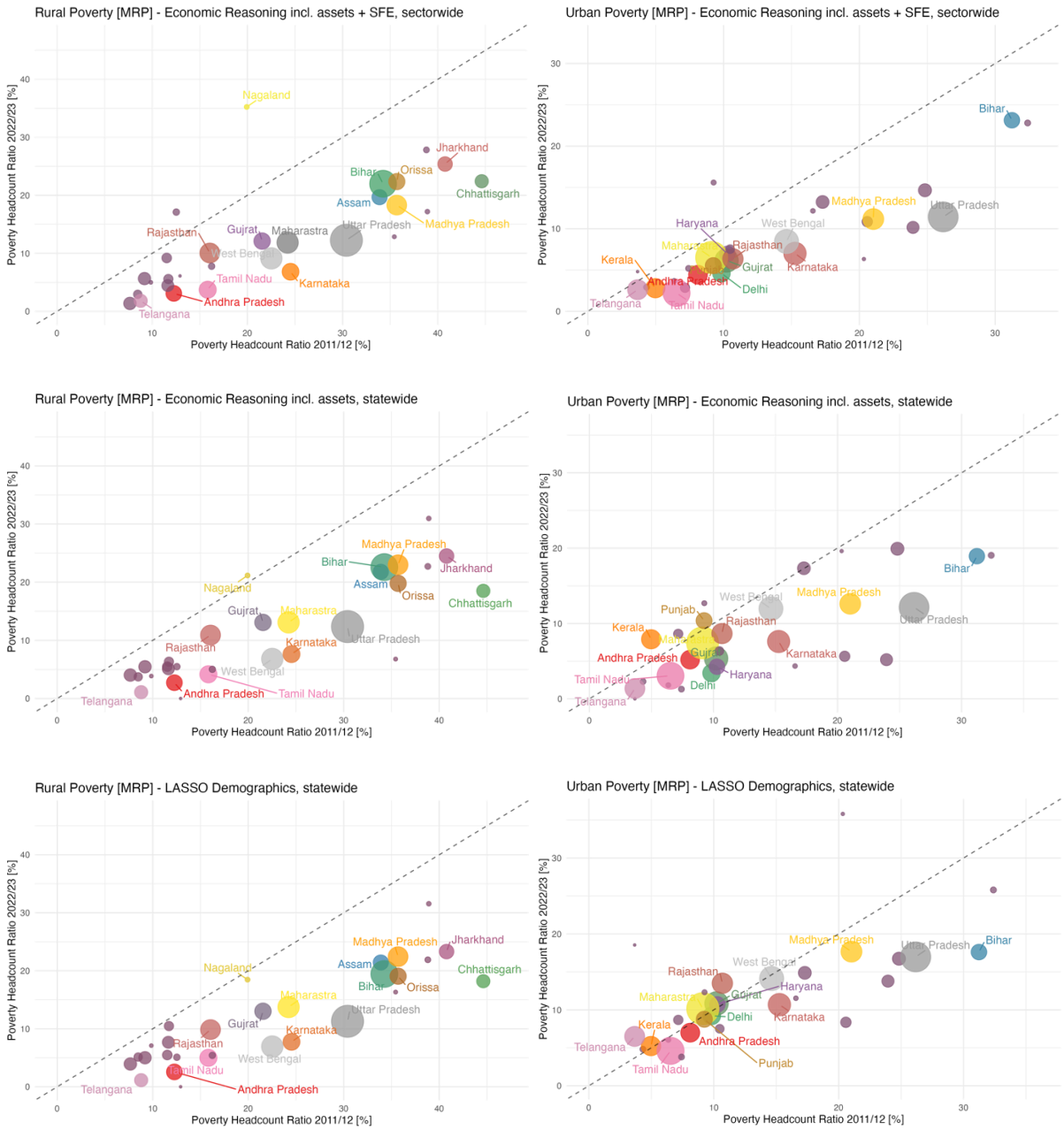



**Figure 4** Bubble plot giving poverty rates at the state level (rural – on the left, urban – on the right). The x-axis gives the official values for 2011/12, while the y-axis depicts estimates for 2022/23. Poverty status is determined using the MRP consumption measure and the Tendulkar poverty lines. Only the most populous states are highlighted. Bubble size corresponds to population size. The two plots on top are based on a sector-wide imputation out of CES 2011/12 MRP into HCES 2022/23. That model was chosen based on economic reasoning as discussed above, and includes both assets and state-fixed effects (SFEs). The two plots in the middle present the same model specification but are estimated at the state-sector level, without SFE. The two last plots below present the results of a model that was found using LASSO including only demographic and other household characteristics, but no asset ownership variables. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

Interestingly, sector-wide approaches including SFE as well as statewide imputations lead to fairly similar results at the state-level. Focusing first on the rural estimates, we see poverty rates falling in almost all states. Generally, all three approaches lead to fairly similar results at the state-level. Uttar Pradesh stands out for a particularly significant decline in estimated poverty

while progress in several other highly populated states, such as Bihar or Madhya Pradesh, have seen far less rapid progress.

In urban areas, the three approaches also point to similar results. However, instead of fairly uniform poverty reduction as in rural areas, the state-level imputations point to small increases in urban poverty in several states – especially those where poverty had initially been relatively low. For the bigger states, a similar picture as for rural emerges: Uttar Pradesh experiences clear urban poverty reduction while in Bihar progress is less marked.

Based on the population-weighted average of these state-level estimates the following sector and nation-wide poverty rates for 2022/23 can be reported.

| Model | Rural | Urban | Total |
|---|---|---|---|
| **Sector-level models** | | | |
| Economic Reasoning Demographics and Assets + SFE | 12.9 (0.68) | 7.4 (0.79) | 11.3 (0.53) |
| **Sector-level models used at state-level** | | | |
| Economic Reasoning Demographics and Assets | 13.2 (0.66) | 8.3 (0.82) | 11.7 (0.53) |
| **State-level models found with LASSO** | | | |
| Demographics | 14.6 (0.73) | 11.1 (0.65) | 13.6 (0.55) |

**Table 3** Sector-wide and total poverty rates for 2022/23, based on three different ways of imputing out of CES Type 1 2011/12 into HCES 2022/23. The Tendulkar poverty lines were used to determine poverty status. Total values are computed by a population-weighted average of the rural and urban values. The standard errors are given in parantheses.

Recall that for 2011/12, poverty rates based on the MRP measure stood at 13.7% in urban areas, 25.7 % in rural India, and 22% for the whole country. The three approaches thus point to poverty reduction in both urban and rural areas. Further, all three sets of results are fairly similar. The economically reasoned model estimated at the state-level leads to nearly the same results as the sector-wide models. The smallest poverty reduction is found when using the state-level specific models with LASSO. Based on the MRP measure and the Tendulkar poverty lines, total poverty seems to have fallen to somewhere around 11.3-13.6%. That implies a yearly poverty reduction of 0.76-0.97 percentage points between 2011/12 and 2022/23 – well below the 2 percentage point per annum reduction recorded between 2004/5 and 2011/12.

*CES Type 2 2011/12 – HCES 2022/23*

Although the last official poverty numbers were given in MRP terms, we want to assess the MMRP measure as well. CES Type 2 from 2011/12 allows for this type of imputation. The Rangarajan Committee based poverty lines for MMRP are not the same as for MRP, see **Appendix Table *23***. Generally, MMRP poverty rates at the state-level for 2011/12 are above their MRP counterparts. We present two models, one that was found using LASSO, including only demographics and the other economically reasoned also including assets, both models include SFE.

As before, we start with an overview of the state-level values based on these two approaches, see **Figure *5***[32]. For rural, both models point to poverty reduction in almost all states. While states like Rajasthan, Bihar and Jharkhand have seen some fall in poverty between 2011/12 and 2022/23 it is again Uttar Pradesh that stands out with a particularly significant decline. As with the MRP-based results, we find that here too, urban states did not see as sharp a fall in poverty rates as in rural areas. They also tended to start from lower poverty rates in 2011/12 to begin with. Again, the Uttar Pradesh experience points to significant poverty reduction while states like Bihar have lagged behind. Overall, these state-level trends are quite similar to those from the previous approach using the MRP measure.

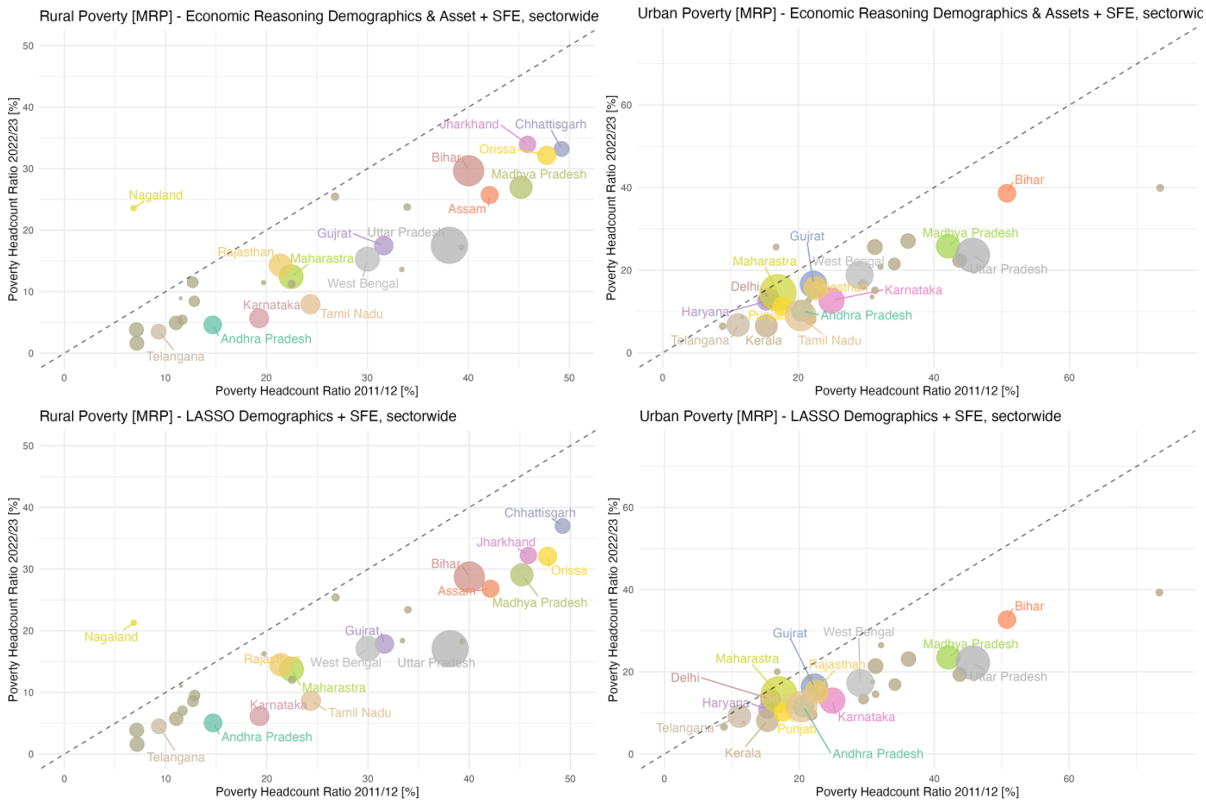



**Figure 5** Bubble plot giving poverty rates at the state level (rural – on the left, urban – on the right). The x-axis gives the official values for 2011/12, while the y-axis depicts estimates for 2022/23. Poverty status is determined using the MMRP consumption measure and the Rangajaran poverty lines. Only the most populous states are highlighted. Bubble size corresponds to population size. The two plots on top are based on a sector-wide imputation out of CES 2011/12 Type 2 into HCES 2022/23. That model was chosen with help of LASSO and only includes Demographics and state-fixed effects (SFE). The two plots below present the results of a sector-wide model that was economically reasoned, including demographics asset ownership and SFE. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

**Table *4*** depicts the nationwide and sector-wide poverty rates that emerge from this exercise. Note that the corresponding poverty rates with this poverty line and consumption definition in 2011/12 were 30.9% for rural areas, and 26.4% for the urban population, leading to an all-India poverty rate of 29.5%.

[32] The table overviews can be found in the Appendix, see **Appendix Table 43** and **Appendix Table 44**.

| Dataset | Rural | Urban | Total |
|---|---|---|---|
| **LASSO Demographics + SFE** | 18.2 (0.74) | 15.8 (0.89) | 17.5 (0.58) |
| **ER Demographics & Asset + SFE** | 17.8 (0.81) | 16.2 (1.32) | 17.3 (0.69) |

**Table 4** Sectorwide and nationwide poverty rates in percentages for 2022/23, based on sectorwide imputations out of CES 2011 Type 2 into HCES 2022/23, SFE stands for the inclusion of state-fixed effects in the models. The imputed values are compared with the state-level poverty lines corresponding to the MMRP measure that were defined by the Rangajaran committee.

The two models point to poverty reduction in both the rural and urban sectors as well as in India as a whole. Overall, poverty seems to have fallen from 29.5 percent to about 17.5 percent, pointing to a yearly reduction of about 1.1 percentage point between 2011/12 and 2022/23. Obviously, this is not directly comparable to the MRP-based reduction discussed above. But it points to a similarly modest rate of poverty decline.

*Approach 2: EUS 2011/12 into PLFS surveys (2017/18 – 2022/23)*

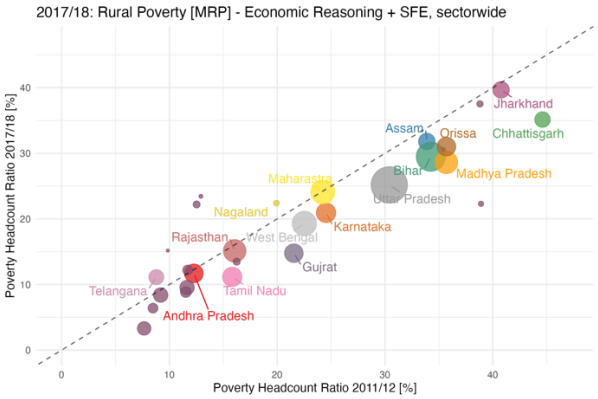
*MRP Estimates*

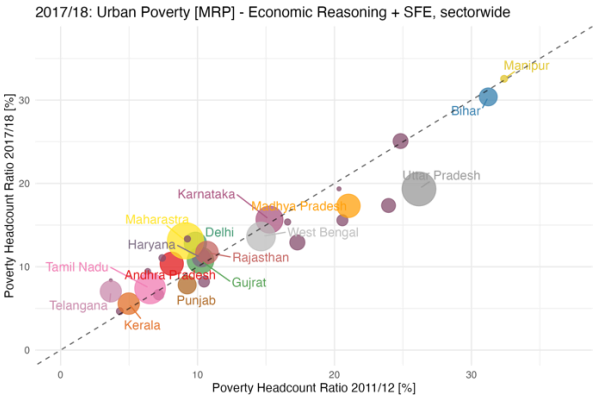
The main limitation to using the CES data from which to launch the survey-to-survey predictions is that these surveys include relatively few predictors that are less responsive to fluctuations in the economic environment and context. Inclusion of consumer durable assets in the prediction models might be expected to help in this respect but they come with potential issues of their own – as discussed further in the robustness section. By shifting to the use of the EUS 2011/12 as the launching survey, we can include wage and other labour market variables that are likely to reflect both economic fluctuations and longer-term trends. In addition, by imputing into a series of PLFS surveys we gain a window on the evolution of poverty on an annual basis between 2017/18 and 2022/23.

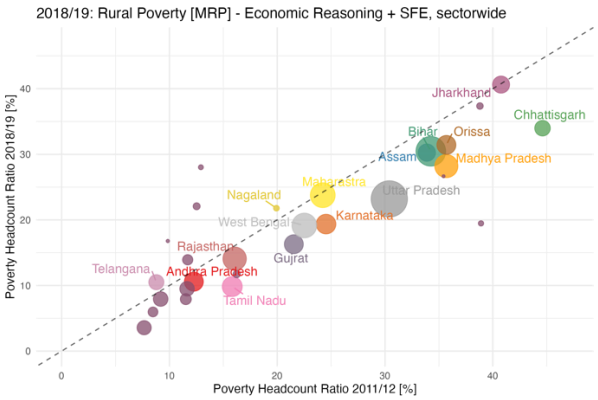
Within this approach, we follow the same general procedure as with the CES models. We present results for three models: economically reasoned models that are imputed sector-wide as well as state-wide, and lastly a state-specific LASSO model. All three include labour market and wage variables. For completeness, results from additional models - also without SFE - are reported in the appendix.

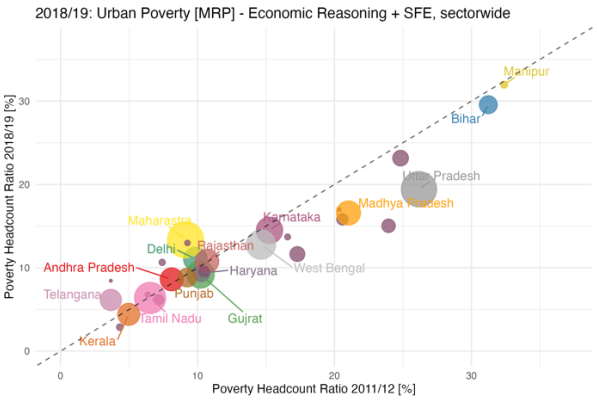
We start by discussing state-level results of this approach[33]. We present bubble plots for the 2017/18-2022/23 period based on the sector-wide economically reasoned model that includes SFE, in order to obtain an overview of state-level trends, see **Figure *6***. Beginning with the rural sector for 2017/18, we can see that nearly all states had experienced some poverty reduction. This holds for both initially poorer as well as initially better-off states. This evolution seems to have been continued in 2018/19 and 2019/20. In 2020/21 however, we see a suggestion of a reversal of this trend in states like Bihar, Jharkhand, and also Orissa. Between 2020/21 and 2022/23 little additional change is observed.

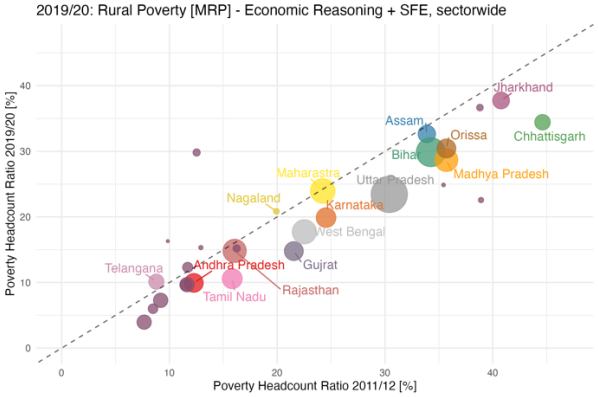
[33] See **Appendix Table 45** & **Appendix Table 46** for state-level overviews of these and many other different approaches.

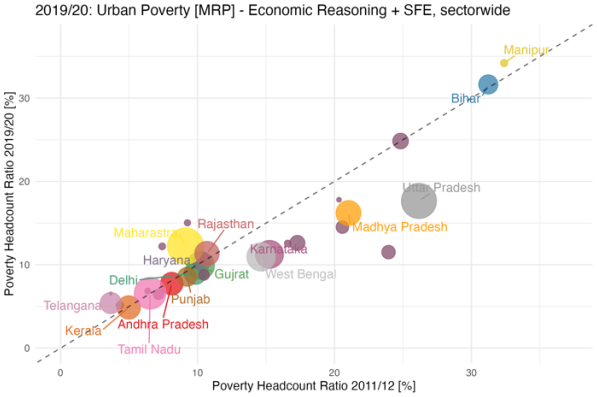

2017/18: Rural Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Chhattisgarh
Assam
Orissa
Bihar
Madhya Pradesh
Uttar Pradesh
Maharastra
Nagaland
Karnataka
Rajasthan
West Bengal
Gujrat
Telangana
Tamil Nadu
Andhra Pradesh

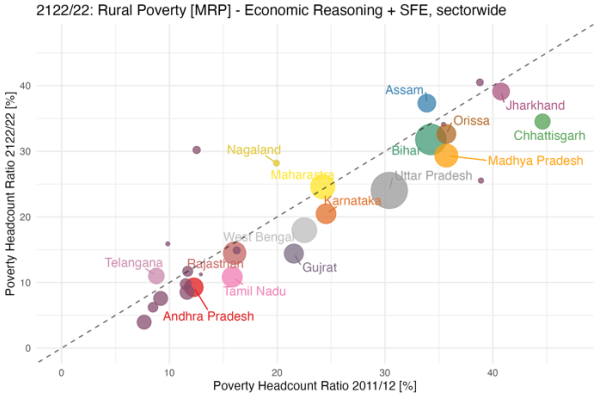

2017/18: Urban Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Uttar Pradesh
Karnataka
Madhya Pradesh
Maharastra
Delhi
West Bengal
Haryana
Rajasthan
Tamil Nadu
Andhra Pradesh
Gujrat
Telangana
Punjab
Kerala

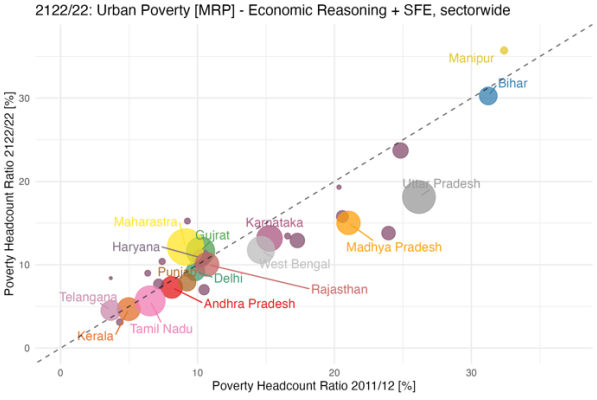

2018/19: Rural Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Chhattisgarh
Bihar
Orissa
Assam
Madhya Pradesh
Maharastra
Uttar Pradesh
Nagaland
Karnataka
West Bengal
Rajasthan
Gujrat
Telangana
Andhra Pradesh
Tamil Nadu


2018/19: Urban Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Uttar Pradesh
Madhya Pradesh
Karnataka
Maharastra
Delhi
Rajasthan
Andhra Pradesh
Haryana
West Bengal
Telangana
Punjab
Tamil Nadu
Gujrat
Kerala


2019/20: Rural Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Assam
Orissa
Chhattisgarh
Bihar
Maharastra
Uttar Pradesh
Madhya Pradesh
Nagaland
Karnataka
West Bengal
Telangana
Andhra Pradesh
Gujrat
Tamil Nadu
Rajasthan


2019/20: Urban Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Uttar Pradesh
Rajasthan
Madhya Pradesh
Maharastra
Karnataka
Haryana
Gujrat
West Bengal
Delhi
Telangana
Punjab
Andhra Pradesh
Kerala
Tamil Nadu


2122/22: Rural Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2122/22 [%]
Poverty Headcount Ratio 2011/12 [%]
Assam
Jharkhand
Orissa
Chhattisgarh
Nagaland
Bihar
Madhya Pradesh
Maharastra
Uttar Pradesh
Karnataka
West Bengal
Telangana
Rajasthan
Gujrat
Tamil Nadu
Andhra Pradesh


2122/22: Urban Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2122/22 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Uttar Pradesh
Maharastra
Karnataka
Gujrat
Haryana
Madhya Pradesh
West Bengal
Punjab
Delhi
Rajasthan
Telangana
Andhra Pradesh
Tamil Nadu
Kerala

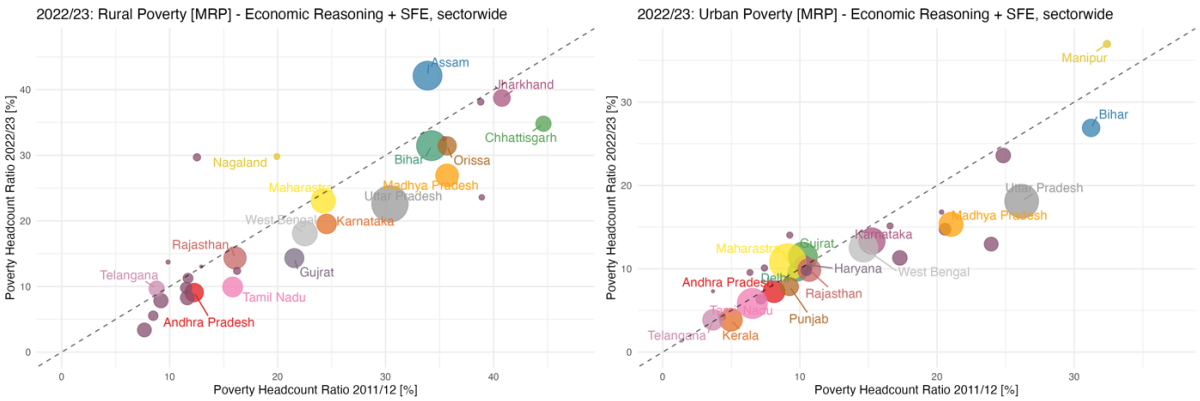



**Figure 6** Bubble plots giving state-level estimates of poverty between 2017/2018-2022/23, based on imputations out of EUS 2011/12 into different rounds of PLFS (rural – on the left, urban – on the right). Poverty status is determined using the MRP-corresponding poverty lines for the EUS-measure. Only the most populous states are highlighted. Bubble size corresponds to population size. For all target years of the imputations, the same model is used. These are: sector-wide, include state-fixed effects (SFE), economically reasoned, and include demographics as well as labour market variables like wages. The later were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

For the urban population the 2017/18 results indicate a slight reduction in poverty for initially poorer states like Uttar Pradesh and Madhya Pradesh. However, most other states experience no real decline in poverty. Some of the initially better-off states like Maharashtra even saw a slight growth in poverty rates compared to 2011/12. This picture seems to have basically remained unchanged over the subsequent years: significant poverty reduction in Uttar Pradesh and Madhya Pradesh but most other states remaining at their 2011/12 urban poverty rates.

**Figure** *7* presents the state-level overviews for 2017/18 and 2022/23 for the imputation using the same economically reasoned model estimated separately at the state-level[34]. Here parameter estimates on the predictors are allowed to change between states even though the overall specification is the same as before. The rural picture for 2017/18 is very similar to the sector-wide results: some poverty reduction for most states, notably Uttar Pradesh. Again, 2022/23 does not differ too much from 2017/18. For urban areas, however, state-level estimates of poverty for 2017/18 indicate a clear rise in poverty for some states, e.g. Maharashtra, and Madhya Pradesh.

[34] Again, due to the sheer amount of models, we did not prepare these plots for each approach. However, in the appendix some more plots and tables are given. Overall, they point in the same direction as the one that we present in the main text. Bubble plots for the full series can be studied in the appendix, see **Appendix Figure 20**.

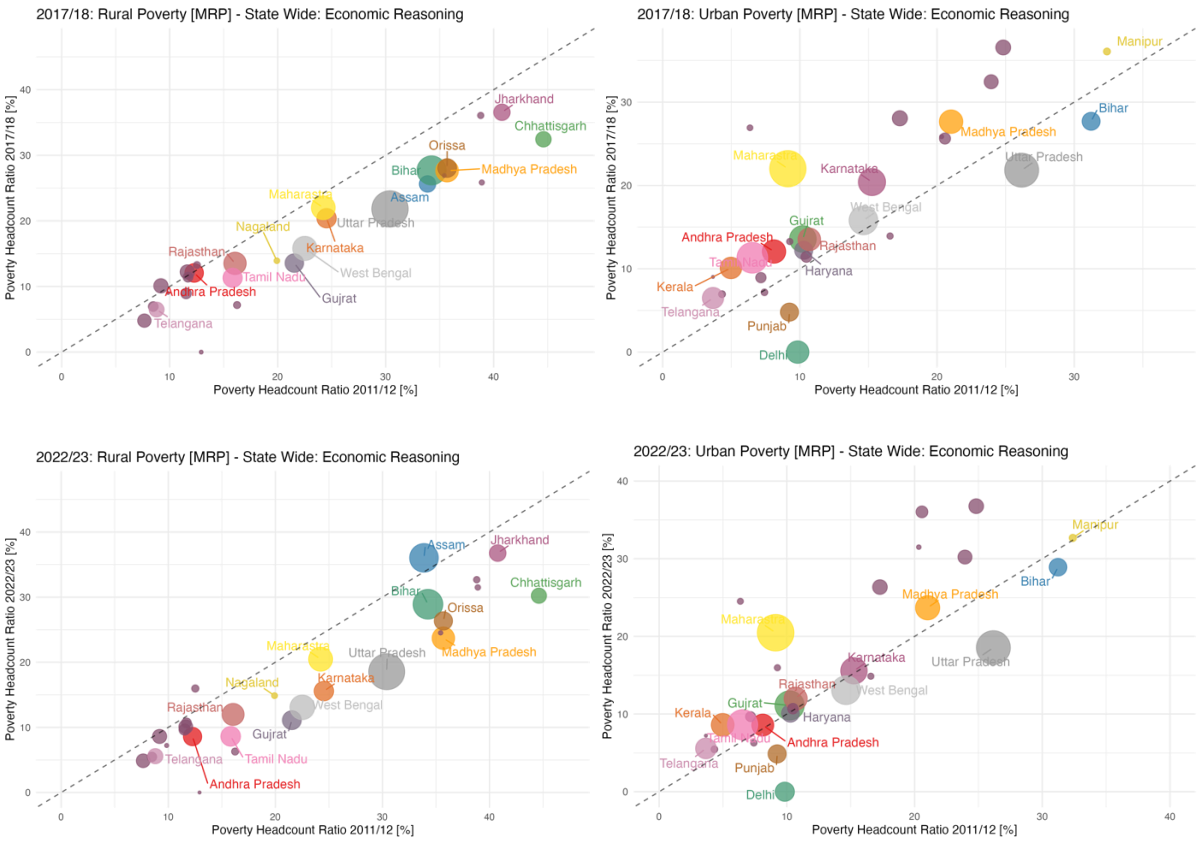
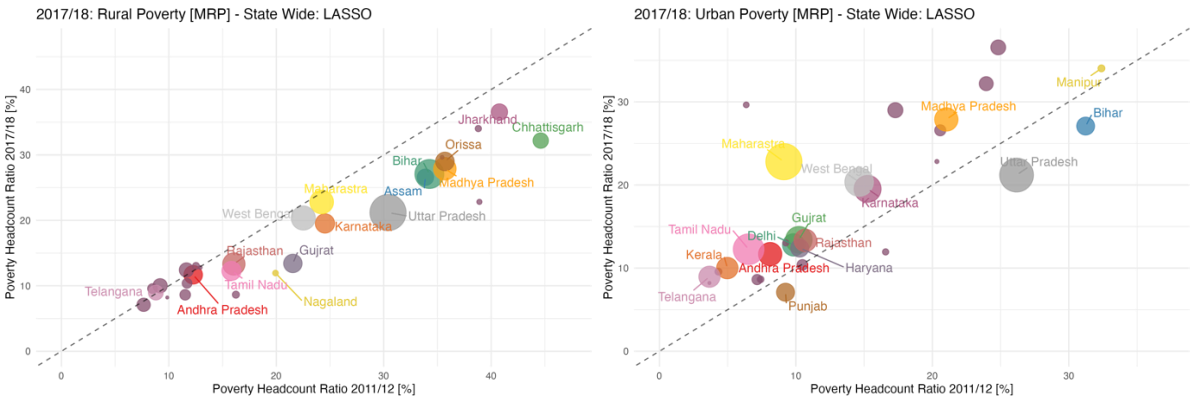



**Figure 7** Bubble plots giving state-level estimates of poverty for 2017/2018 and 2022/23, based on state-level imputations out of EUS 2011/12 into different rounds of PLFS (rural – on the left, urban – on the right). Poverty status is determined using the MRP-corresponding poverty lines for the EUS-measure. Only the most populous states are highlighted. Bubble size corresponds to population size. For the different target years of the imputations, the same model is used. These are: economically reasoned and include demographics as well as labour market variables like wages. These are then executed at the state-level, i.e. the same variables are used for all states, but the coefficients are allowed to vary. The wages were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

Lastly, we want to present the 2017/18 and 2022/23 results for the imputation using the state-wide model using a state-specific LASSO approach, see **Figure 8**[35]. This approach allows for models to differ between states with respect to their specification as well as coefficients.




[35] Bubble plots for the full series can be studied in the appendix, see **Appendix Figure 21**.

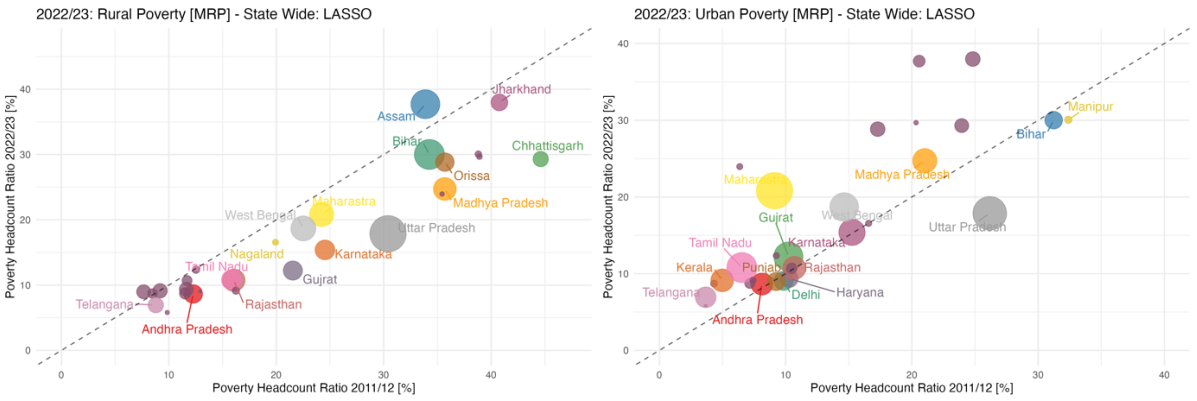



**Figure 8** Bubble plots giving state-level estimates of poverty for 2017/2018 and 2022/23, based on state-level imputations out of EUS 2011/12 into different rounds of PLFS (rural – on the left, urban – on the right). Poverty status is determined using the MRP-corresponding poverty lines for the EUS-measure. Only the most populous states are highlighted. Bubble size corresponds to population size. For the different target years of the imputations, the same model is used. The models are state-specific, found with a LASSO and include demographics as well as labour market variables like wages. The wages were deflated using the CPI. These state-specific models are obviously executed at the state-level, i.e. different variables and coefficients' values are used per state. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

Overall, the rural sector experiences the same poverty developments as before: some states experience some poverty reduction while especially the better-off states seem to be stuck around their 2011/12 poverty rates. The urban sector results are more comparable to the sector-wide economic reasoning model than the state-level imputation. Notably, urban Uttar Pradesh seems to experience clear poverty reduction after 2011/12, while many other states like Bihar and Karnataka experience no real change in poverty rates after 2011/12. Maharashtra and Madhya Pradesh may even have experienced an increase in urban poverty.

After highlighting some trends at the state-level, **Table *5*** presents the poverty rates at the sector level as well as India-wide numbers for 2017/18-2022/23.[36]

| Dataset | Sector | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---|---|---|---|---|---|---|---|
| **Sector-wide models** | | | | | | | |
| **Economic Reasoning + SFE** | Rural | 22.2 (0.86) | 21.6 (0.83) | 21.5 (0.84) | 20.8 (0.84) | 22.4 (0.86) | 23.1 (3.27) |
| **Economic Reasoning + SFE** | Urban | 13.3 (0.77) | 12.6 (0.74) | 11.9 (0.68) | 11.8 (0.67) | 11.9 (0.68) | 11.6 (0.68) |
| **Economic Reasoning + SFE** | Total | 19.5 (0.64) | 18.9 (0.62) | 18.5 (0.62) | 18.1 (0.62) | 19.4 (0.64) | 19.9 (2.34) |
| **Sector-wide models imputed at state-level** | | | | | | | |
| **Economic Reasoning** | Rural | 20.2 (0.78) | 19.2 (0.77) | 19.3 (0.77) | 18.2 (0.76) | 19.0 (0.80) | 19.9 (2.75) |
| **Economic Reasoning** | Urban | 13.4 (0.74) | 12.6 (0.70) | 12.0 (0.68) | 11.8 (0.65) | 11.8 (0.66) | 11.4 (0.67) |
| **Economic Reasoning** | Total | 18.0 (0.59) | 17.0 (0.58) | 17.0 (0.58) | 16.3 (0.57) | 16.9 (0.60) | 17.5 (2.03) |
| **State-wide models found with LASSO** | | | | | | | |
| **Individual model per state** | Rural | 20.6 (0.79) | 19.7 (0.79) | 19.8 (0.77) | 18.6 (0.75) | 19.6 (0.80) | 20.8 (2.79) |
| **Individual model per state** | Urban | 13.3 (0.73) | 12.5 (0.70) | 11.9 (0.67) | 11.7 (0.64) | 11.9 (0.67) | 11.5 (0.67) |
| **Individual model per state** | Total | 18.4 (0.60) | 17.5 (0.59) | 17.4 (0.57) | 16.6 (0.57) | 17.5 (0.61) | 18.3 (2.06) |

[36] For national overviews of different approaches, see: **Appendix Table 37** & **Appendix Table 38**

**Table 5** Sector-wide and India-wide poverty rates in percentage based on imputations out of EUS 2011/12 into different rounds of PLFS. Poverty lines are the EUS-corresponding poverty lines for the CES 2011/12 MRP measure. SFE stands for inclusion of state-fixed effects. Standard errors are given in parentheses.

In all three approaches the rural estimates for 2017/18 are lower than the 2011/12 values.[37] However, this poverty reduction seems to have slowed down dramatically after 2017/18. Until 2020/21, a discernable but much slower reduction took place. In that year – as previously discussed for the state-level estimates – a reversal took place and poverty rates went up again to return to their estimated 2017/18 levels.

For the urban population minimal poverty reduction at the sector-level is found for 2017/18. In the following years, some reduction continues, even for the pandemic years of 2020/21 and following. As the rural population holds the majority of Indians, it is not surprising that the country-wide total estimate follows a similar pattern as rural poverty. Some reduction in overall poverty up to 2017/18 followed by a reversal in the years after the COVID-19 pandemic. This implies that most of the poverty reduction visible in the results of this approach took place immediately after 2011/12 and before 2017/18 and were probably somewhat reversed by the impact of the global pandemic.

*MMRP Estimates*

For MMRP-estimates of poverty, no new imputation needs to be implemented. We use the same models and simulation results as before for MRP-corresponding estimates. The only difference is that we rely on the MMRP-corresponding poverty lines for the EUS-consumption measure, see **Appendix Table *23***. The resulting poverty rates are then – given our assumptions - comparable to their MMRP counterparts from 2011/12.

As these poverty rates rely on the same simulated data as used before, it is an interesting control to see whether the suggested poverty reduction up to 2020/21was reversed with these poverty lines as well. Note that these higher poverty lines, compared to the previously used MRP measures, imply a higher poverty cut-off. By definition, that covers a higher share of the population. However, poverty headcount rates are insensitive to severity or depth of poverty. That implies that we do not learn about movements in the consumption dimension under the poverty line, only whether some moved up or below it.

To prevent excessive repetition, we only present the 2017/18 results at the state-level[38].

[37] Remember that the 2011/12 MRP poverty rates based on the CES Type 1 are estimated to be 13.7% for the urban population and 25.7 % for the rural population, that culminates in 22 % India-wide.
[38] The overviews for the years in-between are attached in the Appendix, see **Appendix Figure 22**, **Appendix Figure 23** and **Appendix Figure 24**.


**Figure 9** Bubble plots giving state-level estimates of poverty for 2017/2018 and 2022/23, based on state-level imputations out of EUS 2011/12 into different rounds of PLFS (rural – on the left, urban – on the right). Poverty status is determined using the MMRP-corresponding poverty lines for the EUS-measure. Only the most populous states are highlighted. Bubble size corresponds to population size. For the different target years of the imputations, the same model is used. The models are state-specific, found with a LASSO and include demographics as well as labour market variables like wages. The wages were deflated using the CPI. These state-specific models are obviously executed at the state-level, i.e. different variables and coefficients' values are used per state. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

As can be seen in **Figure *9***, the rural state-level estimates for all three presented models seems to point to some poverty reduction in those states that were initially quite poor. Nearly no poverty change between 2011/12 and 2017/18 is visible for states that had a MMRP-poverty rate lower than 25 % in 2011/12. For the urban population, with sector-wide imputation (top plot in **Figure *9***) virtually no state experienced poverty reduction. The only exception are again states that had a quite high poverty rate to start with in 2011/12. For the state-wide imputations the poverty developments are more dispersed. Initially poorer states like Uttar

Pradesh experience a clear poverty reduction. The picture for states that had relatively low poverty rates in 2011/12 the picture is mixed, with some increases in poverty, e.g Maharashtra, and some falls, e.g. Punjab or Karnataka.

Remember that MMRP-poverty rates in 2011/12 were at 30.9% for rural and respectively 26.4% for the urban population, leading to an all-India poverty rate of 29.5%. As can be seen in **Table *6***, both sectors experienced light reduction in poverty between 2011/12 and 2017/18. The reduction for the urban sector appears less sharp compared to rural estimates. Rural poverty diminishes further until 2020/21 but then clearly rises again after that year. For urban estimates a similar, but less clear effect is visible. Overall, poverty estimates based on this approach and using the MMRP equivalent poverty lines indicate a small reduction in poverty, but a sizeable share of the population remains poor 12 years after 2011/12.

| Dataset | Sector | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---|---|---|---|---|---|---|---|
| **Sector-wide models** | | | | | | | |
| **Economic Reasoning + SFE** | Rural | 26.5 (0.93) | 25.9 (0.90) | 25.7 (0.90) | 25.0 (0.90) | 26.7 (0.91) | 27.6 (3.32) |
| **Economic Reasoning + SFE** | Urban | 24.0 (1.02) | 22.8 (1.00) | 21.9 (0.92) | 21.9 (0.92) | 21.9 (0.94) | 21.6 (0.95) |
| **Economic Reasoning + SFE** | Total | 25.8 (0.72) | 24.9 (0.70) | 24.6 (0.69) | 24.1 (0.69) | 25.4 (0.71) | 25.9 (2.39) |
| **Sector-wide models imputed at state-level** | | | | | | | |
| **Economic Reasoning** | Rural | 24.4 (0.84) | 23.3 (0.84) | 23.4 (0.84) | 22.2 (0.82) | 23.1 (0.87) | 24.2 (2.83) |
| **Economic Reasoning** | Urban | 24.1 (0.98) | 22.8 (0.93) | 22.0 (0.92) | 21.9 (0.89) | 21.6 (0.92) | 21.2 (0.94) |
| **Economic Reasoning** | Total | 24.0 (0.66) | 22.9 (0.65) | 22.8 (0.64) | 22.0 (0.64) | 22.6 (0.68) | 23.3 (2.10) |
| **State-wide models found with LASSO** | | | | | | | |
| **Individual model per state** | Rural | 24.9 (0.86) | 23.9 (0.86) | 24.0 (0.84) | 22.7 (0.83) | 23.8 (0.87) | 25.4 (2.83) |
| **Individual model per state** | Urban | 24.0 (0.97) | 22.9 (0.94) | 22.0 (0.92) | 21.9 (0.88) | 21.9 (0.92) | 21.5 (0.93) |
| **Individual model per state** | Total | 24.6 (0.67) | 23.6 (0.66) | 23.4 (0.65) | 22.4 (0.64) | 23.2 (0.68) | 24.3 (2.10) |

**Table 6** Sector-wide and India-wide poverty rates in percentage based on imputations out of EUS 2011/12 into different rounds of PLFS. Poverty lines are the EUS-corresponding poverty lines for the CES 2011/12 MMRP measure. SFE stands for inclusion of state-fixed effects.

*Summary of main approaches*

There are two main dimensions we need to keep in mind when summarizing these results. The two ways of measuring consumption in 2011/12, MRP and MMRP, are not strictly comparable. They rely on different reference periods for measuring consumption expenditure and consequently their respective poverty lines are not the same. This means that the poverty lines used to determine poverty status for imputations starting out of EUS are also different depending on whether MRP-consistent and MMRP-consistent estimates are sought.

We use two different approaches to shed some light on poverty developments after 2011/12. In Approach 1, we use the two types of CES from 2011/12 to impute into the HCES 2022/23. This gives us a 'snapshot' of how the Indian poverty rate may possibly have fared. As MMRP and MRP poverty lines and consumption measures are different, the final estimates also differ

for both. However, either way, we document some poverty reduction between 2011/12 and 2022/23. That reduction seems mostly situated in rural areas with less progress observed in urban areas. In both sectors and therefore also India-wide, significant poverty remains in 2022/23. That finding is robust to different model specifications; both including asset ownership as well as excluding these.

The second approach employs EUS 2011/12 as the source survey and imputes into different rounds of PLFS. It yields a more detailed picture of change over time. Comparing 2022/23 with 2011/12 indicates that poverty has fallen, but that the reduction has been relatively muted. While approach 1 points to a fall in poverty to about 12 percent of the population [in MRP terms], the second approach points to rates in 2022/23 ranging between 17-20 percent [in MRP terms] for the whole country, see ***Figure 10*** and ***Figure 11***.[39]

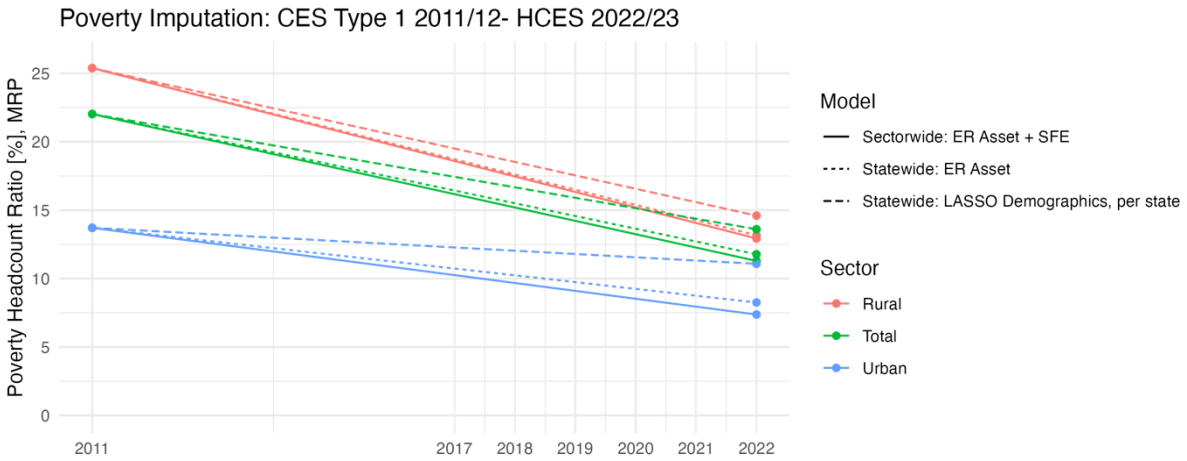



**Figure 10** Overview of discussed poverty estimates from approach 1 [MRP], imputation out of CES Type 1 2011/12 into HCES 2022/23. Shown are the estimates from three models discussed above. ER stands for Economically Reasoned Model, SFE for state-fixed effects.

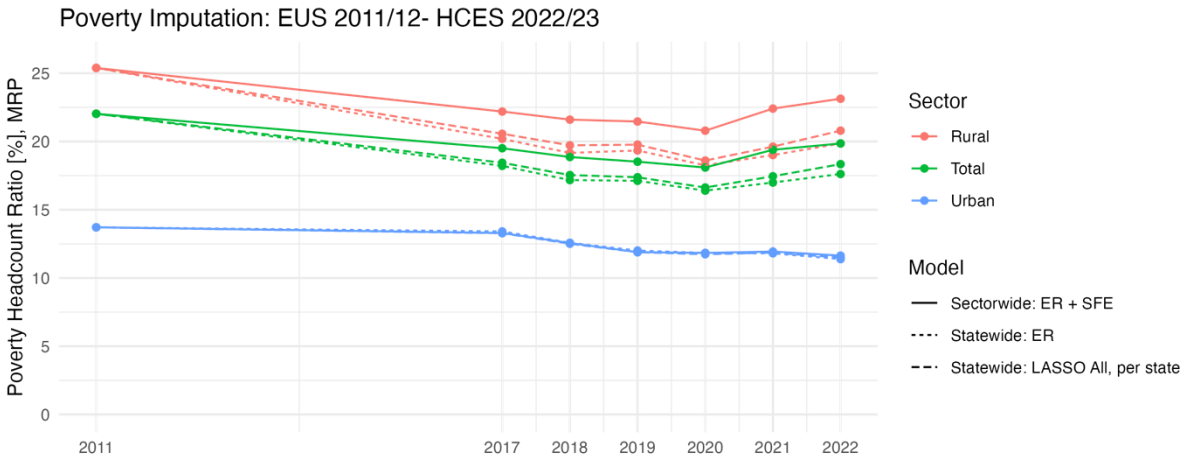



**Figure 11** Overview of discussed poverty estimates from approach 1 [MRP], imputation out of EUS 2011/12 into different rounds of PLFS. Shown are the estimates from three models discussed above. ER stands for Economically Reasoned Model, SFE for state-fixed effects.

[39] See **Appendix Figure 25** and **Appendix Figure 26** for overviews for the MMRP estimates.

These sector respectively nation-wide trends can be further investigated in **Figure 12** in which maps present total state-level poverty rates. For a reminder, we also include the 2011/12 total state poverty rates[40]. The included EUS-PLFS estimates is the above discussed statewide imputed economically reasoned model. The CES-HCES is based on the imputation out of CES Type 1 using statewide models that include some asset ownership variables. These overview maps show that for many states, a persistent level of poverty remained present after 2011/12. However, as at the sector-wide implications above, also at the state-level, the extent differs clearly between our two main approaches.[41]

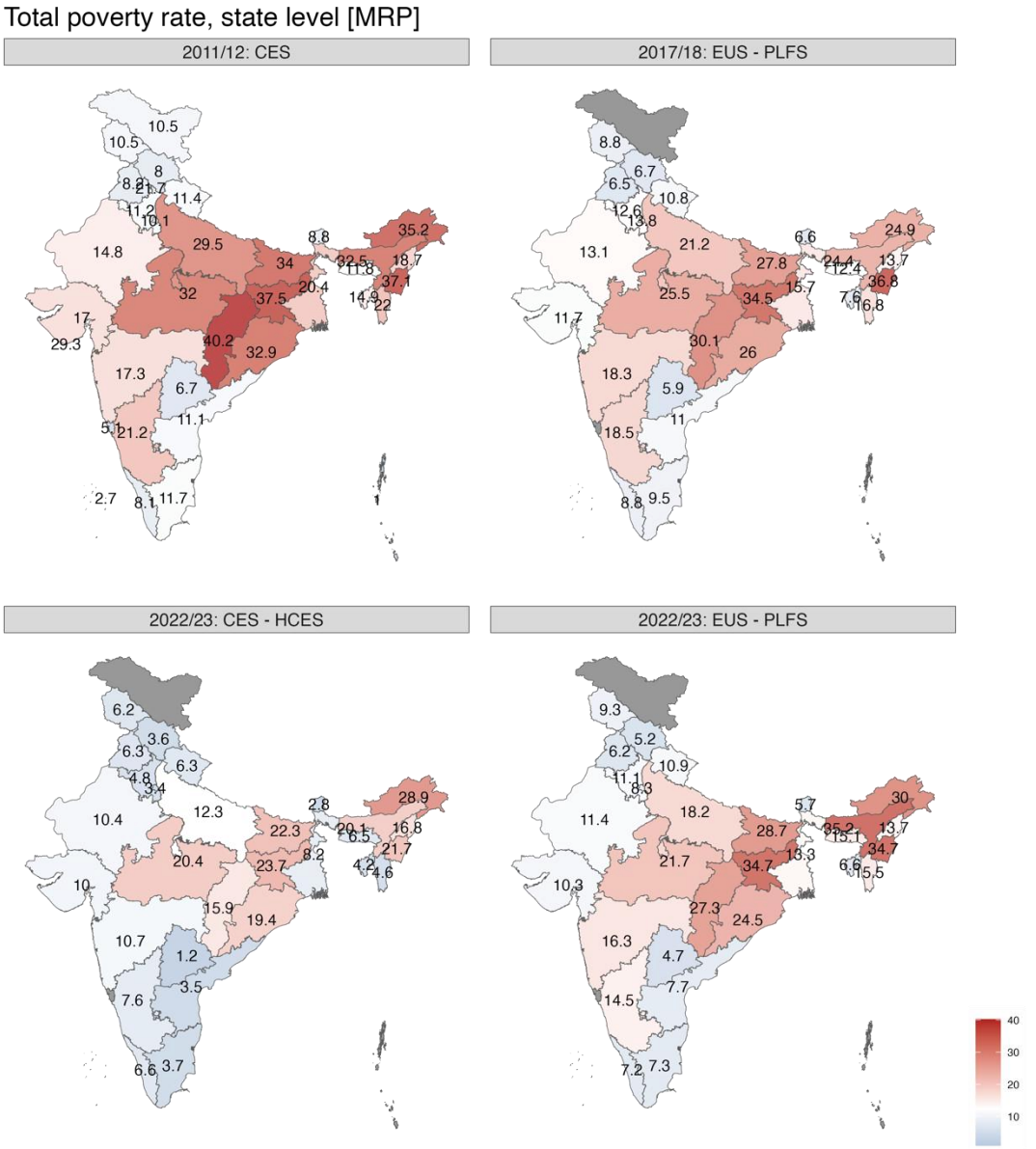



**Figure 12** Estimates of total state-level poverty rates [given in percentage, MRP], for 2011/12 based on the CES Type 1, the EUS-PLFS numbers are based on sectorwide imputations using an economically reasoned model that includes labour market and wage variables as well as state-fixed effects (SFE), the CES-HCES map is based on an imputation at the sector-level, using an economically reasoned model that also includes some asset ownership variables and SFE. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL

[40] See **Appendix Figure 27** for the 2011/12 state-level estimates of total poverty, here, we also included the states' names for better orientation.

[41] Maps covering rural and urban poverty estimates are in the appendix: **Appendix Figure 28** & **Appendix Figure 29**. Overall, they show similar developments.

method, poverty rates are computed using population-weights.

How can the difference in estimates be assessed? There are many differences between the two approaches and we cannot isolate the impact on final estimates of each individual difference, nor of the overall effect of all of them. The first striking difference is the different source survey. Although CES and EUS are fielded by the same organization using similar survey frames and questionnaires, there are two main issues regarding these two surveys: the consumption measure definition and the variables included. The EUS consumption aggregate can be seen as a somewhat coarser measure compared to the more detailed CES aggregate. The CES includes asset variables while EUS does not. But in turn, the EUS includes labour market variables like wages which the CES does not. As has been discussed in the literature, assets might work well for models imputing into the same time period. But this strong linkage between asset ownership and consumption expenditure could well change over time (compromising the "stability assumption" underpinning our imputation approach). Labour market variables that capture wages and earnings are likely to capture well fluctuations in economic conditions.

The EUS-PLFS imputations also point to poverty reduction after 2011/12, albeit more slowly than the CES-based imputations, see ***Figure 11***. The different rounds of PLFS allow for a more detailed picture than just one imputation into 2022/23. With these, we establish that most of the observed poverty reduction after 2011/12 seems to have taken place between 2011/12 and 2017/18. This reduction continued, sluggishly, until 2020/21, the year COVID-19 broke out. But then, a slight reversal of this reduction appears to have set in.

Overall, both approaches rely on the non-testable stability assumption. Although we show that this assumption holds for imputations between 2004/05 and 2011/12 (see robustness section below) it might not hold for after 2011/12. We cannot therefore conclude which approach is to be preferred at this point. We think of these estimates as providing a bracket within which the present-day poverty rate is likely to be embedded. Two things clearly emerge from the analysis. First, progress in poverty reduction has slowed since the 2004/5-2011/12 interval. Second, poverty in India remains far from being eliminated. It seems that some progress was made, potentially more between 2011/12 and 2017/18, but COVID-19 seems to have brought that progress to a halt. India remains with a sizeable share of its population living in poverty in 2022/23. Indeed, given that India's population grew from 1.26 billion in 2011 to 1.43 billion in 2022/23, the number of poor people in India has declined very little, if at all, during this period, see ***Figure 13*** and ***Figure 14***.[42]

[42] The corresponding two plots based on the MMRP measurements can be found in the appendix, see **Appendix Figure 30** and **Appendix Figure 31**.

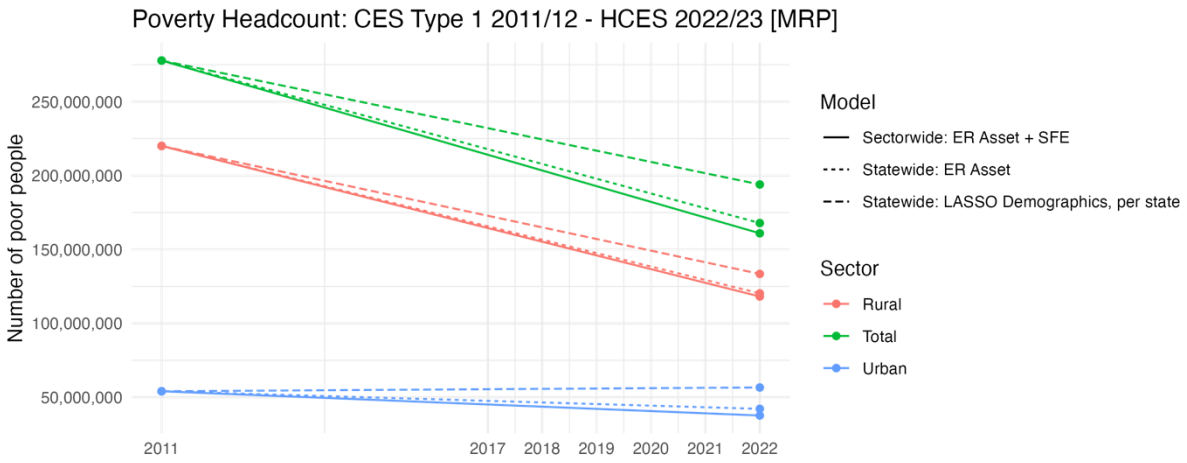



**Figure 13** Number of poor people based on imputation results from Approach 1, using CES Type 1 2011/12 to impute into HCES 2022/23. Poverty status is based on the MRP consumption measure and corresponding poverty lines. ER stands for Economically Reasoned Model, SFE for state-fixed effects.

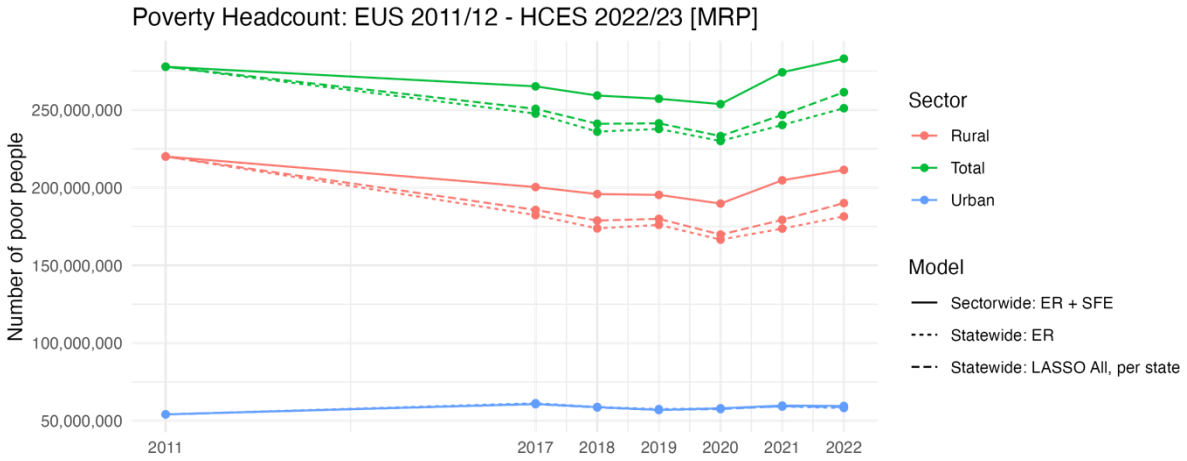



**Figure 14** Number of poor people based on imputation results from Approach 1, using EUS 2011/12 to impute into different rounds of PLFS. Poverty status is based on the MRP consumption measure and corresponding poverty lines. ER stands for Economically Reasoned Model, SFE for state-fixed effects.

## 5. Robustness

Our analysis has involved a variety of different datasets, to which we have applied multiple survey-to-survey imputation approaches. As we have acknowledged, underlying assumptions – notably the "stability assumption" – are of pivotal importance in this work. We consequently examine and assess the assumptions here, in a variety of robustness checks. In a first tack, we impute both within and between the CES 2011/12 Type 1 and the EUS 2011/12 surveys. Given that we are imputing within the same year in this effort, we would expect the stability assumption to be readily met. However, we do also wish to probe whether the CES and EUS surveys can be shown to represent the same underlying population, and to collect control variables in the same way and using the same definitions.

The assumption of stable parameters becomes more contentious when imputing over time. To probe this, we impute between CES 2004/05 and CES Type 1 2011/12. This application is

appealing as there are no comparability issues between these two CES rounds, and so imputed poverty trends can be compared to direct estimates.

In a final robustness check we use the CES 2011/12 to impute into PLFS and EUS 2011/12 to impute into HCES 2022/23.

*Imputations within 2011/12*

*CES-CES*

We start by imputing out of one sub-sample of CES 2011/12 Type 1 into a second random sub-sample of the same survey. This exercise is intended to demonstrate proof-of-concept: the method and models we use are able to provide us with the actual poverty rates for 2011/12 when all underlying assumptions are met. We can also assess the appeal of some of the different modeling decisions we consider, such as inclusion of state fixed effect (SFE) and asset variables in the prediction models. Obviously, this application does not allow us to gauge whether we can impute poverty correctly over time.

We present only imputations out of CES Type 1 here. For these imputations, we use the official state-level Tendulkar poverty lines for 2011/12 to determine poverty status. Recall that the poverty rates at the national level for this set of states for 2011/12 MRP were 25.4% for the rural population, 13.7% for the urban population and 22% for the full country.

For the imputation models estimated nationally separately for the rural and urban sectors, both the CES survey, and subsequently the EUS, were randomly split in two. This ensured that we have, statistically speaking, two smaller sub-samples of both the CES and EUS. We train our models on one half of the observations to impute into the other half.

As can be seen in **Table** *7* imputing from one sub-sample of the CES into another leads to estimates that are very close to direct estimates regardless of the specific model employed. The predicted poverty rates tend to slightly overstate "true" poverty, notably in urban areas, but this diminishes when SFEs are included.

| Model | SFE | Rural | Urban | Total |
|---|---|---|---|---|
| Economic Reasoning Demographics | No | 26.6 (1.27) | 17.1 (1.20) | 23.9 (0.97) |
| Economic Reasoning Demographics | Yes | 25.7 (1.11) | 15.9 (0.98) | 22.9 (0.84) |
| LASSO Demographics | No | 26.8 (1.28) | 17.1 (1.14) | 24.0 (0.97) |
| LASSO Demographics | Yes | 25.8 (1.10) | 15.9 (0.98) | 22.9 (0.83) |
| Economic Reasoning Assets & Demographics | No | 26.6 (1.22) | 16.3 (0.96) | 23.7 (0.91) |
| Economic Reasoning Assets & Demographics | Yes | 25.9 (1.09) | 15.3 (0.89) | 22.9 (0.82) |
| LASSO Assets & Demographics | No | 26.3 (1.17) | 16.3 (0.96) | 23.5 (0.88) |
| LASSO Assets & Demographics | Yes | 25.8 (1.07) | 15.0 (0.85) | 22.7 (0.80) |
| Model for PLFS | No | 26.9 (1.29) | 16.7 (1.07) | 24.0 (0.97) |

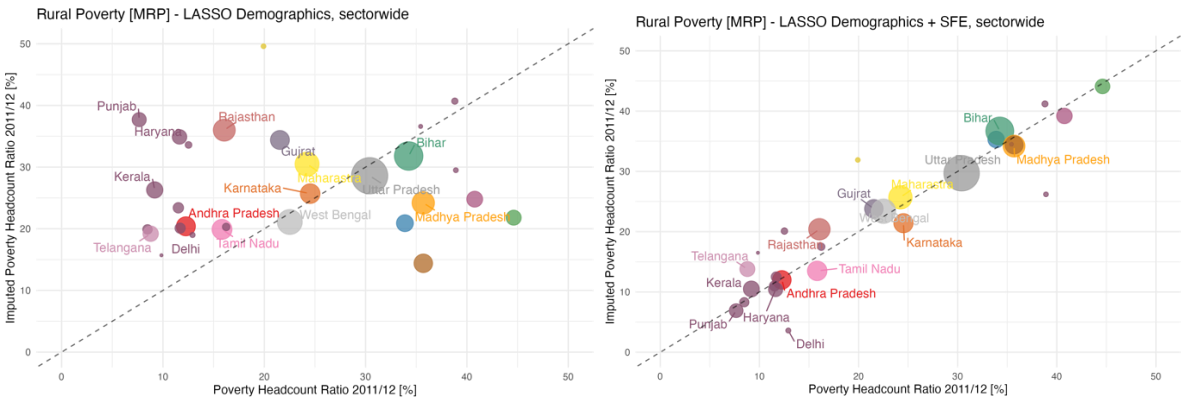
| | | | | |
|---|---|---|---|---|
| Model for PLFS | Yes | 25.8 (1.09) | 15.7 (0.94) | 22.9 (0.82) |

**Table 7** Estimated poverty rates based on imputations out of CES 2011/12 type 1 into CES 2011/12 type 1. SFE refers to the inclusion of state-fixed effects. Models are either economically reasoned or determined by the LASSO approach we defined previously. Imputations took place at the sector-level, i.e. rural and urban, the total numbers came out of a population-weighted addition. This imputation only included the bigger states, which were used in the previous attempts as well. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

The last two rows in **Table** *7* present the values for an imputation based on a model that only includes the basic demographics that overlap between CES and PLFS. Even with this abbreviated specification the rural poverty estimate is very close to the truth, while the urban suffers from the same (small) upwards bias as during the other approaches. One can surmise that repeatedly splitting the CES randomly in two, and repeating the exercise multiple time, would eliminate the small observed upward bias.

We note at this point that almost all models lead to very similar results comparable at the sector-level as well as for the whole country. Next, we want to highlight state-level implications for some of the modeling decisions[43].

First, we examine the impact of including SFEs in the sector-wide models. As expected, sector wide models without SFE lead to quite dramatic deviations of the true state-level poverty estimates 2011/12. Inclusion of SFE leads to state-level estimates that are much closer to the original value in 2011/12. Visually, this is reflected in **Figure *15*** by all dots being much closer to the 45-degree line. Then, better-off and poorer states as well as smaller and bigger states are estimated correctly.




[43] Again, we refer to the appendix for table overviews, see **Appendix Table 47** and following.

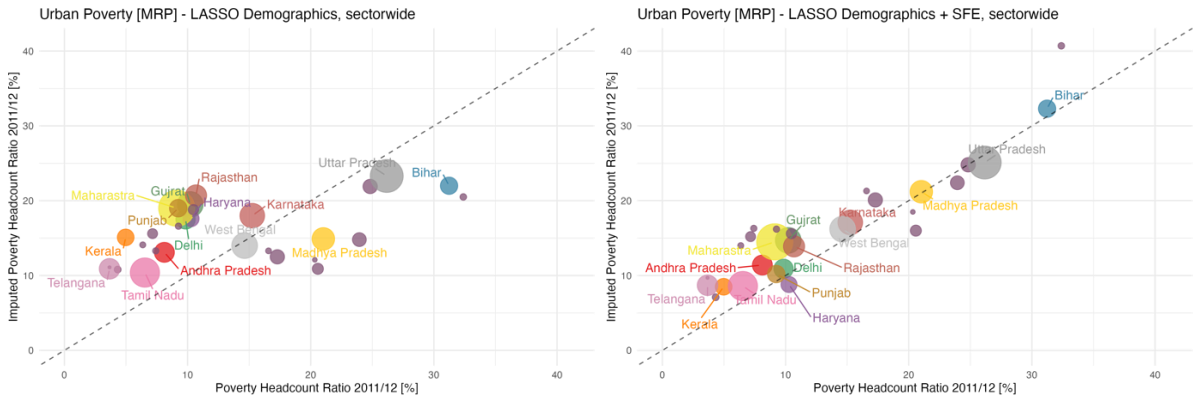



**Figure 15** Bubble plot giving poverty rates at the state level (rural – top, urban – below). The x-axis gives the official values for 2011/12, while the y-axis depicts estimates for the same year. Poverty status is determined using the MRP consumption measure and the Tendulkar poverty lines. Only the most populous states are highlighted. Bubble size corresponds to population size. The models are chosen using LASSO. As CES only includes demographic variables, we can only add state-fixed effects (SFE). The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

This first series of tests establishes that survey-to-survey imputation can work for the Indian context. Both, economically reasoned models as well as those found by LASSO can lead to correct poverty estimates for 2011/12. However, if we rely on sector-wide imputations, SFEs should be included. Their advantage is visible at the sector-wide level as well as clearly in the state-level estimates.

*EUS-EUS*

We can repeat the above exercise, now with our other key dataset - the EUS 2011/12. For brevity we report only on sector-wide imputations. Again, we randomly split the EUS into two sub-samples. The difference between this round of tests and the previous is that we can assess whether relying on the more coarsely measured EUS consumption estimate as well as whether the newly computed poverty lines can be used in an imputation exercise and lead to similar results.

| Model | SFE | Rural | Urban | Total |
|---|---|---|---|---|
| LASSO Demographics | No | 26.5 (1.35) | 17.8 (1.35) | 24.0 (1.03) |
| LASSO Demographics | Yes | 25.8 (1.17) | 16.1 (1.07) | 23.0 (0.88) |
| Economic reasoning | No | 26.1 (1.28) | 17.1 (1.21) | 23.4 (0.97) |
| Economic reasoning | Yes | 25.7 (1.10) | 15.7 (1.01) | 22.7 (0.83) |
| LASSO all variables | No | 26.0 (1.23) | 42.1 (1.38) | 30.7 (0.96) |
| LASSO all variables | Yes | 25.7 (1.10) | 15.7 (1.03) | 22.8 (0.83) |
| LASSO for CES | No | 26.5 (1.32) | 17.8 (1.35) | 24.0 (1.01) |
| LASSO for CES | Yes | 25.9 (1.16) | 16.1 (1.07) | 23.0 (0.88) |

**Table 8** Estimated poverty rates based on imputations out of EUS 2011/12 into EUS 2011/12. SFE refers to the inclusion of state-fixed effects. Models are either economically reasoned or determined by the LASSO approach we defined previously. Imputations took place at the sector-level, i.e. rural and urban, the total numbers came out of a population-weighted addition. This imputation only included the bigger states, which were used in the previous attempts as well. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. For poverty status determination, the EUS-corresponding MRP poverty lines were used.

**Table *8*** presents very similar picture to what was previously seen for imputations within the CES. Rural poverty rates are closely met with almost all models. For the urban population, there is some light over-estimating, and only for one model – LASSO all variables – a clearly erratic value was reached. Again, the inclusion of SFE leads to somewhat improved results, especially for the urban sector. There are no additional insights at the state-level relative to what was reported above with respect to the CES-CES imputations.[44]

Overall, these results allow us to conclude that relying on the EUS measure as well as the corresponding poverty lines is a reasonable assumption – at least within 2011/12.

However, we are not yet certain that imputing between the CES and EUS surveys also works. After all, they could represent (slightly) different populations, or measure predictors in a different manner. We therefore consider, next, the success of imputing between these two datasets.

*CES-EUS & EUS-CES*

This set of tests allows us to further establish comparability of the two surveys, CES and EUS, that we claimed and discussed before. Due to limited overlap in variables between the two surveys, we present fewer model variations than before. For this approach, we rely solely on models that were found using LASSO and include all variables that are included in both surveys. At the sector-level, we rely on SFEs as well. At the state-level we test two options: the same model that was used at the sector-level, but where we now allow coefficients to differ between states; or a second option where we allow model specifications to across states.

**Table *9*** presents the sector-wide results for three different approaches imputing out of CES 2011/12 Type 1 into EUS 2011/12. The underlying models only rely on demographics that are included in both datasets as neither asset ownership nor wage and other detailed labour market indicators can be used. Overall, the imputed values are quite close to the true values.[45]

| Model | Rural | Urban | Whole |
|---|---|---|---|
| **Sectorwide** | | | |
| **LASSO, for CES + SFE** | 25.9 (0.93) | 16.1 (0.94) | 23.0 (0.71) |
| **Re-used sectorwide model at the state-level** | | | |
| **LASSO, for CES** | 26.4 (0.91) | 15.9 (0.92) | 23.3 (0.70) |
| **State-specific model** | | | |
| **LASSO, for CES** | 26.4 (0.92) | 16.1 (0.95) | 23.5 (0.71) |

**Table 9** Estimated poverty rates based on imputations out of *CES* 2011/12 type 1 into *EUS* 2011/12. SFE refers to the inclusion of state-fixed effects. Models are either economically reasoned or determined by the LASSO approach we defined previously. Imputations took place at the sector-level, i.e. rural and urban, the total numbers came out of a population-weighted addition. The imputation takes place at the household level and relies on 1000 rounds of

[44] Please see **Appendix Table 49** & **Appendix Table 50** for a comparison of state-level estimates for imputations within EUS.

[45] **Appendix Table 51** summarizes some quantiles and mean of the actual MPCE from CES 2011/12 Type 1 and imputed values' distributions. Further, **Appendix Figure 32** and **Appendix Figure 33** present the PDFs.

simulation using the ELL method, poverty rates are computed using population-weights. We use the Tendulkar MRP poverty lines to establish poverty status.

**Figure *16*** below presents the previously introduced bubble-plots for the imputation out of CES T1 into EUS[46]. It is clearly visible that imputed state-level estimates of poverty are reasonably close to their actual values.

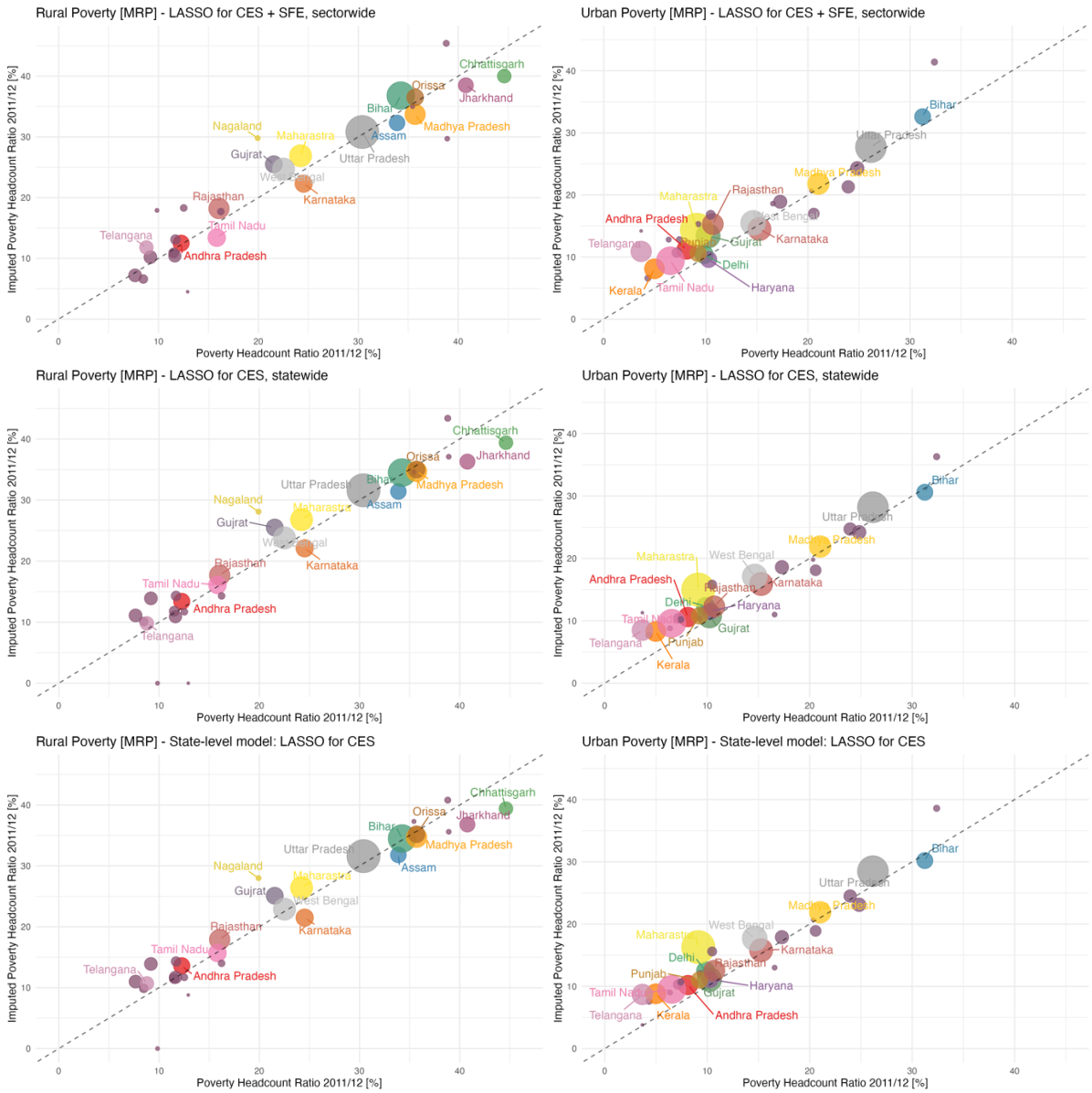



**Figure 16** Bubble plots giving state-level estimates of poverty for 2011/12, based on imputations out of CES 2011/12 type 1 into EUS (rural – on the left, urban – on the right). Poverty status is determined using the Tendulkar poverty lines for the CES MRP-measure. Only the most populous states are highlighted. Bubble size corresponds to population size. The two plots on top depict the results of an imputation at the sectoral-level using a model found by LASSO and state-fixed effects (SFE). The two plots in the middle use this same model at the state-level, this leads to the exclusion of SFE. The two plots below depict a state-specific model, also found with LASSO. These state-specific models are obviously executed at the state-level, i.e. different variables and coefficients' values are used per state.

[46] For a closer look at the actual numbers at the state level we refer to **Appendix Table 52** & **Appendix Table 53**.

.

The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

For completeness, we also imputed out of EUS 2011/12 into CES 2011/12 Type 1. Again, results are robust at the sector as well as state-level. However, a slightly bigger upwards bias in urban values is present, see **Table *10*** below[47].

| Model | Rural | Urban | Whole |
|---|---|---|---|
| **Sectorwide** | | | |
| **LASSO, for CES + SFE** | 26.1 (0.94) | 16.9 (0.99) | 23.4 (0.72) |
| **Re-used sectorwide model at the state-level** | | | |
| **LASSO, for CES** | 26.3 (0.90) | 17.3 (1.03) | 23.6 (0.71) |
| **State-specific model** | | | |
| **LASSO, for CES** | 25.9 (0.89) | 17.1 (1.00) | 23.4 (0.70) |

**Table 10** Estimated poverty rates based on imputations out of *EUS* 2011/12 type 1 into *CES* 2011/12. SFE refers to the inclusion of state-fixed effects. Models are either economically reasoned or determined by the LASSO approach we defined previously. Imputations took place at the sector-level, i.e. rural and urban, the total numbers came out of a population-weighted addition. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. We use the Tendulkar MRP-corresponding poverty lines for the EUS consumption measure to establish poverty status.

Overall, these two sets of robustness checks allow us to conclude that EUS and CES are indeed comparable samples and imputations between the two lead to similar results. Further, the exercise allowed us to successfully test our newly computed poverty lines for the EUS measure. Although a perfect match with actual numbers cannot be expected, these imputed values are satisfactorily close to the true poverty estimates and are quite comparable to previously tested imputations within CES 2011/12.

*Imputations between 2004/05 and 2011/12*

As noted above, testing the survey-to-survey approach, and exploring alternative modelling decisions, within the same year, does not allow us to confront all of the key assumptions involved in this analysis. Accordingly, we next assess whether the method we are employing can produce reliable estimates of poverty over time. We consider the interval between the CES 2004/5 and 2011/12 – a period of rapid economic growth and substantial poverty reduction. We ask whether our poverty imputation approach can capture the true evolution of poverty between these two surveys. This latter measure can be calculated directly from the respective surveys, as the consumption data in the two are directly comparable. Success would imply, at least in this application, that the "stability assumption" is met. In addition, this exercise allows us to gauge the appeal of including asset ownership variables in the imputation exercise.

| Year | Rural | Urban | Total |
|---|---|---|---|
| **2004/05** | 41.8 | 25.7 | 37.2 |
| **2011/12** | 25.4 | 13.7 | 22.0 |

[47] See **Appendix Table 54** and **Appendix Table 55** in the Appendix for state-level comparisons in tables.

**Table 11** Indian poverty rates in 2004/05 and 2011/12 based on the MRP consumption measure in the CES. In the following robustness test, we will impute out of one round into the other in an attempt to reproduce these poverty numbers.

Between 2004/05 and 2011/12 Indian poverty fell sharply, see **Table *11***. We use the CES rounds from these two years to test our approach of imputing over time. Both years employ the MRP definition of consumption. We start by imputing this measure forward out of 2004/05 into 2011/12. We the repeat the exercise by imputing backwards out of 2011/12 into 2004/05. As we use the CES MRP measure, we can use the corresponding official poverty lines for 2011/12 and for 2004/05. For these robustness checks, we use sector-wide models including state fixed effects. As in our main analysis, we focus on the biggest states and do not include Union Territories and some smaller states. However, for this exercise, we retain the 2011/12 state borders.

One argument in favour of staying in the realm of CES is the availability of durable asset ownership dummies. Those are often argued to be especially useful for consumption predictions as more affluent households are more likely to spend on these. On the other hand, mass availability of a previously scarce consumer durable might dilute this regressor type's predictive power for consumption at a later state. In the context of imputations over time, this problem is often explained by the example of cellphones. While ownership of a mobile phone was highly correlated with high consumption expenditure in the early 2000s, this link was much weakened in the subsequent years as, over time, most of the population – including those that are still poor – acquired this item. It's ability to distinguish the poor from the non-poor is thus likely to have weakened over time. This basically represents a case of a failing stability assumption. Inclusion of such assets in a prediction model might thus result in an over prediction of how poverty fell over time. In the absence of knowledge of how poverty truly changed, it is likely insufficient to merely assess population penetration of an asset as a means to judge whether the stability assumption is likely to have been violated[48]. Examples of the prediction models we apply can be found in **Appendix Table *56*** and following. The following **Table *12*** summarizes the sector-wide and total results from the forward imputation of the CES 2004/5 into the CES 2011/12.

| Model | SFE | Assets | Rural | Urban | Total |
|---|---|---|---|---|---|
| Economic Reasoning | Yes | Yes | 29.0 (1.01) | 11.2 (0.69) | 23.9 (0.75) |
| Economic Reasoning | No | Yes | 34.6 (1.12) | 11.2 (0.71) | 27.9 (0.83) |
| Economic Reasoning | Yes | No | 33.8 (0.95) | 14.3 (0.82) | 28.2 (0.72) |
| Economic Reasoning | No | No | 34.6 (1.12) | 14.5 (0.87) | 28.9 (0.84) |
| LASSO | Yes | Yes | 23.0 (0.88) | 12.5 (0.71) | 20.0 (0.66) |
| LASSO | No | Yes | 23.6 (0.96) | 12.4 (0.73) | 20.4 (0.72) |
| LASSO | Yes | No | 27.4 (0.93) | 14.5 (0.81) | 23.7 (0.70) |
| LASSO | No | No | 28.5 (1.12) | 14.8 (0.92) | 24.6 (0.84) |

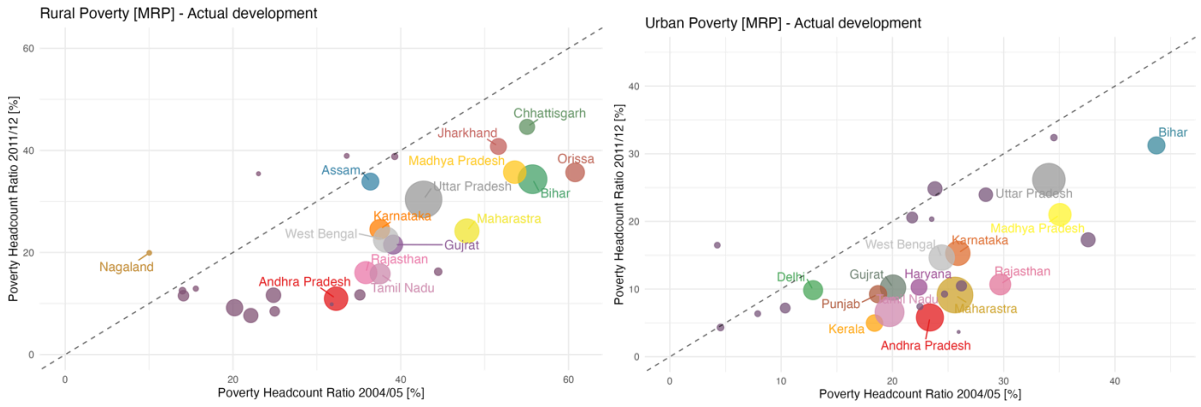
**Table 12** Poverty headcount ratios for the full urban respectively rural population of India in 2011/12 based on imputations out of CES 2004/05 into CES 2011/12 type 1. We tested different models, based on economic reasoning and LASSO, as well as with and without assets and SFEs (state-fixed effects). The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using

[48] Nevertheless, see **Appendix Table 20** for exactly that comparison.

population-weights. Poverty status is determined by the 2004/05 poverty lines. Standard errors are given in parentheses.

As in the previous robustness checks, the inclusion of SFEs brings the imputed values closer to the actual sector-wide poverty rates. However, that effect size is much bigger now. Economically reasoned models seem to lead to similar results as their LASSO counterparts for the urban population. For rural, economically reasoned models lead to an upward bias while LASSO seems to lead to underestimates. Final estimates of poverty are sensitive to the inclusion of assets. Overall, those lead to lead to small underprediction of poverty rates while for rural they seem to bring the final estimates at the sector-level closer to the actual values. Note that the inclusion of assets is not necessary to be able to impute the correct values of poverty for 2011/12. Overall, the imputed sector-wide values seem remarkably close to the actual values in 2011/12 - especially given the 7-year period of high growth. This gives us some confidence that this approach might work when imputing out of surveys from 2011/12 into datasets that were surveyed thereafter after.

We scrutinize the state-level success of these imputations in **Figure *17***[49]. We present three different graphs per sector, the first shows the actual poverty reduction between 2004/05 and 2011/12, in the second, we plot the imputed values against the 2004/05 values and lastly a plot of imputed versus actual poverty in 2011/12. As the top two plots in show clearly, virtually all states saw poverty fall between 2004/5 and 2011/12. The second two plots show that a sector-wide model based on economic reasoning employing demographics and assets leads to very similar estimates. This holds especially true for bigger states, like rural Uttar Pradesh and urban Maharashtra. It seems that models that rely on some asset variables can successfully predict poverty rates from 2004/05 forward into 2011/12.




[49] See **Appendix Table 58** & **Appendix Table 59** for overviews of rural and urban imputed values at the state-level.

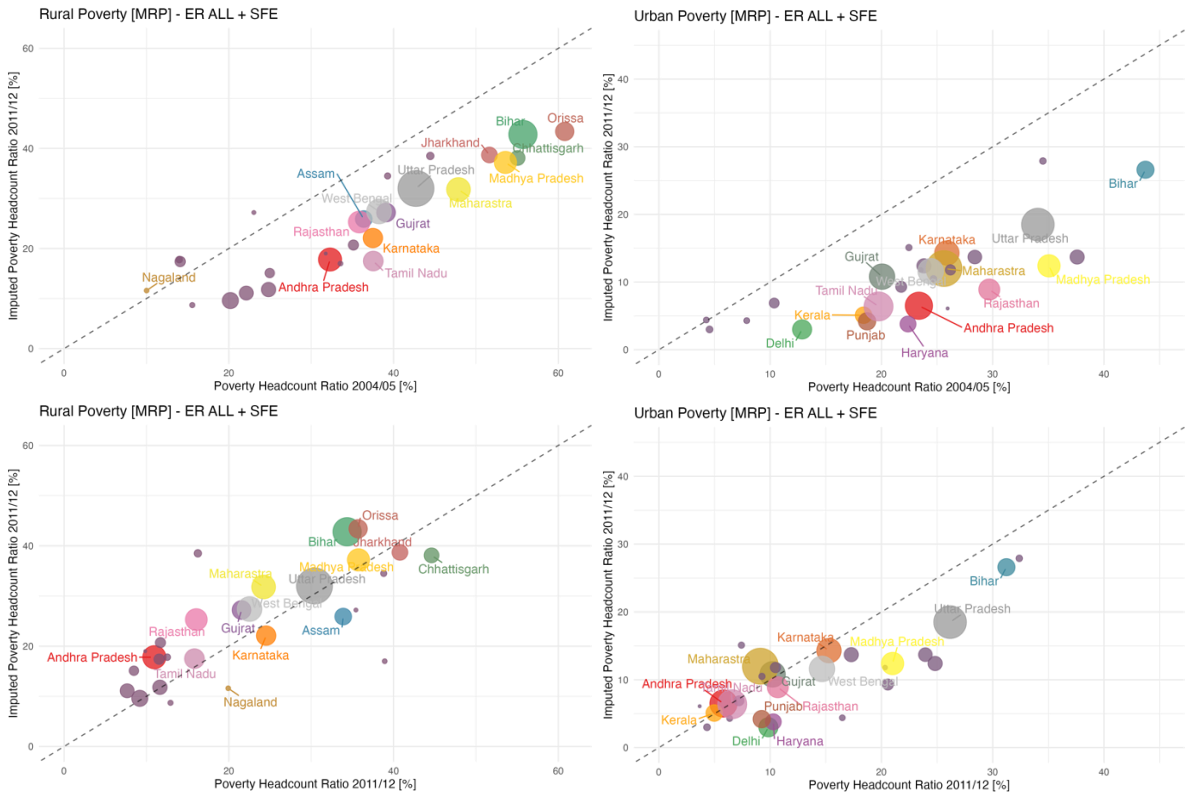



**Figure 17** Bubble plots giving state-level estimates of poverty for 2011/12, based on imputations out of CES 2004/05 into CES 2011/12 type 1 (rural – on the left, urban – on the right). Poverty status is determined using the CES 2004/05 poverty lines for its consumption measure. Only the most populous states are highlighted. Bubble size corresponds to population size. The top two plots show the actual poverty development at the state-level over time. The two plots in the middle depict the imputed poverty rates at the state-level for 2011/12 against their 2004/05 counterparts. The underlying model for this is an economically reasoned model that also includes asset ownership and state-fixed effects (SFE). The plots below depict these imputed values against their actual 2011/12 values that were measured in the 2011/12 CES type 1. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

We next impute out of CES 2011/12 backwards into CES 2004/05. This is an additional test that allows us to see whether the stability assumption holds in both directions. It could also be thought of a way to see whether not only poverty reduction can be imputed correctly, but also a growth in poverty rates.

| Model | SFE | Assets | Rural | Urban | Total |
|---|---|---|---|---|---|
| Economic Reasoning | No | No | 32.6 (1.15) | 23.5 (1.88) | 30.2 (0.98) |
| Economic Reasoning | Yes | No | 31.7 (0.90) | 22.3 (1.88) | 29.2 (0.83) |
| LASSO | No | No | 33.3 (1.18) | 24.9 (2.04) | 31.1 (1.02) |
| LASSO | Yes | No | 32.1 (0.92) | 23.5 (1.90) | 29.8 (0.84) |
| Economic Reasoning | No | Yes | 32.6 (1.15) | 34.6 (2.36) | 33.2 (1.05) |
| Economic Reasoning | Yes | Yes | 40.2 (1.11) | 32.8 (2.24) | 38.3 (1.01) |
| LASSO | No | Yes | 43.4 (1.27) | 32.6 (2.32) | 40.5 (1.12) |
| LASSO | Yes | Yes | 41.9 (1.12) | 31.0 (2.16) | 39.0 (1.00) |

**Table 13** Poverty headcount ratios for the total, urban respectively rural population of India in 2004/05 based on imputations out of CES 2011/12 type 1 into CES 2004/05. The consumption measure underlying this is the MRP measure, therefore, the MRP poverty lines for 2011/12 introduced by the Tendulkar committee were used. We tested different models, based on economic reasoning and LASSO, as well as with and without assets and SFEs (state-fixed

effects). The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

Results are reasonably satisfactory when imputing backwards – especially when SFEs are included in the model specifications. Three models lead to reasonably close values for the rural population, all of them include some kind of asset ownership variable. In contrast, for the urban population, models without asset ownership lead to results that are much closer to the true value of 25.5% than those including assets.

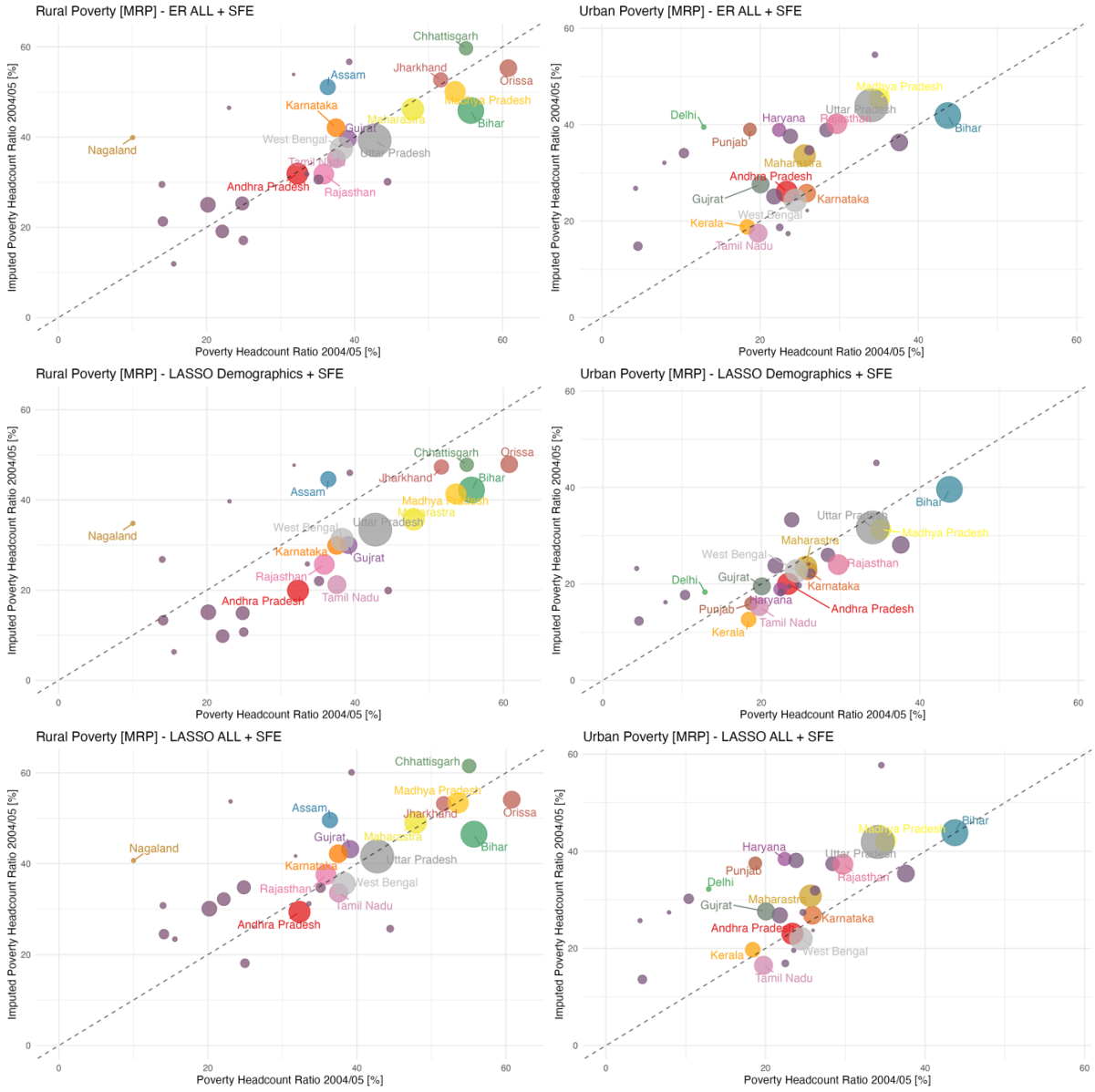



**Figure 18** Bubble plot giving poverty rates at the state level (rural – left, urban – right). The x-axis gives the official values for 2004/05, while the y-axis depicts estimates for the same year. Poverty status is determined using the imputed MRP consumption measure and the Tendulkar poverty lines. Only the most populous states are highlighted. Bubble size corresponds to population size. The models are chosen using LASSO or economic reasoning (ER). CES models either include only demographics or all (i.e. also assets), further state-fixed effects (SFE) were included. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

When comparing the different models, we see that none of them work equally well in both urban and rural areas. Many states have clearly different poverty estimates based on these

rounds of imputation than their actual poverty rate. However, both, the economically reasoned model including assets, as well as the LASSO including assets (top and bottom plot on the right) for the rural population are relatively close for most states. The urban state-level estimates are more scattered. For the model depicted in the middle, the opposite holds: urban seems relatively closely matched while rural is clearly underestimated.

*EUS 2011/12 into CES 2022/23*

While we do not regard these amongst our key findings, we also impute, for completeness reasons, out of EUS 2011/12 into the HCES 2022/23. **Appendix *Table 60*** & **Appendix *Table 61*** report the beta-models. The explanatory power of these models is comparable to that reached in the previous attempts. However, note that the overlap in variables between EUS and HCES 2022/23 is limited to only basic demographics: neither wages nor asset ownership predictors can be included in the model specifications. Due to the limited variable overlap between the two surveys, we only apply the LASSO-model that has also been used when imputing within 2011/12. Now, however, we bridge 12 years into the HCES 2022/23.

| Model | Rural | Urban | Total |
|---|---|---|---|
| LASSO for CES + SFE [MRP] | 25.7 (0.93) | 12.9 (0.73) | 21.9 (0.69) |
| LASSO for CES + SFE [MMRP] | 30.3 (0.98) | 22.7 (0.98) | 28.1 (0.75) |

**Table 14** Poverty headcount ratios for the total, urban respectively rural population of India in 2022/*23* based on sectorwide imputations out of EUS 2011/12 *into* HCES 2022/23. The MRP-corresponding respectively the MMRP-corresponding poverty lines for the EUS measure are used to determine poverty status. Imputation models are based on LASSO including state-fixed effects (SFE). The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. *Standard errors are given in parentheses.*

*CES 2011/12 into PLFS 2017/2018-2022/23*

Again, for completeness, we present results that are based on an imputation out of CES 2011/12 Type 1 into the different rounds of PLFS. Where the overlap between EUS and CES is particularly limited, the CES and PLFS have more overlap. For example, they both include such variables as 'main source of energy for cooking'. However, again, no asset or detailed labour market variables are similarly covered in both surveys.

It is thus quite striking to see that the sector-wide poverty numbers of this approach – overall – seem to align quite closely with the results of its EUS-PLFS exercise reported above. Here we can directly apply the Tendulkar poverty lines and do not need to rely on the detour of the EUS. Because of the limited overlap in variables, we show only one model to probe the robustness of our approach, see **Table *15***. As before, the poverty rate has fallen between 2011/12 and 2017/18 and further until 2020/21 before rising slightly thereafter. Again, however, the key takeaway is again that poverty has fallen only slightly since 2011/12.

| Model | Sector | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---|---|---|---|---|---|---|---|
| LASSO for PLFS | Rural | 21.7 (0.85) | 21.1 (0.82) | 20.9 (0.82) | 20.1 (0.83) | 21.7 (0.84) | 22.1 (3.17) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LASSO for PLFS | Urban | 14.1 (0.78) | 13.7 (0.79) | 13.0 (0.76) | 13.1 (0.75) | 13.2 (0.73) | 12.5 (0.73) |
| LASSO for PLFS | Total | 19.4 (0.64) | 18.8 (0.62) | 18.5 (0.62) | 18.0 (0.62) | 19.3 (0.63) | 19.3 (2.28) |

**Table 15** Poverty headcount ratios for the total, urban respectively rural population of India between 2017/18 and 2022/23, based on imputations out of CES 2011/12 type 1 into corresponding rounds of PLFS. Tendulkar poverty lines were used for the determination of poverty status. Imputation models are based on LASSO including only variables that are common between CES and PLFS as well as state-fixed effects (SFE). The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

## 6. Conclusion

In this paper we have engaged with the ongoing debate surrounding recent progress in poverty reduction in India. The debate stems from the fact that since 2011/12 there has not been an official estimate of poverty that can be readily compared to estimates for 2011/12 and previous decades. Various factors account for this absence. First, the flagship CES household survey that has historically underpinned poverty estimation in India was completed in 2017/18 but the unit record data from this survey were not publicly released. Concerns with data quality were cited. Then, second, in 2022/23 (and shortly thereafter again in 2023/24), a new round of the CES was collected and the unit record data from this survey were released. However, due to a number of far-reaching changes to the underlying consumption definition, as well to manner in which the data were collected, concerns have been raised as to the comparability of these consumption data with those from 2011/12. Finally, since 2011/12 there has been no officially endorsed poverty line that updates the 2011/12 line with respect to inflation and spatial price variation. The combination of all these factors results in ample space for debate as to the extent of poverty decline during the past decade.

In previous work we have shown that estimating poverty in 2022/23 on the basis of India's officially endorsed methodology, but ignoring the concerns about comparability, results in an estimated decline in poverty at the all-India level from 22% in 2011/12 to around 10% in 2022/23 (Himanshu, Lanjouw and Schirmer, 2025a). This estimate clearly counters widely asserted claims that poverty has been "eliminated". However, this estimate is itself contentious as it does not address multiple, and serious, non-comparability concerns. Himanshu, Lanjouw and Schirmer (2025b) examine the evolution of well-established correlates and proxies of poverty, in an attempt to present a bigger picture of poverty decline. This analysis also suggests that poverty decline has slowed when compared to the pace that was recorded during the first decade of the 21st century.

In this study we have attempted to explicitly confront the problem of non-comparability of the consumption aggregates between 2011/12 and 2022/23. We employ survey-to-survey imputation methods. The approach involves predicting consumption into the data for 2022/23 on the basis of consumption models calibrated using data from 2011/12. Survey-to-survey imputation involves estimating models for which there is no one demonstrably "correct" specification. In addition, when tracking changes in poverty over time, the approach is predicated on the onerous assumption that parameter estimates in the model do not change over time, while the regressor values themselves may well change. The upshot of these considerations is that we are loathe to produce a single, "preferred", estimate of poverty for 2022/23 that can be compared to the official estimate in 2011/12. Rather, we produce a range of estimates involving different data configurations and specifications. While we cannot point to a single poverty estimate for 2022/23 we show that all our estimates point to considerably slower poverty decline than what is commonly asserted. In that respect, our findings are very

much in line with the qualitative conclusions of Himanshu, Lanjouw and Schirmer (2025b). Indeed, our estimates suggest that the average annual rate of poverty reduction since 2011/12 is less than half as rapid as what was achieved between 2004/5 and 2011/12.

Our survey-to-survey based estimates derive from analysis of 10 datasets. We employ two broad approaches. In the first, we "train" our consumption models on the 2011/12 CES survey and then impute into the 2022/23 CES. We estimate models at the all-India urban/rural sector level, and also separately at the state sector level. We specify our models on the basis of an ad-hoc "economic intuition" approach as well as on the basis of LASSO selection methods. We underscore the importance of capturing state-level heterogeneity by including state fixed-effects in the all-India sector level models. We produce estimates of poverty at both the state level as well as the all-India and aggregate sector levels. Our findings point to an overall decline in poverty between 2011/12 and 2022/23 in the range of 10-12 percentage points [in MRP terms]. This is roughly half the rate of decline observed between 2004/5 and 2011/12 and, given overall population growth, points to a negligible decline in the number of poor in India.

This CES2011/12 – CES2022/3 exercise is repeated using two definitions of consumption available in the CES 2011/12 – one based on the Mixed Reference Period (MRP) and one based on the Modified Mixed Reference Period (MMRP). Poverty estimation based on the latter definition is best undertaken using poverty lines proposed by the Rangarajan Committee. These have not been officially endorsed, but are judged to be more appropriate when the MMRP definition of consumption is used. Our imputation exercise generates a similarly sluggish decline in estimated poverty when pursuing this route.

In our second approach we "train" our models using the Employment and Unemployment (EUS) survey of 2011/12 and predict poverty into the six Periodic Labour Force Surveys (PLFS) fielded by the NSSO in each year between 2017/18 and 2022/23. Proceeding via this route involves some additional adjustments. First, we demonstrate that the 2011/12 CES and EUS represent the same underlying population and collect a common range of household characteristics that are defined in the same way. However, the EUS does not collect the same consumption variable as the CES. We show that the more abbreviated consumption variable in the EUS is somewhat lower, but otherwise closely mirrors the distribution of the CES consumption measure. We thus re-define the CES-based Tendulkar Committee poverty lines in such a way that they generate the same state/sector poverty rates when applied to the EUS consumption aggregate. We then impute the EUS consumption aggregate into the PLFS surveys and estimate poverty in those surveys based on our re-defined Tendulkar Committee poverty lines.

Imputing from the EUS to the PLFS surveys is appealing because it allows us to specify consumption models that include a variety of labour market variables as regressors. Such variables are likely to be responsive to changes in broader economic conditions and can therefore be expected to do well in tracking poverty from year to year. The CES-based imputations in our first approach do not allow for the inclusion of such labour market variables in the models. A second attraction of the EUS-PLFS imputations is that they allow for the estimation of poverty trends in the interval between 2011/12 and 2022/23, as opposed to just these two years as end-points.

Our EUS-PLFS based analysis finds that poverty decline has been even more sluggish than what was observed with the CES imputations. Based on this approach poverty in 2022/23 is estimated to be only some 4-6 percentage points lower than was observed in 2011/12.

Interestingly, the imputations suggest that most of the poverty decline occurred between 2011/12 and 2017/18, but that this slowed sharply following the COVID-19 pandemic.

We report state-level trends alongside aggregate trends. We point to considerable heterogeneity across states in achieving poverty reduction. An interesting finding, consistent across our approaches, is that the incidence of poverty has fallen markedly in Uttar Pradesh, India's most populous state. Other traditionally poor northern states like Bihar and Jharkhand have recorded less progress. We note also that poverty decline in several southern states (Andhra Pradesh and Maharashtra) has also been modest. Overall, urban poverty decline has been less sharp than what is estimated for rural areas.

We undertake a variety of robustness checks to probe the assumptions that underpin the survey-to-survey imputation approach. As noted above, a pivotal assumption is that "returns" to regressors are stable over time, while the regressors themselves may change. This "stability assumption" cannot be tested formally. However, we are able to gauge its appeal by replicating our imputation approach with the unit record data from the 2004/5 and 2011/12 CES surveys. As noted above, the interval between these two surveys as associated with very rapid poverty decline, from 37 per cent to 22 per cent at the all-India level. This can be verified directly from the data, as comparability issues did not plague these two surveys, and the Tendulkar Committee's poverty lines had been expressly developed to permit this comparison.

We find that imputing consumption from the 2004/5 into the 2011/12 survey is able to largely reproduce the decline in poverty observed from the comparison of directly estimated poverty in the two surveys. Similarly, predicting consumption "backwards" from the 2011/12 survey to 2004/5 is also able to broadly recover the same trend. This analysis suggests that the assumption of stable parameter estimates for this interval is not unreasonable. Given that the interval between 2004/5 and 2011/12 was one of rapid growth and significant poverty decline, provides some reassurance that the assumption holds also in the years after 2011/12.

Overall, this analysis provides strong support to the findings reported in our earlier contributions, and are consistent also with a number of other studies that have examined the evolution of poverty in India after 2011/12. Contrary to claims that poverty in India has been largely eliminated, we suggest that poverty decline in India has faltered and has not kept pace with progress achieved during the first decade of the century. Complacency is not warranted and a focus on reducing poverty should remain at the top of the policy agenda.

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# 8. APPENDIX

| Name Survey | CES | CES type 1 | CES type 2 | EUS | PLFS | | | | | | CES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | 2004/05 | 2011/12 | 2011/12 | 2011/12 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2022/23 |
| Households total | 124.642 | 101.655 | 101.637 | 101.714 | 102.113 | 100.260 | 100.480 | 100.344 | 101.526 | 101.399 | 261.746 |
| Households rural | 79.297 | 59.691 | 59.676 | 59.693 | 56.108 | 55.340 | 55.291 | 55.389 | 55.767 | 55.716 | 155.014 |
| Households urban | 45.345 | 41.964 | 41.961 | 42.021 | 46.005 | 44.920 | 45.189 | 44.955 | 45.759 | 45.683 | 106.732 |
| Individuals total | 609.727 | 464.929 | 464.676 | 456.963 | 433.339 | 415.863 | 418.297 | 413.405 | 427.395 | 418.366 | 1.127.039 |
| Individuals rural | 403.202 | 285.774 | 285.738 | 280.734 | 246.809 | 237.929 | 240.231 | 237.899 | 248.567 | 243.278 | 703.178 |
| Individuals urban | 206.525 | 179.155 | 178.938 | 176.229 | 186.530 | 177.934 | 178.066 | 175.506 | 178.828 | 175.088 | 423.861 |

**Appendix Table 16** This table presents the number of rural urban and total households as well as individuals covered in each survey. Note that these numbers refer to the full datasets covering the total, urban respectively rural sector.

| | CES Type 1 | | CES Type 2 | | EUS | |
|---|---|---|---|---|---|---|
| | Rural | Urban | Rural | Urban | Rural | Urban |
| Household size: | | | | | | |
| One or two members | 0.1586 | 0.2375 | 0.1605 | 0.2369 | 0.1661 | 0.2374 |
| Three members | 0.1444 | 0.1599 | 0.1396 | 0.1595 | 0.1507 | 0.165 |
| Four members | 0.2214 | 0.2414 | 0.2262 | 0.2418 | 0.2327 | 0.2487 |
| Five members | 0.1921 | 0.1635 | 0.1969 | 0.164 | 0.1918 | 0.1592 |
| Six+ members | 0.2835 | 0.1977 | 0.2768 | 0.1977 | 0.2587 | 0.1896 |
| Share agegroup in household: | | | | | | |
| Below 14 | 0.3120 | 0.2546 | 0.3073 | 0.2583 | 0.3146 | 0.2598 |
| 14-25 | 0.2112 | 0.2251 | 0.2135 | 0.22 | 0.2066 | 0.2207 |
| 25-34 | 0.1267 | 0.1502 | 0.128 | 0.1532 | 0.1267 | 0.1517 |
| 34-49 | 0.1921 | 0.21 | 0.1944 | 0.2088 | 0.1942 | 0.2087 |
| 49-60 | 0.0955 | 0.0961 | 0.0944 | 0.0958 | 0.0946 | 0.0933 |
| 60+ | 0.0277 | 0.028 | 0.0289 | 0.0282 | 0.0282 | 0.0285 |
| Religion: | | | | | | |
| Hindu | 0.8442 | 0.8042 | 0.8418 | 0.8055 | 0.8419 | 0.8039 |
| Muslim | 0.1103 | 0.1355 | 0.1114 | 0.1347 | 0.112 | 0.1383 |
| Household Type: | | | | | | |
| Self-employed (R: in agriculture) | 0.3441 | 0.3443 | 0.3433 | 0.3466 | 0.3431 | 0.3526 |
| R: Self-employed in not agriculture/ U: Regular wage | 0.1606 | 0.4152 | 0.157 | 0.4099 | 0.1551 | 0.4169 |
| R: Regular wage/ U: Casual labour | 0.0893 | 0.1253 | 0.0885 | 0.1277 | 0.0962 | 0.118 |
| Social Group: | | | | | | |
| Scheduled tribes | 0.1137 | 0.0355 | 0.1144 | 0.0355 | 0.1119 | 0.0352 |
| Scheduled castes | 0.2121 | 0.1418 | 0.2115 | 0.1417 | 0.2094 | 0.1385 |
| Education: | | | | | | |
| Literate formal education | 0.6365 | 0.7941 | 0.6361 | 0.7926 | 0.6308 | 0.7893 |
| Not literate | 0.3582 | 0.2009 | 0.3576 | 0.2025 | 0.3622 | 0.2039 |

**Appendix Table 17** Mean value of some variables for CES type 1 (MRP), CES type 2 (MMRP) and EUS for urban and rural population in 2011/12. As all three surveys are implemented by NSSO using the same sampling frame and questionnaire design, values are statistically the same.

| Rural | EUS 2011/12 | PLFS 2017/18 | PLFS 2018/19 | PLFS 2019/20 | PLFS 2020/21 | PLFS 2021/22 | PLFS 2022/23 |
|---|---|---|---|---|---|---|---|
| Household size: | | | | | | | |
| One or two members | 0.1661 | 0.176 | 0.1869 | 0.184 | 0.1778 | 0.1573 | 0.1531 |
| Three members | 0.1507 | 0.1589 | 0.1637 | 0.1641 | 0.1641 | 0.1472 | 0.1448 |
| Four members | 0.2327 | 0.2473 | 0.2519 | 0.2485 | 0.2584 | 0.2467 | 0.2641 |
| Five members | 0.1918 | 0.195 | 0.1894 | 0.1878 | 0.1907 | 0.2006 | 0.2202 |
| Six+ members | 0.2587 | 0.2227 | 0.2081 | 0.2155 | 0.209 | 0.2481 | 0.2178 |
| Share agegroup in household: | | | | | | | |
| Below 14 | 0.3146 | 0.274 | 0.2696 | 0.2676 | 0.2578 | 0.2669 | 0.2882 |
| 14-25 | 0.2066 | 0.2153 | 0.2122 | 0.2103 | 0.2163 | 0.2075 | 0.1872 |
| 25-34 | 0.1267 | 0.1299 | 0.1292 | 0.1293 | 0.1292 | 0.1331 | 0.1399 |
| 34-49 | 0.1942 | 0.1994 | 0.2025 | 0.2007 | 0.2048 | 0.1993 | 0.2042 |
| 49-60 | 0.0946 | 0.103 | 0.1043 | 0.1095 | 0.109 | 0.1051 | 0.0976 |
| 60+ | 0.0282 | 0.0784 | 0.0822 | 0.0826 | 0.0829 | 0.0882 | 0.0829 |
| Religion: | | | | | | | |
| Hindu | 0.8419 | 0.8379 | 0.8396 | 0.848 | 0.8449 | 0.8465 | 0.7861 |
| Muslim | 0.112 | 0.1061 | 0.1061 | 0.0997 | 0.104 | 0.1078 | 0.1689 |
| Household Type: | | | | | | | |
| Self-employed (R: in agriculture) | 0.3431 | 0.3785 | 0.3664 | 0.3779 | 0.3895 | 0.3726 | 0.3621 |
| R: Self-employed in not agriculture/ U: Regular wage | 0.1551 | 0.1431 | 0.1506 | 0.1547 | 0.1582 | 0.1669 | 0.1733 |
| R: Regular wage/ U: Casual labour | 0.0962 | 0.1274 | 0.1307 | 0.1287 | 0.1295 | 0.1378 | 0.1404 |
| Social Group: | | | | | | | |
| Scheduled tribes | 0.1119 | 0.1165 | 0.1162 | 0.1152 | 0.1185 | 0.1189 | 0.1069 |
| Scheduled castes | 0.2094 | 0.2204 | 0.2249 | 0.2315 | 0.2302 | 0.2218 | 0.2016 |
| Education: | | | | | | | |
| Literate formal education | 0.6308 | 0.6589 | 0.6667 | 0.672 | 0.6784 | 0.6852 | 0.6869 |
| Not literate | 0.3622 | 0.3319 | 0.3239 | 0.3195 | 0.3043 | 0.3075 | 0.3074 |
| Labour market indicators | | | | | | | |
| Daily income from casual labour [Rupees] | 211.27 | 227.21 | 236.24 | 243.96 | 250.89 | 275.84 | 276.67 |
| Daily Income from regular wage [Rupees] | 364.26 | 337.82 | 325.86 | 322.87 | 339.85 | 342.67 | 340.37 |
| Share active in NCO 1-4 | 0.0448 | 0.0502 | 0.0547 | 0.0571 | 0.0569 | 0.0551 | 0.0438 |
| Share active in NCO 5-9 | 0.4696 | 0.3942 | 0.3925 | 0.4202 | 0.4334 | 0.4461 | 0.4948 |
| Share regular worker | 0.0534 | 0.0682 | 0.0699 | 0.0696 | 0.0691 | 0.0764 | 0.077 |
| Share casual worker | 0.1641 | 0.142 | 0.1379 | 0.1391 | 0.139 | 0.1387 | 0.1477 |
| Head of household: | | | | | | | |
| Regular wage worker | 0.0846 | 0.0935 | 0.0947 | 0.0886 | 0.0869 | 0.0933 | 0.0924 |
| Casual worker | 0.3109 | 0.2253 | 0.2232 | 0.2119 | 0.2153 | 0.2116 | 0.2257 |

**Appendix Table 18** Comparison of some demographic as well as labour market variables for EUS as well as all rounds of PLFS from 2017/18-2022/23, only for rural. The daily income from different sources is given in 2011/12 Rupee terms, later years were deflated using CPI.

| Urban | EUS 2011/12 | PLFS 2017/18 | PLFS 2018/19 | PLFS 2019/20 | PLFS 2020/21 | PLFS 2021/22 | PLFS 2022/23 |
|---|---|---|---|---|---|---|---|
| Household size: | | | | | | | |
| One or two members | 0.2374 | 0.2323 | 0.2486 | 0.2557 | 0.2287 | 0.2482 | 0.2744 |
| Three members | 0.165 | 0.1773 | 0.179 | 0.1883 | 0.1891 | 0.1836 | 0.1819 |
| Four members | 0.2487 | 0.2695 | 0.2606 | 0.2567 | 0.2783 | 0.2636 | 0.2563 |
| Five members | 0.1592 | 0.1572 | 0.1604 | 0.1551 | 0.1607 | 0.1593 | 0.1564 |
| Six+ members | 0.1896 | 0.1637 | 0.1515 | 0.1442 | 0.1432 | 0.1453 | 0.1309 |
| Share agegroup in household: | | | | | | | |
| Below 14 | 0.2598 | 0.2295 | 0.2234 | 0.2176 | 0.2099 | 0.2158 | 0.2113 |
| 14-25 | 0.2207 | 0.2127 | 0.2137 | 0.2062 | 0.2053 | 0.199 | 0.2009 |
| 25-34 | 0.1517 | 0.1516 | 0.1493 | 0.1488 | 0.149 | 0.1499 | 0.1496 |
| 34-49 | 0.2087 | 0.2145 | 0.2149 | 0.2195 | 0.2236 | 0.2235 | 0.2229 |
| 49-60 | 0.0933 | 0.1084 | 0.1115 | 0.117 | 0.1206 | 0.1154 | 0.1159 |
| 60+ | 0.0285 | 0.0833 | 0.0872 | 0.0909 | 0.0916 | 0.0964 | 0.0996 |
| Religion: | | | | | | | |
| Hindu | 0.8039 | 0.7999 | 0.7879 | 0.8132 | 0.8155 | 0.8127 | 0.8065 |
| Muslim | 0.1383 | 0.1365 | 0.1476 | 0.13 | 0.1235 | 0.1323 | 0.1353 |
| Household Type: | | | | | | | |
| Self-employed (R: in agriculture) | 0.3526 | 0.3243 | 0.3181 | 0.3075 | 0.3323 | 0.3298 | 0.3186 |
| R: Self-employed in not agriculture/ U: Regular wage | 0.4169 | 0.4138 | 0.4265 | 0.4311 | 0.4245 | 0.4317 | 0.4364 |
| R: Regular wage/ U: Casual labour | 0.118 | 0.1176 | 0.1107 | 0.1145 | 0.1253 | 0.113 | 0.102 |
| Social Group: | | | | | | | |
| Scheduled tribes | 0.0352 | 0.0376 | 0.0326 | 0.0361 | 0.0372 | 0.0398 | 0.0356 |
| Scheduled castes | 0.1385 | 0.1418 | 0.138 | 0.1424 | 0.1508 | 0.1453 | 0.1503 |
| Education: | | | | | | | |
| Literate formal education | 0.7893 | 0.799 | 0.8015 | 0.8068 | 0.8062 | 0.8125 | 0.8202 |
| Not literate | 0.2039 | 0.1927 | 0.1895 | 0.186 | 0.1787 | 0.1815 | 0.1734 |
| Labour market indicators | | | | | | | |
| Daily income from casual labour [Rupees] | 231.03 | 271.13 | 289.59 | 291.19 | 301.51 | 319.59 | 322.65 |
| Daily Income from regular wage [Rupees] | 600.74 | 542.17 | 548.79 | 541.44 | 524.64 | 547.39 | 546.12 |
| Share active in NCO 1-4 | 0.1765 | 0.1633 | 0.172 | 0.1764 | 0.1786 | 0.1796 | 0.1606 |
| Share active in NCO 5-9 | 0.3112 | 0.2789 | 0.2769 | 0.2663 | 0.2826 | 0.2941 | 0.3181 |
| Share regular worker | 0.2376 | 0.2326 | 0.2428 | 0.247 | 0.2395 | 0.2532 | 0.2583 |
| Share casual worker | 0.059 | 0.0607 | 0.0569 | 0.0498 | 0.0588 | 0.0587 | 0.0582 |
| Head of household: | | | | | | | |
| Regular wage worker | 0.3602 | 0.3233 | 0.3282 | 0.3272 | 0.3184 | 0.3231 | 0.3259 |
| Casual worker | 0.1031 | 0.1011 | 0.098 | 0.0828 | 0.0976 | 0.0979 | 0.0926 |

**Appendix Table 19** Comparison of some demographic as well as labour market variables for EUS as well as all rounds of PLFS from 2017/18-2022/23, only for urban. The daily income from different sources is given in 2011/12 Rupee terms, later years were deflated using CPI.

| Variable | CES 2004/05 | CES 2011/12 MRP | CES 2011/12 MMRP | CES 2022/23 MRP | CES 2004/05 | CES 2011/12 MRP | CES 2011/12 MMRP | CES 2022/23 MRP |
|---|---|---|---|---|---|---|---|---|
| **Radio** | 3.042 | 18.706 | 18.663 | 2.243 | 3.641 | 17.571 | 17.418 | 2.447 |
| **TV** | 2.93 | 48.816 | 49.546 | 58.717 | 7.028 | 79.652 | 80.298 | 80.27 |
| **AC** | 0.054 | 6.277 | 5.916 | 17.417 | 0.358 | 24.031 | 23.445 | 38.568 |
| **Refrigerator** | 0.512 | 9.713 | 9.338 | 27.25 | 3.735 | 42.807 | 43.607 | 65.111 |
| **Bicycle** | 5.235 | 57.498 | 57.226 | 51.65 | 4.551 | 39.809 | 38.587 | 30.635 |
| **Motorcycle** | 0.895 | 18.125 | 18.317 | 51.363 | 2.768 | 37.452 | 37.583 | 63.274 |
| **Car** | 0.092 | 2.152 | 1.96 | 3.619 | 0.596 | 8.371 | 7.925 | 13.035 |
| **Washing machine** | - | 2.796 | 2.838 | 9.127 | - | 21.525 | 21.146 | 38.107 |
| **PC** | - | 1.393 | 1.446 | 2.483 | - | 14.602 | 14.861 | 15.902 |
| **Mobile handset** | - | 77.013 | 77.583 | 95.428 | - | 92.122 | 92.134 | 97.931 |

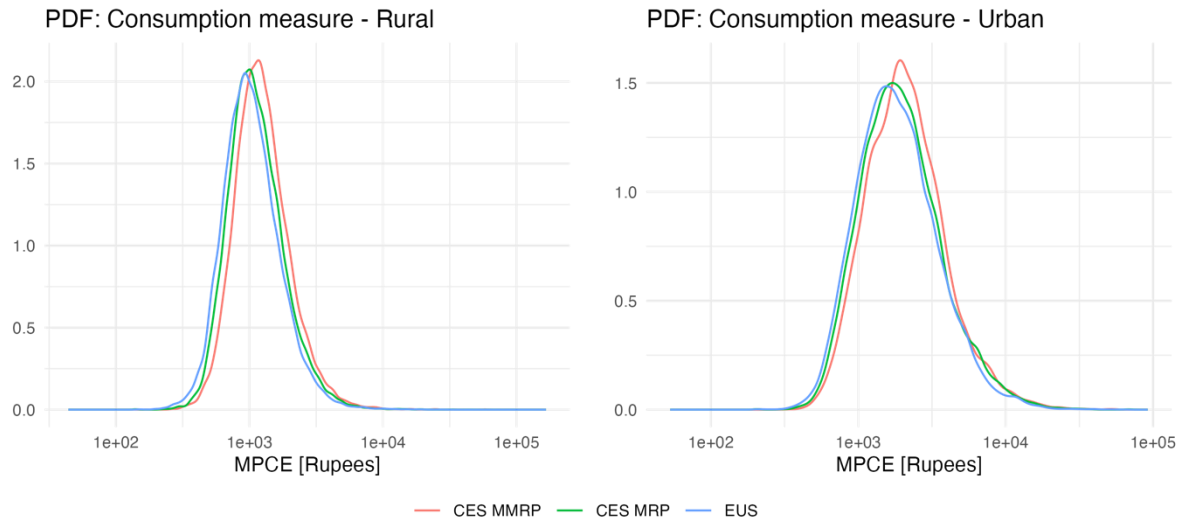
**Appendix Table 20** Share of households that own a certain asset in different CES surveys. Observations are weighted by household-weights from the surveys, values are percentages, e.g. in 2022 in rural areas about 2.45% of households own a radio.

| Rural | Minimal | Q25 | Median | Mean | Q75 | Q99 | Maximal |
|---|---|---|---|---|---|---|---|
| CES MRP | 44 | 809 | 1073 | 1287 | 1496 | 4361 | 94254 |
| CES MMRP | 137 | 904 | 1198 | 1430 | 1638 | 4860 | 166159 |
| EUS | 135 | 745 | 999 | 1192 | 1383 | 4044 | 116125 |

**Appendix Table 21** Overview of min, max, mean, median and quantile values (25%, 75% and 99%) for the available consumption measures in 2011/12 for the rural population. Note that less than 1% in either group have an MPCE of more than 7.500 Rupees. All values are computed by employing weights (surveyweight times household size).

| Urban | Minimal | Q25 | Median | Mean | Q75 | Q99 | Maximal |
|---|---|---|---|---|---|---|---|
| CES MRP | 53 | 1255 | 1866 | 2477 | 2869 | 11359 | 70133 |
| CES MMRP | 306 | 1359 | 2019 | 2629 | 3050 | 11953 | 90899 |
| EUS | 76 | 1182 | 1757 | 2311 | 2712 | 10643 | 92014 |

**Appendix Table 22** Overview of min, max, mean, median and quantile values (25%, 75% and 99%) for the available consumption measures in 2011/12 for the urban population. Note that a bit less than 1% of households in either group have an MPCE of more than 10.000 Rupees. All values are computed by employing weights (surveyweight times household size).




**Appendix Figure 19** Probability density function (PDF) of the available consumption measures for 2011/12 with logged x-axis. This way, we can also present the outliers on the right tail. The surveys' observations are weighted by the respective household size times the corresponding surveyweight.

| | MRP | | | | MMRP | | | |
|---|---|---|---|---|---|---|---|---|
| | Rural | | Urban | | Rural | | Urban | |
| State | CES | EUS | CES | EUS | CES | EUS | CES | EUS |
| Andhra Pradesh | 860 | 772.8 | 1009 | 1196.3 | 1032 | 798.3 | 1371 | 960.8 |
| Arunachal Pradesh | 930 | 855 | 1060 | 1211.6 | 1151 | 857.3 | 1483 | 967.3 |
| Assam | 828 | 822 | 1008 | 1244.5 | 1007 | 880.9 | 1420 | 985.3 |
| Bihar | 778 | 729.5 | 923 | 1112.6 | 971 | 767.4 | 1229 | 895.8 |
| Chhattisgarh | 738 | 700.1 | 849 | 1057.8 | 912 | 728 | 1230 | 792 |
| Delhi | 1145 | 1209 | 1134 | 1321.2 | 1492 | 1209 | 1538 | 1144.4 |
| Goa | 1090 | 1024.1 | 1134 | 1261.5 | 1201 | 779.3 | 1470 | 980.7 |
| Gujrat | 932 | 788.1 | 1152 | 1390.1 | 1103 | 906.6 | 1507 | 1091 |
| Haryana | 1015 | 914.4 | 1169 | 1341.1 | 1128 | 902.5 | 1528 | 1184.9 |
| Himachal Pradesh | 913 | 780.3 | 1064 | 1066.1 | 1067 | 835 | 1412 | 844.6 |
| Jammu & Kashmir | 891 | 778.6 | 988 | 1215.2 | 1044 | 791 | 1403 | 930.4 |
| Jharkhand | 748 | 746.9 | 974 | 1081 | 904 | 783.3 | 1272 | 988.1 |
| Karnataka | 902 | 847.5 | 1089 | 1254.4 | 975 | 814.3 | 1373 | 1043.7 |
| Kerala | 1018 | 874.1 | 987 | 1156.6 | 1054 | 822.1 | 1354 | 863.8 |
| Ladakh | 891 | 710 | 988 | 1080 | 1044 | 649.9 | 1403 | 1080 |
| Madhya Pradesh | 771 | 706.3 | 897 | 1132.8 | 942 | 787.2 | 1340 | 827.1 |
| Maharashtra | 967 | 869.6 | 1126 | 1293.8 | 1078 | 853.3 | 1560 | 1085.8 |
| Manipur | 1118 | 1044.8 | 1170 | 1558.4 | 1185 | 1011.8 | 1562 | 1152.9 |
| Meghalaya | 888 | 887.7 | 1154 | 1307.5 | 1111 | 1011 | 1524 | 1095 |
| Mizoram | 1066 | 1055.6 | 1155 | 1434.3 | 1231 | 1015.3 | 1704 | 1053.4 |
| Nagaland | 1270 | 1243.2 | 1302 | 1587.4 | 1230 | 1104.8 | 1616 | 1207.8 |
| Orissa | 695 | 668.5 | 861 | 1056.7 | 876 | 763 | 1205 | 790.3 |
| Pondicheri | 1301 | 1277.6 | 1309 | 1319.2 | 1130 | 562 | 1382 | 1245.9 |
| Punjab | 1054 | 894.6 | 1155 | 1275.2 | 1127 | 880.9 | 1479 | 1060.7 |
| Rajasthan | 905 | 752.2 | 1002 | 1095.9 | 1036 | 844 | 1406 | 897.9 |
| Sikkim | 930 | 880.3 | 1226 | 1466.5 | 1126 | 965.8 | 1543 | 1121.8 |
| Tamil Nadu | 880 | 770.4 | 937 | 1219.4 | 1082 | 876.5 | 1380 | 924.7 |
| Telangana* | 860 | 827.6 | 1009 | 1234.4 | 1032 | 828.1 | 1371 | 940.9 |
| Tripura | 798 | 803.4 | 920 | 1287.3 | 936 | 844.2 | 1377 | 970.3 |
| Uttar Pradesh | 768 | 694.9 | 941 | 1144.8 | 890 | 751.8 | 1330 | 866.3 |
| Uttaranchal | 880 | 827.3 | 1082 | 1213.1 | 1015 | 838.4 | 1408 | 822.7 |
| West Bengal | 783 | 733.3 | 981 | 1201.4 | 934 | 789.9 | 1373 | 949.7 |

**Appendix Table 23** Overview of poverty lines at the state-sector level for 2011/12, i.e. one value per rural and urban sector in each state. The CES columns contain the official Tendulkar (MRP) poverty lines respectively Rangajaran (MMRP). The EUS poverty lines lead to the same poverty rate in that specific sector and state as their CES counterpart does, e.g. a value of 729.5 Rupees for the EUS consumption measure in rural Bihar leads to the same poverty rate as the 778 Rupee cut-off for the CES MRP measure. Note how these poverty lines are quite close to each other.
*Telangana was created by bifurcation of Andhra Pradesh, therefore, we use the Andhra Pradesh poverty lines for this state as well.

| Poverty lines 2004/05 CES MRP | Rural | Urban |
|---|---|---|
| Andhra Pradesh | 433.4 | 563.2 |
| Arunachal Pradesh | 547.1 | 618.4 |
| Assam | 478 | 600 |
| Bihar | 433.4 | 526.2 |
| Chhattisgarh | 398.9 | 513.7 |
| Delhi | 541.4 | 642.5 |
| Goa | 608.8 | 671.2 |
| Gujrat | 501.6 | 659.2 |
| Haryana | 529.4 | 626.4 |
| Himachal Pradesh | 520.4 | 605.7 |
| Jammu & Kashmir | 522.3 | 602.9 |
| Jharkhand | 404.8 | 531.3 |
| Karnataka | 417.8 | 588.1 |
| Kerala | 537.3 | 584.7 |
| Madhya Pradesh | 408.4 | 532.3 |
| Maharashtra | 484.9 | 631.8 |
| Manipur | 578.1 | 641.1 |
| Meghalaya | 503.3 | 745.7 |
| Mizoram | 639.3 | 699.8 |
| Nagaland | 687.3 | 782.9 |
| Orissa | 407.8 | 497.3 |
| Pondicheri | 385.5 | 506.2 |
| Punjab | 543.5 | 642.5 |
| Rajasthan | 478 | 568.2 |
| Sikkim | 531.5 | 741.7 |
| Tamil Nadu | 441.7 | 559.8 |
| Tripura | 450.5 | 555.8 |
| Uttar Pradesh | 435.1 | 532.1 |
| Uttaranchal | 486.2 | 602.4 |
| West Bengal | 445.4 | 572.5 |
| All India | 446.7 | 578.8 |

**Appendix Table 24** Poverty lines for the 2004/05 MRP measure for the urban and rural population, measured in Rupees. These poverty lines were computed by the Tendulkar committee and refer to the MRP measure in the CES. The advantage of this set of poverty lines is that they are directly comparable to their 2011/12 MRP counterparts. The last row contains the sector-wide poverty lines.

| | Min. | 1st Qu. | Median | Mean | 3rd Qu. | Max. |
|---|---|---|---|---|---|---|
| **Urban** | | | | | | |
| **2017/18** | 193 | 1666.7 | 2500 | 3343.7 | 4000 | 50000 |
| **2018/19** | 150 | 1800 | 2666.7 | 3511 | 4166.7 | 100000 |
| **2019/20** | 2.5 | 2000 | 2954.6 | 3702.8 | 4487.5 | 105000 |
| **2020/21** | 227.8 | 2000 | 2886 | 3699.7 | 4375 | 1671290 |
| **2021/22** | 321.4 | 2185.3 | 3208.5 | 4034 | 4890 | 45833 |
| **2022/23** | 0 | 2419.4 | 3522.3 | 4437.6 | 5320.8 | 58792 |
| **Rural** | | | | | | |
| **2017/18** | 150 | 1062.5 | 1500 | 1820.5 | 2142.9 | 35000 |
| **2018/19** | 120 | 1200 | 1625 | 1933.2 | 2333.3 | 35000 |
| **2019/20** | 0 | 1250 | 1725 | 2051.6 | 2484.5 | 100000 |
| **2020/21** | 228.7 | 1458.3 | 1972.2 | 2276.7 | 2685.5 | 101941.7 |
| **2021/22** | 137.5 | 1561.9 | 2109.5 | 2445.6 | 2902.1 | 55455 |
| **2022/23** | 283.4 | 1730.6 | 2316.7 | 2708.5 | 3205 | 28083 |

**Appendix Table 25** Summary table of unweighted nominal MPCE measure from different years of PLFS. Values are given in Rupee terms of the year they were surveyed in, i.e. no effort was done to inflate or deflate values to be comparable.

**Beta-models CES Type 1**

**CES type 1 Rural 2011/12 - Economic Reasoning incl. assets**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE MRP | |
| | (1) | (2) |
| HH Type: Self-employed Non-Agriculture | -0.043*** | -0.030*** |
| | (0.005) | (0.005) |
| HH Type: Regular wage | 0.078*** | 0.091*** |
| | (0.006) | (0.006) |
| HH Type: Casual labour Agriculture | -0.135*** | -0.135*** |
| | (0.005) | (0.005) |
| HH Type: Casual labour Non-Agriculture | -0.083*** | -0.050*** |
| | (0.005) | (0.005) |
| Regular salary present | -0.048*** | 0.006 |
| | (0.004) | (0.005) |
| Posesses Rationcard | -0.186*** | -0.236*** |
| | (0.006) | (0.006) |
| Social group: Scheduled Tribes | -0.090*** | -0.089*** |
| | (0.005) | (0.005) |
| Social group: Scheduled Castes | -0.050*** | -0.048*** |
| | (0.004) | (0.004) |
| Mean Age | 0.003*** | 0.004*** |
| | (0.0002) | (0.0002) |
| Female has highest education | 0.011*** | 0.008** |
| | (0.003) | (0.003) |
| Head of household male | 0.028*** | 0.020*** |
| | (0.005) | (0.006) |
| Religion: Hindu | -0.054*** | -0.193*** |
| | (0.008) | (0.007) |
| Religion: Islam | -0.030*** | -0.173*** |
| | (0.009) | (0.009) |
| Cooking energy: Firewood | -0.032*** | -0.010 |
| | (0.006) | (0.006) |

| | | |
|---|---|---|
| Cooking energy: LPG | 0.179*** | 0.231*** |
| | (0.007) | (0.007) |
| Cooking energy: Dung cake | 0.025*** | 0.051*** |
| | (0.007) | (0.007) |
| Cooking energy: No arrangement | 0.274*** | 0.352*** |
| | (0.032) | (0.034) |
| Lighting energy: Kerosene | -0.068*** | -0.110*** |
| | (0.004) | (0.004) |
| Lighting energy: Gas | 0.092* | 0.197*** |
| | (0.049) | (0.052) |
| Share 14-25 | 0.146*** | 0.160*** |
| | (0.008) | (0.008) |
| Share 25-34 | 0.191*** | 0.194*** |
| | (0.013) | (0.014) |
| Share 34-49 | 0.171*** | 0.172*** |
| | (0.011) | (0.012) |
| Share 49-60 | 0.120*** | 0.104*** |
| | (0.011) | (0.012) |
| Share not literate | -0.179*** | -0.159*** |
| | (0.006) | (0.006) |
| Share males | 0.047*** | 0.052*** |
| | (0.009) | (0.010) |
| Share Grandchildren | -0.062*** | -0.046*** |
| | (0.011) | (0.011) |
| HH size: 1 | 0.550*** | 0.538*** |
| | (0.016) | (0.017) |
| HH size: 2 | 0.411*** | 0.398*** |
| | (0.008) | (0.009) |
| HH size: 3 | 0.317*** | 0.302*** |
| | (0.006) | (0.006) |
| HH size: 4 | 0.208*** | 0.204*** |
| | (0.004) | (0.005) |
| HH size: 5 | 0.114*** | 0.104*** |
| | (0.004) | (0.004) |
| Log land possessed (m2) | 0.026*** | 0.022*** |
| | (0.001) | (0.001) |
| Owns land | -0.083*** | -0.080*** |
| | (0.008) | (0.009) |

| | | |
|---|---|---|
| Owns bicycle | 0.023*** | -0.046*** |
| | (0.003) | (0.003) |
| Owns TV | 0.168*** | 0.202*** |
| | (0.004) | (0.004) |
| Owns PC | 0.398*** | 0.463*** |
| | (0.012) | (0.013) |
| Constant | 6.877*** | 6.890*** |
| | (0.018) | (0.016) |
| State-fixed effects | Yes | No |
| Observations | 58,772 | 58,772 |
| $R^2$ | 0.525 | 0.457 |
| Adjusted $R^2$ | 0.525 | 0.457 |
| Residual Std. Error | 38.722 (df = 58708) | 41.410 (df = 58735) |
| F Statistic | 1,031.776*** (df = 63; 58708) | 1,373.203*** (df = 36; 58735) |
| *Note:* | | *p**p***p<0.01 |

**Appendix Table 26** Beta-models for imputations out of CES 2011/12 Type 1 Rural.

**CES type 1 Urban 2011/12 - Economic Reasoning incl. assets**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE MRP | |
| | (1) | (2) |
| HH Type: Self-employed | -0.071*** | -0.065*** |
| | (0.009) | (0.009) |
| HH Type: Regular wage | 0.005 | 0.021** |
| | (0.009) | (0.009) |
| HH Type: Casual labour | -0.140*** | -0.121*** |
| | (0.010) | (0.011) |
| Posesses Rationcard | -0.043*** | -0.010** |
| | (0.005) | (0.005) |
| Social group: Scheduled Tribes | -0.134*** | -0.151*** |
| | (0.012) | (0.011) |
| Social group: Scheduled Castes | -0.131*** | -0.137*** |
| | (0.006) | (0.006) |
| Social group: Other backward classes | -0.082*** | -0.094*** |
| | (0.005) | (0.005) |

| | | |
|---|---|---|
| Female has highest education | 0.028*** | 0.025*** |
| | (0.004) | (0.004) |
| Children's generation has highest education | 0.048*** | 0.037*** |
| | (0.004) | (0.005) |
| Grandchildren's generation has highest education | -0.045*** | -0.033*** |
| | (0.012) | (0.012) |
| Non-relatives/ servants present | 0.296*** | 0.304*** |
| | (0.020) | (0.021) |
| Religion: Hindu | -0.044*** | -0.063*** |
| | (0.009) | (0.009) |
| Religion: Islam | -0.095*** | -0.111*** |
| | (0.010) | (0.010) |
| Rents Dwelling | 0.257*** | 0.263*** |
| | (0.007) | (0.007) |
| Cooking energy: Coal | -0.287*** | -0.359*** |
| | (0.019) | (0.018) |
| Cooking energy: Firewood | -0.241*** | -0.295*** |
| | (0.014) | (0.014) |
| Cooking energy: LPG | -0.102*** | -0.135*** |
| | (0.013) | (0.013) |
| Cooking energy: Dung cake | -0.098*** | -0.195*** |
| | (0.020) | (0.020) |
| Cooking energy: Charcoal | -0.275*** | -0.366*** |
| | (0.083) | (0.085) |
| Cooking energy: Kerosene | -0.178*** | -0.174*** |
| | (0.016) | (0.016) |
| Cooking energy: Electricity | -0.150*** | -0.213*** |
| | (0.036) | (0.037) |
| Lighting energy: Candle | 0.124** | 0.132*** |
| | (0.049) | (0.050) |
| Lighting energy: Electricity | 0.070*** | 0.108*** |
| | (0.012) | (0.012) |
| Share <14 | -0.229*** | -0.233*** |
| | (0.011) | (0.011) |
| Share not literate | -0.116** | -0.149*** |
| | (0.051) | (0.052) |

| | | |
|---|---|---|
| Share literate, formally educated | 0.112** | 0.087* |
| | (0.051) | (0.052) |
| Share males | 0.069*** | 0.056*** |
| | (0.012) | (0.012) |
| Share married | 0.078*** | 0.099*** |
| | (0.010) | (0.010) |
| HH size: 1 | 0.776*** | 0.799*** |
| | (0.016) | (0.016) |
| HH size: 2 | 0.481*** | 0.490*** |
| | (0.011) | (0.011) |
| HH size: 3 | 0.402*** | 0.412*** |
| | (0.007) | (0.007) |
| HH size: 4 | 0.268*** | 0.281*** |
| | (0.006) | (0.006) |
| HH size: 5 | 0.132*** | 0.139*** |
| | (0.006) | (0.006) |
| Log land possessed (m2) | 0.014*** | 0.007*** |
| | (0.001) | (0.001) |
| Owns land | 0.080*** | 0.076*** |
| | (0.007) | (0.008) |
| Owns TV | 0.140*** | 0.146*** |
| | (0.007) | (0.007) |
| Owns Refrigerator | 0.344*** | 0.355*** |
| | (0.005) | (0.005) |
| Owns Car | 0.559*** | 0.564*** |
| | (0.007) | (0.007) |
| Constant | 7.065*** | 7.047*** |
| | (0.056) | (0.056) |
| State-fixed effects | Yes | No |
| Observations | 40,343 | 40,343 |
| $R^2$ | 0.634 | 0.615 |
| Adjusted $R^2$ | 0.633 | 0.615 |
| Residual Std. Error | 34.026 (df = 40277) | 34.860 (df = 40304) |
| F Statistic | 1,071.913*** (df = 65; 40277) | 1,696.013*** (df = 38; 40304) |
| *Note:* | | *p **p ***p<0.01 |

**Appendix Table 27** Beta-models for imputations out of CES 2011/12 Type 1 Urban.

**Beta-Models CES Type 2**

**CES type 2 Rural 2011/12 - Economic Reasoning incl. assets**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE MRP | |
| | (1) | (2) |
| HH Type: Self-employed Non-Agriculture | -0.026*** | -0.014*** |
| | (0.005) | (0.005) |
| HH Type: Regular wage | 0.081*** | 0.095*** |
| | (0.006) | (0.006) |
| HH Type: Casual labour Agriculture | -0.111*** | -0.105*** |
| | (0.005) | (0.005) |
| HH Type: Casual labour Non-Agriculture | -0.074*** | -0.041*** |
| | (0.005) | (0.005) |
| Posesses Rationcard | -0.030*** | 0.022*** |
| | (0.005) | (0.005) |
| Social group: Scheduled Tribes | -0.166*** | -0.215*** |
| | (0.006) | (0.006) |
| Social group: Scheduled Castes | -0.087*** | -0.094*** |
| | (0.005) | (0.005) |
| Social group: Other backward classes | -0.045*** | -0.046*** |
| | (0.004) | (0.004) |
| Mean Age | 0.003*** | 0.003*** |
| | (0.0002) | (0.0002) |
| Female has highest education | 0.014*** | 0.015*** |
| | (0.003) | (0.003) |
| Head of household male | 0.050*** | 0.039*** |
| | (0.006) | (0.006) |
| Religion: Hindu | -0.070*** | -0.204*** |
| | (0.009) | (0.007) |
| Religion: Islam | -0.024** | -0.160*** |
| | (0.010) | (0.009) |
| Cooking energy: Firewood | -0.026*** | -0.008 |
| | (0.006) | (0.006) |
| Cooking energy: LPG | 0.187*** | 0.234*** |
| | (0.007) | (0.008) |

| | | |
|---|---|---|
| Cooking energy: Dung cake | 0.038*** | 0.048*** |
| | (0.007) | (0.007) |
| Cooking energy: No arrangement | 0.108*** | 0.178*** |
| | (0.032) | (0.034) |
| Lighting energy: Kerosene | -0.025 | -0.080*** |
| | (0.018) | (0.019) |
| Lighting energy: Electricity | 0.053*** | 0.035* |
| | (0.018) | (0.019) |
| Share 14-25 | 0.142*** | 0.159*** |
| | (0.008) | (0.009) |
| Share 25-34 | 0.206*** | 0.205*** |
| | (0.013) | (0.014) |
| Share 34-49 | 0.195*** | 0.200*** |
| | (0.011) | (0.012) |
| Share 49-60 | 0.122*** | 0.114*** |
| | (0.012) | (0.012) |
| Share not literate | -0.171*** | -0.156*** |
| | (0.006) | (0.006) |
| Share males | 0.053*** | 0.064*** |
| | (0.010) | (0.010) |
| Share Grandchildren | -0.019* | 0.005 |
| | (0.011) | (0.011) |
| HH size: 1 | 0.628*** | 0.619*** |
| | (0.017) | (0.018) |
| HH size: 2 | 0.414*** | 0.408*** |
| | (0.008) | (0.009) |
| HH size: 3 | 0.299*** | 0.288*** |
| | (0.006) | (0.006) |
| HH size: 4 | 0.200*** | 0.200*** |
| | (0.004) | (0.005) |
| HH size: 5 | 0.106*** | 0.104*** |
| | (0.004) | (0.004) |
| Log land possessed (m2) | 0.021*** | 0.018*** |
| | (0.001) | (0.001) |
| Owns land | -0.099*** | -0.101*** |
| | (0.008) | (0.009) |
| Owns bicycle | 0.017*** | -0.056*** |
| | (0.003) | (0.003) |

| | | |
|---|---|---|
| Owns TV | 0.154*** | 0.191*** |
| | (0.004) | (0.004) |
| Owns PC | 0.350*** | 0.410*** |
| | (0.012) | (0.013) |
| Constant | 6.946*** | 6.962*** |
| | (0.026) | (0.025) |
| State-fixed effects | Yes | No |
| Observations | 58,760 | 58,760 |
| $R^2$ | 0.498 | 0.432 |
| Adjusted $R^2$ | 0.497 | 0.431 |
| Residual Std. Error | 39.546 (df = 58696) | 42.072 (df = 58723) |
| F Statistic | 924.358*** (df = 63; 58696) | 1,238.435*** (df = 36; 58723) |
| *Note:* | | *p **p ***p<0.01 |

**Appendix Table 28** Beta-model for imputation out of CES Type 2 Rural: Economic Reasoning including assets.

**CES type 2 Urban 2011/12 - Economic Reasoning incl. assets**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE MRP | |
| | (1) | (2) |
| HH Type: Self-employed | -0.026*** | -0.017* |
| | (0.009) | (0.009) |
| HH Type: Regular wage | 0.033*** | 0.050*** |
| | (0.009) | (0.009) |
| HH Type: Casual labour | -0.116*** | -0.097*** |
| | (0.010) | (0.010) |
| Posesses Rationcard | -0.050*** | -0.018*** |
| | (0.005) | (0.005) |
| Social group: Scheduled Tribes | -0.112*** | -0.125*** |
| | (0.012) | (0.011) |
| Social group: Scheduled Castes | -0.112*** | -0.114*** |
| | (0.006) | (0.006) |
| Social group: Other backward classes | -0.081*** | -0.091*** |
| | (0.005) | (0.005) |
| Female has highest education | 0.039*** | 0.039*** |
| | (0.004) | (0.004) |

| | | |
|---|---|---|
| Children's generation has highest education | 0.068*** | 0.062*** |
| | (0.004) | (0.004) |
| Grandchildren's generation has highest education | -0.037*** | -0.032*** |
| | (0.012) | (0.012) |
| Non-relatives/ servants present | 0.201*** | 0.206*** |
| | (0.019) | (0.020) |
| Religion: Hindu | -0.069*** | -0.089*** |
| | (0.009) | (0.009) |
| Religion: Islam | -0.099*** | -0.109*** |
| | (0.010) | (0.010) |
| Rents Dwelling | 0.216*** | 0.227*** |
| | (0.007) | (0.007) |
| Cooking energy: Coal | -0.299*** | -0.355*** |
| | (0.019) | (0.018) |
| Cooking energy: Firewood | -0.263*** | -0.295*** |
| | (0.015) | (0.015) |
| Cooking energy: LPG | -0.106*** | -0.119*** |
| | (0.014) | (0.014) |
| Cooking energy: Dung cake | -0.204*** | -0.272*** |
| | (0.021) | (0.021) |
| Cooking energy: Charcoal | -0.275*** | -0.383*** |
| | (0.076) | (0.077) |
| Cooking energy: Kerosene | -0.187*** | -0.173*** |
| | (0.016) | (0.016) |
| Cooking energy: Electricity | -0.135*** | -0.186*** |
| | (0.041) | (0.042) |
| Lighting energy: Candle | -0.008 | 0.042 |
| | (0.038) | (0.039) |
| Lighting energy: Electricity | 0.033*** | 0.068*** |
| | (0.012) | (0.012) |
| Share <14 | -0.232*** | -0.241*** |
| | (0.011) | (0.011) |
| Share not literate | -0.117** | -0.119** |
| | (0.053) | (0.054) |
| Share literate, formally educated | 0.094* | 0.105* |
| | (0.052) | (0.054) |

| | | |
|---|---|---|
| Share males | 0.042*** | 0.030** |
| | (0.012) | (0.012) |
| Share married | 0.046*** | 0.062*** |
| | (0.010) | (0.010) |
| HH size: 1 | 0.811*** | 0.837*** |
| | (0.016) | (0.016) |
| HH size: 2 | 0.531*** | 0.541*** |
| | (0.011) | (0.011) |
| HH size: 3 | 0.401*** | 0.411*** |
| | (0.007) | (0.007) |
| HH size: 4 | 0.266*** | 0.279*** |
| | (0.006) | (0.006) |
| HH size: 5 | 0.133*** | 0.137*** |
| | (0.005) | (0.006) |
| Log land possessed (m2) | 0.010*** | 0.003*** |
| | (0.001) | (0.001) |
| Owns land | 0.041*** | 0.040*** |
| | (0.008) | (0.008) |
| Owns TV | 0.135*** | 0.136*** |
| | (0.007) | (0.007) |
| Owns Refrigerator | 0.335*** | 0.347*** |
| | (0.005) | (0.005) |
| Owns Car | 0.516*** | 0.519*** |
| | (0.007) | (0.007) |
| Constant | 7.267*** | 7.182*** |
| | (0.058) | (0.059) |
| State-fixed effects | Yes | No |
| Observations | 40,339 | 40,339 |
| $R^2$ | 0.620 | 0.601 |
| Adjusted $R^2$ | 0.620 | 0.600 |
| Residual Std. Error | 33.746 (df = 40273) | 34.598 (df = 40300) |
| F Statistic | 1,012.626*** (df = 65; 40273) | 1,595.618*** (df = 38; 40300) |
| *Note:* | | *p**p***p<0.01 |

**Appendix Table 29** Beta-model for imputation out of CES Type 2 Urban: Economic Reasoning including assets.

**CES type 2 Rural 2011/12 - Lasso excl. assets**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE MRP | |
| | (1) | (2) |
| HH Type: Regular wage | 0.105*** | 0.118*** |
| | (0.006) | (0.006) |
| HH Type: Casual in Agriculture | -0.109*** | -0.106*** |
| | (0.004) | (0.005) |
| HH Type: Casual Non-Agriculture | -0.071*** | -0.040*** |
| | (0.005) | (0.005) |
| Social group: Scheduled Tribes | -0.141*** | -0.185*** |
| | (0.005) | (0.005) |
| Social group: Scheduled Castes | -0.046*** | -0.037*** |
| | (0.004) | (0.004) |
| Social group: Other | 0.041*** | 0.040*** |
| | (0.004) | (0.004) |
| Religion: Hindu | -0.047*** | -0.087*** |
| | (0.005) | (0.005) |
| Religion: Christianity | 0.023* | 0.078*** |
| | (0.012) | (0.012) |
| Dwelling rented | 0.184*** | 0.210*** |
| | (0.010) | (0.010) |
| Cooking energy: Firewood | -0.045*** | -0.031*** |
| | (0.004) | (0.004) |
| Cooking energy: LPG | 0.210*** | 0.279*** |
| | (0.006) | (0.006) |
| Cooking energy: Gobar gas | 0.264*** | 0.293*** |
| | (0.031) | (0.033) |
| Cooking energy: No arrangement | 0.102*** | 0.149*** |
| | (0.032) | (0.034) |
| Lighting energy: Kerosene | -0.065*** | -0.155*** |
| | (0.019) | (0.020) |
| Lighting energy: electricity | 0.076*** | 0.061*** |
| | (0.018) | (0.020) |
| Share <14 | -0.155*** | -0.180*** |
| | (0.010) | (0.010) |
| Share 34-49 | 0.046*** | 0.044*** |

| | | |
|---|---|---|
| | (0.008) | (0.009) |
| Share 25-60 | 0.034*** | 0.074*** |
| | (0.013) | (0.014) |
| Share female <14 | -0.052*** | -0.063*** |
| | (0.012) | (0.013) |
| Share male 25-60 | 0.071*** | -0.013 |
| | (0.019) | (0.020) |
| Share not literate | -0.221*** | -0.210*** |
| | (0.006) | (0.006) |
| Share married | 0.109*** | 0.117*** |
| | (0.009) | (0.009) |
| Share non-relatives/ servants | 0.700*** | 0.793*** |
| | (0.111) | (0.119) |
| HH size: 1 | 0.398*** | 0.405*** |
| | (0.017) | (0.018) |
| HH size: 2 | 0.167*** | 0.160*** |
| | (0.008) | (0.009) |
| HH size: 3 | 0.088*** | 0.078*** |
| | (0.006) | (0.006) |
| HH size: 5 | -0.085*** | -0.088*** |
| | (0.005) | (0.005) |
| HH size: 6+ | -0.187*** | -0.189*** |
| | (0.004) | (0.004) |
| Log land possessed (m2) | 0.021*** | 0.019*** |
| | (0.001) | (0.001) |
| Constant | 7.294*** | 7.246*** |
| | (0.023) | (0.022) |
| State-fixed effects | Yes | No |
| Observations | 58,760 | 58,760 |
| $R^2$ | 0.478 | 0.394 |
| Adjusted $R^2$ | 0.478 | 0.394 |
| Residual Std. Error | 40.319 (df = 58702) | 43.428 (df = 58730) |
| F Statistic | 943.597*** (df = 57; 58702) | 1,318.215*** (df = 29; 58730) |
| *Note:* | | *p**p***p<0.01 |

**Appendix Table 30** Beta-model for imputation out of CES Type 2 Rural: LASSO including only demographics.

**CES type 2 Urban 2011/12 - Lasso excl. assets**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE MRP | |
| | (1) | (2) |
| HH Type: Regular wage | 0.062*** | 0.075*** |
| | (0.005) | (0.005) |
| HH Type: Casual labour | -0.163*** | -0.151*** |
| | (0.007) | (0.007) |
| Posesses Rationcard | -0.059*** | -0.027*** |
| | (0.006) | (0.006) |
| Social group: Scheduled Castes | -0.036*** | -0.024*** |
| | (0.007) | (0.007) |
| Social group: Other | 0.149*** | 0.163*** |
| | (0.005) | (0.005) |
| Mean age | 0.004*** | 0.004*** |
| | (0.0004) | (0.0004) |
| Female has highest education | 0.075*** | 0.083*** |
| | (0.004) | (0.005) |
| Children's generation has highest education | 0.108*** | 0.104*** |
| | (0.005) | (0.005) |
| Grandchildren's generation has highest education | -0.097*** | -0.107*** |
| | (0.014) | (0.014) |
| Non-relatives/ servents present | 0.331*** | 0.326*** |
| | (0.022) | (0.023) |
| Religion: Islam | -0.055*** | -0.051*** |
| | (0.006) | (0.007) |
| Religion: Christianity | 0.095*** | 0.100*** |
| | (0.015) | (0.014) |
| Dwelling rented | 0.135*** | 0.143*** |
| | (0.006) | (0.006) |
| No dwelling unit | -0.246*** | -0.233*** |
| | (0.073) | (0.075) |
| Other dwelling unit than owned or rented | -0.101*** | -0.102*** |
| | (0.015) | (0.015) |
| Cooking energy: Coke/ Coal | -0.108*** | -0.209*** |
| | (0.017) | (0.016) |

| | | |
|---|---|---|
| Cooking energy: Firewood | -0.105*** | -0.130*** |
| | (0.011) | (0.011) |
| Cooking energy: LPG | 0.218*** | 0.224*** |
| | (0.009) | (0.010) |
| Cooking energy: Electricity | 0.165*** | 0.114** |
| | (0.045) | (0.046) |
| Cooking energy: Other | 0.357*** | 0.360*** |
| | (0.023) | (0.023) |
| Cooking energy: no arrangement | 0.244*** | 0.260*** |
| | (0.025) | (0.025) |
| Lighting energy: Gas | 0.371*** | 0.448*** |
| | (0.077) | (0.080) |
| Lighting energy: Electricity | 0.128*** | 0.182*** |
| | (0.012) | (0.013) |
| Share <14 | -0.224*** | -0.237*** |
| | (0.015) | (0.015) |
| Share 25-60 | 0.084*** | 0.079*** |
| | (0.012) | (0.013) |
| Share not literate | -0.354*** | -0.369*** |
| | (0.011) | (0.011) |
| Share widowed | -0.196*** | -0.180*** |
| | (0.021) | (0.021) |
| Share unmarried children | -0.095*** | -0.124*** |
| | (0.012) | (0.012) |
| Share siblings/other | -0.165*** | -0.161*** |
| | (0.019) | (0.020) |
| HH size: 1 | 0.303*** | 0.289*** |
| | (0.020) | (0.020) |
| HH size: 2 | 0.145*** | 0.139*** |
| | (0.012) | (0.012) |
| HH size: 3 | 0.107*** | 0.098*** |
| | (0.008) | (0.008) |
| HH size: 5 | -0.136*** | -0.143*** |
| | (0.007) | (0.007) |
| HH size: 6+ | -0.247*** | -0.258*** |
| | (0.007) | (0.007) |
| Log land possessed (m2) | 0.026*** | 0.018*** |
| | (0.001) | (0.001) |

| | | |
|---|---|---|
| Constant | 7.339*** | 7.253*** |
| | (0.026) | (0.024) |
| State-fixed effects | Yes | No |
| Observations | 40,339 | 40,339 |
| $R^2$ | 0.504 | 0.472 |
| Adjusted $R^2$ | 0.503 | 0.471 |
| Residual Std. Error | 38.577 (df = 40275) | 39.786 (df = 40303) |
| F Statistic | 649.335*** (df = 63; 40275) | 1,029.141*** (df = 35; 40303) |
| *Note:* | | *p**p***p<0.01 |

**Appendix Table 31** Beta-model for imputation out of CES Type 2 Urban: LASSO including only demographics.

| | Rural | | | Urban | | |
|---|---|---|---|---|---|---|
| State | # Observations | # Regressors | Adj. R2 | # Observations | # Regressors | Adj. R2 |
| AndhraPradesh | 2423 | 19 | 0.413345 | 2423 | 22 | 0.511799 |
| ArunachalPradesh | 1071 | 21 | 0.461407 | 1071 | 14 | 0.288909 |
| Assam | 2608 | 20 | 0.442779 | 2608 | 22 | 0.617906 |
| Bihar | 3310 | 19 | 0.405333 | 3310 | 23 | 0.651612 |
| Chhattisgarh | 1435 | 16 | 0.438973 | 1435 | 18 | 0.661774 |
| Delhi | 64 | 4 | 0.625873 | 64 | 23 | 0.583278 |
| Gujrat | 1712 | 23 | 0.47748 | 1712 | 19 | 0.410746 |
| Haryana | 1424 | 17 | 0.52162 | 1424 | 28 | 0.563825 |
| HimachalPradesh | 1658 | 16 | 0.436347 | 1658 | 10 | 0.486145 |
| Jammu&Kashmir | 1968 | 17 | 0.430442 | 1968 | 27 | 0.531073 |
| Jharkhand | 1757 | 20 | 0.48657 | 1757 | 17 | 0.620938 |
| Karnataka | 2048 | 10 | 0.387418 | 2048 | 25 | 0.579629 |
| Kerala | 2604 | 19 | 0.339286 | 2604 | 20 | 0.458749 |
| MadhyaPradesh | 2735 | 21 | 0.403081 | 2735 | 29 | 0.575093 |
| Maharashtra | 4032 | 20 | 0.479662 | 4032 | 23 | 0.439405 |
| Manipur | 1376 | 18 | 0.425058 | 1376 | 15 | 0.436452 |
| Meghalaya | 856 | 23 | 0.615117 | 856 | 9 | 0.435305 |
| Mizoram | 640 | 14 | 0.55365 | 640 | 12 | 0.37866 |
| Nagaland | 672 | 10 | 0.52976 | 672 | 11 | 0.428898 |
| Orissa | 2973 | 23 | 0.487912 | 2973 | 19 | 0.598403 |
| Punjab | 1552 | 18 | 0.540707 | 1552 | 17 | 0.490362 |
| Rajasthan | 2579 | 21 | 0.421406 | 2579 | 20 | 0.580657 |
| Sikkim | 608 | 13 | 0.638773 | 608 | 12 | 0.693492 |
| TamilNadu | 3319 | 15 | 0.349775 | 3319 | 22 | 0.395506 |
| Telangana | 1504 | 18 | 0.366917 | 1504 | 10 | 0.394011 |
| Tripura | 1312 | 16 | 0.434174 | 1312 | 15 | 0.581731 |
| UttarPradesh | 5916 | 23 | 0.434668 | 5916 | 23 | 0.55438 |
| Uttaranchal | 1048 | 10 | 0.473147 | 1048 | 13 | 0.55855 |
| WestBengal | 3568 | 22 | 0.425112 | 3568 | 29 | 0.497682 |

**Appendix Table 32** Key descriptives for one set of state-level imputation models at urban and rural sector. The sumarized models arise out of our described LASSO method including solely demographics and no asset variables. Overall about 17-20 variables are used for imputation and values of Adj. R2 between 0.4-0.6 are reached.

**Beta-Models EUS**

**EUS Rural 2011/12 - Economic Reasoning**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE | |
| | (1) | (2) |
| HH Type: Casual labour in Agriculture | -0.114*** | -0.112*** |
| | (0.005) | (0.006) |
| HH Type: Casual labour in Non-Agriculture | -0.083*** | -0.087*** |
| | (0.006) | (0.006) |
| Religion: Hindu | -0.065*** | -0.222*** |
| | (0.009) | (0.008) |
| Religion: Islam | -0.046*** | -0.222*** |
| | (0.010) | (0.009) |
| Scheduled Tribes | -0.219*** | -0.250*** |
| | (0.006) | (0.006) |
| Scheduled Castes | -0.111*** | -0.119*** |
| | (0.005) | (0.005) |
| Other backward classes | -0.058*** | -0.069*** |
| | (0.004) | (0.004) |
| Age Head of household | -0.0005*** | -0.001*** |
| | (0.0002) | (0.0002) |
| Non-relatives/ servants present | 0.166*** | 0.159*** |
| | (0.031) | (0.033) |
| Number generations present | 0.078*** | 0.088*** |
| | (0.013) | (0.014) |
| Education: Graduate+ present | 0.174*** | 0.186*** |
| | (0.005) | (0.006) |
| Share education middle school+ | 0.173*** | 0.195*** |
| | (0.008) | (0.009) |
| HH size: 1 | 0.722*** | 0.789*** |
| | (0.021) | (0.022) |
| HH size: 2 | 0.434*** | 0.454*** |
| | (0.012) | (0.013) |
| HH size: 3 | 0.325*** | 0.329*** |
| | (0.006) | (0.007) |

| | | |
|---|---|---|
| HH size: 4 | 0.219*** | 0.229*** |
| | (0.005) | (0.005) |
| HH size: 5 | 0.116*** | 0.118*** |
| | (0.004) | (0.004) |
| Share <14 | -0.152*** | -0.197*** |
| | (0.010) | (0.011) |
| Share 25-34 | 0.046*** | 0.026** |
| | (0.012) | (0.013) |
| Share 34-49 | 0.090*** | 0.070*** |
| | (0.011) | (0.012) |
| Share 49-60 | 0.081*** | 0.063*** |
| | (0.012) | (0.013) |
| Share not literate | 0.102*** | 0.168*** |
| | (0.036) | (0.038) |
| Share literate, formally educated | 0.249*** | 0.310*** |
| | (0.036) | (0.038) |
| Share males | 0.040*** | 0.017* |
| | (0.009) | (0.010) |
| Share married | 0.173*** | 0.194*** |
| | (0.011) | (0.011) |
| Share married children | -0.161*** | -0.115*** |
| | (0.026) | (0.028) |
| Income from public labour present | -0.119*** | -0.137*** |
| | (0.011) | (0.012) |
| Income from casual labour present | -0.077*** | -0.079*** |
| | (0.006) | (0.006) |
| Mean daily income from casual labour in FSU (Rupees) | 0.001*** | 0.001*** |
| | (0.00003) | (0.00003) |
| Daily earnings from casual labour (Rupees) | 0.0001*** | 0.0001*** |
| | (0.00002) | (0.00002) |
| Daily earnings regular (Rupees) | 0.0002*** | 0.0002*** |
| | (0.00001) | (0.00001) |
| Share NCO 1-4 | 0.169*** | 0.224*** |
| | (0.014) | (0.015) |
| Share NCO 5-9 | -0.015** | 0.066*** |
| | (0.007) | (0.007) |
| Head of household NCO 5-9 | -0.003 | -0.015*** |

| | | |
|---|---|---|
| | (0.005) | (0.005) |
| Constant | 6.585*** | 6.478*** |
| | (0.045) | (0.044) |
| State-fixed effects | Yes | No |
| Observations | 58,773 | 58,773 |
| $R^2$ | 0.459 | 0.388 |
| Adjusted $R^2$ | 0.459 | 0.388 |
| Residual Std. Error | 41.604 (df = 58710) | 44.239 (df = 58738) |
| F Statistic | 804.212*** (df = 62; 58710) | 1,096.680*** (df = 34; 58738) |
| *Note:* | | *p**p***p<0.01 |

**Appendix Table 33** Beta-model for imputation out of EUS Rural: Economically reasoned model including wage and labour variables.

**EUS Urban 2011/12 - Economic Reasoning**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE | |
| | (1) | (2) |
| HH Type: Self-employed | -0.057*** | -0.051*** |
| | (0.013) | (0.013) |
| HH Type: Regular wage | -0.101*** | -0.075*** |
| | (0.013) | (0.013) |
| HH Type: Casual labour | -0.178*** | -0.168*** |
| | (0.015) | (0.016) |
| Religion: Islam | -0.052*** | -0.055*** |
| | (0.006) | (0.006) |
| Religion: Christianity | 0.073*** | 0.078*** |
| | (0.015) | (0.014) |
| Scheduled Tribes | -0.186*** | -0.210*** |
| | (0.013) | (0.013) |
| Scheduled Castes | -0.184*** | -0.194*** |
| | (0.007) | (0.007) |
| Other backward classes | -0.107*** | -0.124*** |
| | (0.005) | (0.005) |
| Female has highest education | 0.055*** | 0.056*** |
| | (0.005) | (0.005) |
| Grandchildren's generation has highest education | -0.041*** | -0.045*** |

| | | |
|---|---|---|
| | (0.013) | (0.013) |
| Non-relatives/ servants present | 0.398*** | 0.389*** |
| | (0.024) | (0.025) |
| Number generations present | 0.111*** | 0.133*** |
| | (0.016) | (0.017) |
| Education: Graduate+ present | 0.266*** | 0.259*** |
| | (0.006) | (0.006) |
| Share education middle school+ | 0.049*** | 0.069*** |
| | (0.010) | (0.010) |
| HH size: 1 | 0.812*** | 0.849*** |
| | (0.021) | (0.022) |
| HH size: 2 | 0.568*** | 0.579*** |
| | (0.016) | (0.017) |
| HH size: 3 | 0.410*** | 0.415*** |
| | (0.008) | (0.009) |
| HH size: 4 | 0.308*** | 0.329*** |
| | (0.006) | (0.006) |
| HH size: 5 | 0.180*** | 0.195*** |
| | (0.006) | (0.006) |
| Share <14 | -0.218*** | -0.227*** |
| | (0.016) | (0.017) |
| Share girls <14 | 0.108*** | 0.101*** |
| | (0.025) | (0.026) |
| Share literate, formally educated | 0.305*** | 0.325*** |
| | (0.011) | (0.011) |
| Share males | 0.082*** | 0.057*** |
| | (0.017) | (0.018) |
| Share married | 0.146*** | 0.159*** |
| | (0.013) | (0.013) |
| Share married children | -0.335*** | -0.374*** |
| | (0.041) | (0.042) |
| Share unmarried children | -0.129*** | -0.163*** |
| | (0.016) | (0.016) |
| Income from casual labour present | -0.116*** | -0.129*** |
| | (0.011) | (0.011) |
| Mean daily income from casual labour in FSU (Rupees) | 0.001*** | 0.001*** |
| | (0.00003) | (0.00003) |

| | | |
|---|---|---|
| Daily earnings from casual labour (Rupees) | 0.0002*** | 0.0002*** |
| | (0.00003) | (0.00003) |
| Daily earnings regular (Rupees) | 0.0002*** | 0.0002*** |
| | (0.00000) | (0.00000) |
| Share NCO 1-4 | 0.039*** | 0.063*** |
| | (0.014) | (0.015) |
| Share NCO 5-9 | -0.124*** | -0.079*** |
| | (0.012) | (0.012) |
| Head of household NCO 1-4 | 0.056*** | 0.059*** |
| | (0.008) | (0.009) |
| Head of household NCO 5-9 | -0.044*** | -0.048*** |
| | (0.008) | (0.008) |
| Constant | 6.861*** | 6.789*** |
| | (0.035) | (0.025) |
| State-fixed effects | Yes | No |
| Observations | 40,398 | 40,398 |
| $R^2$ | 0.554 | 0.520 |
| Adjusted $R^2$ | 0.554 | 0.519 |
| Residual Std. Error | 36.982 (df = 40335) | 38.377 (df = 40363) |
| F Statistic | 809.646*** (df = 62; 40335) | 1,285.448*** (df = 34; 40363) |
| *Note:* | | *p**p***p<0.01 |

**Appendix Table 34** Beta-model for imputation out of EUS Urban: Economically reasoned model including wage and labour variables.

## Sector-wide and national estimates based on approaches not present in the main text

| Model | SFE | Rural | Urban | Total |
|---|---|---|---|---|
| Economic Reasoning Demographics | No | 12.4 (0.78) | 10.4 (1.23) | 11.8 (0.66) |
| Economic Reasoning Demographics | Yes | 11.9 (0.68) | 9.3 (1.09) | 11.1 (0.58) |
| LASSO Demographics | No | 12.9 (0.80) | 12.3 (0.84) | 12.7 (0.62) |
| LASSO Demographics | Yes | 12.4 (0.66) | 11.1 (0.70) | 12.0 (0.51) |
| Economic Reasoning Demographics and Assets | No | 13.3 (0.77) | 8.1 (0.86) | 11.7 (0.60) |
| Economic Reasoning Demographics and Assets | Yes | 12.9 (0.68) | 7.4 (0.79) | 11.3 (0.53) |
| LASSO Demographics and Assets | No | 10.3 (0.62) | 7.5 (0.53) | 9.5 (0.47) |
| LASSO Demographics and Assets | Yes | 10.4 (0.59) | 6.7 (0.43) | 9.3 (0.44) |

**Appendix Table 35** Poverty headcount ratios for the total, urban respectively rural population of India for 2022/23, based on imputations out of CES 2011/12 type 1 into HCES 2022/23. Tendulkar poverty lines were used for the determination of poverty status. That allows them to be directly comparable with the latest poverty estimates of 2011/12. Imputation models are sector-wide and based on LASSO including only variables that are common between CES and PLFS as well as state-fixed effects (SFE). The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| Model | Rural | Urban | Total |
|---|---|---|---|
| **Sector-level models used at state-level** | | | |
| Economic Reasoning Demographics | 12.1 (0.60) | 10.4 (1.12) | 11.6 (0.53) |
| LASSO Demographics | 12.6 (0.64) | 11.2 (0.68) | 12.1 (0.50) |
| Economic Reasoning Demographics and Assets | 13.2 (0.66) | 8.3 (0.82) | 11.7 (0.53) |
| LASSO Demographics and Assets | 10.5 (0.59) | 7.0 (0.42) | 9.5 (0.44) |
| **State-level models found with LASSO** | | | |
| Demographics | 14.6 (0.73) | 11.1 (0.65) | 13.6 (0.55) |
| Demographics and Assets | 11.6 (0.59) | 7.6 (0.42) | 10.4 (0.44) |

**Appendix Table 36** Poverty headcount ratios for the total, urban respectively rural population of India for 2022/23, based on imputations out of CES 2011/12 type 1 into HCES 2022/23. Tendulkar poverty lines were used for the determination of poverty status. That allows them to be directly comparable with the latest poverty estimates of 2011/12. Imputation models are state-wide and based on LASSO including only variables that are common between CES and PLFS. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| Dataset | Sector | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---|---|---|---|---|---|---|---|
| **Economic Reasoning** | Urban | 14.9 (0.92) | 13.9 (0.92) | 13.1 (0.87) | 13.1 (0.85) | 13.3 (0.87) | 12.9 (0.89) |
| **Economic Reasoning** | Rural | 20.4 (1.00) | 19.6 (0.94) | 19.7 (0.96) | 19.1 (0.93) | 19.5 (0.95) | 19.5 (2.88) |
| **Economic Reasoning** | Total | 18.8 (0.75) | 17.9 (0.72) | 17.7 (0.72) | 17.3 (0.70) | 17.7 (0.72) | 17.6 (2.07) |
| **Economic Reasoning + SFE** | Urban | 13.3 (0.77) | 12.6 (0.74) | 11.9 (0.68) | 11.8 (0.67) | 11.9 (0.68) | 11.6 (0.68) |
| **Economic Reasoning + SFE** | Rural | 22.2 (0.86) | 21.6 (0.83) | 21.5 (0.84) | 20.8 (0.84) | 22.4 (0.86) | 23.1 (3.27) |
| **Economic Reasoning + SFE** | Total | 19.5 (0.64) | 18.9 (0.62) | 18.5 (0.62) | 18.1 (0.62) | 19.4 (0.64) | 19.9 (2.34) |
| **LASSO All** | Urban | 14.8 (0.94) | 13.9 (0.89) | 13.1 (0.86) | 13.0 (0.85) | 13.3 (0.85) | 12.9 (0.84) |
| **LASSO All** | Rural | 20.4 (0.94) | 19.6 (0.93) | 19.5 (0.93) | 18.8 (0.92) | 19.2 (0.91) | 19.1 (2.82) |
| **LASSO All** | Total | 18.7 (0.71) | 17.8 (0.70) | 17.5 (0.69) | 17.1 (0.69) | 17.5 (0.69) | 17.4 (2.03) |
| **LASSO All + SFE** | Urban | 13.3 (0.76) | 12.6 (0.70) | 11.9 (0.69) | 11.8 (0.66) | 12.0 (0.68) | 11.7 (0.68) |
| **LASSO All + SFE** | Rural | 20.5 (0.87) | 19.5 (0.85) | 19.4 (0.82) | 18.6 (0.79) | 19.6 (0.84) | 20.6 (3.31) |
| **LASSO All + SFE** | Total | 18.3 (0.65) | 17.4 (0.63) | 17.1 (0.61) | 16.6 (0.59) | 17.4 (0.63) | 18.0 (2.37) |
| **LASSO Demographics** | Urban | 16.1 (1.08) | 15.4 (1.04) | 14.6 (0.96) | 14.6 (0.95) | 14.8 (0.98) | 14.1 (0.96) |
| **LASSO Demographics** | Rural | 21.9 (1.08) | 21.4 (1.08) | 21.3 (1.08) | 20.6 (1.09) | 21.7 (1.08) | 21.5 (3.09) |
| **LASSO Demographics** | Total | 20.2 (0.82) | 19.6 (0.82) | 19.2 (0.81) | 18.8 (0.82) | 19.7 (0.82) | 19.4 (2.23) |
| **LASSO Demographics + SFE** | Urban | 14.3 (0.84) | 13.7 (0.78) | 13.0 (0.75) | 12.9 (0.74) | 13.1 (0.71) | 12.5 (0.73) |
| **LASSO Demographics + SFE** | Rural | 21.4 (0.86) | 20.8 (0.82) | 20.6 (0.85) | 19.8 (0.84) | 21.4 (0.85) | 22.3 (3.33) |
| **LASSO Demographics + SFE** | Total | 19.3 (0.65) | 18.7 (0.62) | 18.3 (0.63) | 17.7 (0.63) | 19.0 (0.64) | 19.5 (2.39) |

**Appendix Table 37** Poverty headcount ratios for the total, urban respectively rural population of India between 2017/18 and 2022/23 in percentages. These values are based on imputations out of EUS 2011/12 into different rounds of PLFS. Imputations are based on *sector-wide* models for urban and rural before adding them up for the total numbers. The underlying models are either based on economic reasoning, or were found using LASSO that includes demographics only or all variables that are available between EUS and PLFS, that includes wage variables that need to be deflated using CPI. Further, state-fixed effects (SFE) are included in some. Imputed values are compared with the EUS corresponding poverty lines for the MRP measure of CES in 2011/12 type 1. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| Model | Sector | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---|---|---|---|---|---|---|---|
| **Sector-level models used at state-level** | | | | | | | |
| Economic Reasoning | Rural | 20.2 (0.78) | 19.2 (0.77) | 19.3 (0.77) | 18.2 (0.76) | 19.0 (0.80) | 19.9 (2.75) |
| LASSO All | Rural | 20.1 (0.78) | 19.1 (0.77) | 19.1 (0.76) | 18.0 (0.75) | 18.9 (0.79) | 19.7 (2.77) |
| LASSO Demographics | Rural | 21.2 (0.81) | 20.6 (0.80) | 20.5 (0.80) | 19.6 (0.79) | 21.3 (0.82) | 22.3 (2.81) |
| Economic Reasoning | Urban | 13.4 (0.74) | 12.6 (0.70) | 12.0 (0.68) | 11.8 (0.65) | 11.8 (0.66) | 11.4 (0.67) |
| LASSO All | Urban | 13.4 (0.74) | 12.6 (0.70) | 12.0 (0.68) | 11.8 (0.65) | 11.8 (0.66) | 11.4 (0.67) |
| LASSO Demographics | Urban | 14.7 (0.87) | 14.0 (0.81) | 13.3 (0.77) | 13.2 (0.74) | 13.4 (0.80) | 12.8 (0.79) |
| Economic Reasoning | Whole | 18.0 (0.59) | 17.0 (0.58) | 17.0 (0.58) | 16.3 (0.57) | 16.9 (0.60) | 17.5 (2.03) |
| LASSO All | Whole | 18.1 (0.59) | 17.1 (0.58) | 17.0 (0.57) | 16.2 (0.56) | 16.9 (0.60) | 17.5 (2.05) |
| LASSO Demographics | Whole | 19.2 (0.63) | 18.5 (0.61) | 18.2 (0.60) | 17.6 (0.60) | 19.0 (0.63) | 19.7 (2.08) |
| **State-level models found with LASSO** | | | | | | | |
| Individual model per state | 20.6 (0.79) | 19.7 (0.79) | 19.8 (0.77) | 18.6 (0.75) | 19.6 (0.80) | 20.8 (2.79) | 20.6 (0.79) |
| Individual model per state | 13.3 (0.73) | 12.5 (0.70) | 11.9 (0.67) | 11.7 (0.64) | 11.9 (0.67) | 11.5 (0.67) | 13.3 (0.73) |
| Individual model per state | 18.4 (0.60) | 17.5 (0.59) | 17.4 (0.57) | 16.6 (0.57) | 17.5 (0.61) | 18.3 (2.06) | 18.4 (0.60) |

**Appendix Table 38** Poverty headcount ratios for the total, urban respectively rural population of India between 2017/18 and 2022/23 in percentages. These values are based on imputations out of EUS 2011/12 into different rounds of PLFS. Imputations are based on *state-wide* models for urban and rural before adding them up for the total numbers. The underlying models are either based on economic reasoning, or were found using LASSO that includes demographics only or all variables that are available between EUS and PLFS, that includes wage variables that need to be deflated using CPI. Imputed values are compared with the EUS corresponding poverty lines for the MRP measure of CES in 2011/12 type 1. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| Rural State | Economic Reasoning All + SFE | Economic Reasoning All | Economic Reasoning Demographics + SFE | Economic Reasoning Demographics | LASSO All + SFE | LASSO All | LASSO Demographics + SFE | LASSO Demographics |
|---|---|---|---|---|---|---|---|---|
| Andhra Pradesh | 3.1 (0.99) | 5.4 (1.46) | 2.8 (0.95) | 6.0 (1.72) | 1.9 (0.64) | 4.0 (1.07) | 3.0 (0.95) | 6.2 (1.79) |
| Arunachal Pradesh | 17.2 (3.57) | 15.4 (3.20) | 16.4 (3.55) | 14.9 (3.32) | 10.1 (2.43) | 16.2 (3.01) | 14.8 (3.28) | 17.8 (3.69) |
| Assam | 19.7 (2.81) | 10.8 (1.81) | 18.5 (2.69) | 9.3 (1.67) | 17.4 (2.60) | 12.4 (1.84) | 19.4 (2.72) | 9.8 (1.69) |
| Bihar | 22.0 (3.13) | 19.5 (3.01) | 19.0 (3.13) | 16.6 (2.87) | 19.9 (3.00) | 17.6 (2.68) | 20.0 (3.00) | 17.5 (3.01) |
| Chhattisgarh | 22.4 (3.46) | 9.5 (1.92) | 22.7 (3.62) | 10.0 (2.07) | 16.3 (2.69) | 7.4 (1.45) | 23.1 (3.56) | 10.0 (2.12) |
| Delhi | 6.1 (5.60) | 17.7 (9.74) | 4.8 (4.69) | 21.2 (11.05) | 1.9 (2.52) | 5.8 (4.40) | 4.6 (4.50) | 20.6 (11.24) |
| Gujrat | 12.1 (2.15) | 21.2 (2.45) | 11.1 (1.98) | 19.4 (2.33) | 9.0 (1.61) | 14.5 (1.85) | 11.3 (2.06) | 19.6 (2.42) |
| Haryana | 4.5 (1.26) | 19.1 (3.02) | 4.1 (1.23) | 20.6 (3.15) | 2.6 (0.87) | 8.7 (1.74) | 4.5 (1.27) | 21.9 (3.42) |
| Himachal Pradesh | 2.9 (1.40) | 9.0 (2.75) | 3.2 (1.51) | 10.8 (3.32) | 1.4 (0.77) | 5.1 (1.65) | 3.3 (1.49) | 11.1 (3.25) |
| Jammu & Kashmir | 9.2 (2.34) | 14.9 (2.98) | 6.3 (1.82) | 12.3 (2.88) | 5.3 (1.64) | 14.0 (2.64) | 5.3 (1.61) | 12.5 (2.88) |
| Jharkhand | 25.4 (3.75) | 14.4 (2.53) | 21.6 (3.64) | 11.6 (2.41) | 22.1 (3.36) | 13.0 (2.21) | 23.4 (3.70) | 12.6 (2.47) |
| Karnataka | 6.8 (1.44) | 8.9 (1.58) | 6.5 (1.36) | 9.3 (1.74) | 5.1 (1.14) | 7.1 (1.31) | 6.8 (1.44) | 9.3 (1.78) |
| Kerala | 5.6 (1.71) | 14.0 (3.27) | 4.7 (1.50) | 15.3 (3.55) | 2.7 (0.90) | 6.5 (1.81) | 5.3 (1.65) | 15.9 (3.64) |
| Madhya Pradesh | 18.3 (2.06) | 12.5 (1.56) | 18.3 (2.09) | 12.1 (1.71) | 13.2 (1.60) | 8.4 (1.15) | 18.9 (2.17) | 12.6 (1.68) |
| Maharashtra | 11.9 (1.73) | 14.8 (2.03) | 12.4 (1.79) | 15.1 (2.02) | 9.3 (1.38) | 11.6 (1.56) | 12.5 (1.80) | 15.2 (2.06) |
| Manipur | 27.8 (5.42) | 24.1 (4.85) | 25.6 (5.25) | 21.1 (4.90) | 22.9 (4.69) | 25.1 (4.33) | 25.9 (5.49) | 23.2 (5.07) |
| Meghalaya | 17.1 (5.24) | 27.8 (6.02) | 15.4 (4.76) | 24.1 (6.30) | 14.9 (4.53) | 30.5 (5.76) | 16.0 (5.06) | 27.6 (6.49) |
| Mizoram | 12.9 (4.39) | 16.0 (4.67) | 16.5 (5.43) | 17.5 (5.18) | 8.7 (2.94) | 13.0 (3.42) | 16.2 (5.24) | 20.6 (5.90) |
| Nagaland | 35.2 (5.73) | 46.2 (5.49) | 32.2 (5.86) | 41.8 (6.03) | 24.0 (4.87) | 48.9 (4.80) | 29.1 (5.52) | 46.0 (5.83) |
| Orissa | 22.4 (2.80) | 7.4 (1.38) | 21.4 (2.79) | 6.9 (1.35) | 17.6 (2.24) | 6.7 (1.18) | 22.0 (2.79) | 7.3 (1.45) |
| Punjab | 1.4 (0.57) | 12.5 (2.58) | 1.1 (0.50) | 13.1 (2.84) | 1.0 (0.46) | 5.5 (1.48) | 1.2 (0.51) | 16.0 (3.14) |
| Rajasthan | 10.1 (1.64) | 24.1 (2.75) | 9.0 (1.59) | 21.4 (2.86) | 6.3 (1.15) | 14.7 (1.82) | 9.4 (1.57) | 22.0 (2.76) |
| Sikkim | 5.0 (2.71) | 4.7 (2.60) | 7.0 (3.56) | 6.0 (3.08) | 3.7 (2.14) | 6.2 (2.87) | 6.7 (3.62) | 6.3 (3.17) |
| Tamil Nadu | 3.7 (0.88) | 5.6 (1.09) | 3.6 (0.83) | 7.0 (1.39) | 2.2 (0.56) | 3.2 (0.68) | 3.8 (0.90) | 7.2 (1.44) |
| Telangana | 1.8 (0.68) | 4.0 (1.00) | 1.8 (0.66) | 4.5 (1.15) | 1.4 (0.57) | 2.5 (0.70) | 2.1 (0.82) | 4.7 (1.20) |
| Tripura | 7.8 (3.07) | 8.5 (2.56) | 7.2 (2.79) | 8.1 (2.66) | 5.9 (2.39) | 7.8 (2.26) | 7.6 (3.14) | 8.7 (2.86) |
| Uttar Pradesh | 12.3 (1.34) | 11.9 (1.33) | 10.5 (1.30) | 10.5 (1.28) | 10.1 (1.19) | 9.3 (1.07) | 11.1 (1.31) | 10.8 (1.35) |
| Uttaranchal | 5.6 (2.11) | 10.4 (3.22) | 5.6 (2.22) | 11.3 (3.35) | 4.6 (1.65) | 7.8 (2.22) | 5.8 (2.24) | 11.6 (3.53) |
| West Bengal | 9.1 (1.94) | 8.6 (1.73) | 9.1 (2.07) | 8.4 (1.78) | 7.4 (1.66) | 8.3 (1.58) | 9.6 (2.05) | 8.9 (1.97) |

**Appendix Table 39** Rural state estimates of poverty rate (in percentages) for 2022/23 based on the imputation out of CES Type 1 2011/12 into HCES 2022/23 at the sector-level. Each column represents a different approach, SFE stands for the inclusion of state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| Urban State | Economic Reasoning All + SFE | Economic Reasoning All | Economic Reasoning Demographics + SFE | Economic Reasoning Demographics | LASSO All + SFE | LASSO All | LASSO Demographics + SFE | LASSO Demographics |
|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 4.4 (1.38) | 5.5 (1.44) | 7.0 (2.11) | 8.3 (2.13) | 3.7 (1.21) | 4.9 (1.30) | 8.6 (2.25) | 10.1 (2.26) |
| **Arunachal Pradesh** | 6.3 (2.03) | 4.3 (1.41) | 11.5 (3.65) | 6.0 (2.05) | 5.3 (1.78) | 5.0 (1.50) | 13.0 (3.65) | 8.0 (2.31) |
| **Assam** | 10.9 (2.46) | 7.3 (1.60) | 10.5 (2.80) | 5.7 (1.58) | 10.1 (2.11) | 8.8 (1.65) | 12.5 (2.87) | 6.8 (1.58) |
| **Bihar** | 23.1 (3.40) | 17.8 (2.71) | 23.7 (3.75) | 15.0 (2.93) | 22.1 (3.18) | 18.0 (2.56) | 27.0 (3.73) | 17.6 (2.71) |
| **Chhattisgarh** | 10.2 (2.56) | 6.3 (1.70) | 11.5 (3.13) | 7.5 (2.18) | 8.0 (1.99) | 4.0 (1.24) | 13.8 (3.23) | 9.3 (2.19) |
| **Delhi** | 4.6 (1.98) | 6.6 (2.07) | 6.4 (2.76) | 11.7 (3.28) | 4.0 (1.78) | 5.1 (1.67) | 7.6 (2.86) | 13.9 (3.44) |
| **Gujrat** | 6.2 (1.60) | 10.2 (2.09) | 8.3 (2.47) | 13.8 (3.16) | 6.0 (1.54) | 11.1 (2.03) | 10.3 (2.55) | 16.4 (3.04) |
| **Haryana** | 6.9 (1.91) | 10.7 (2.20) | 7.9 (2.31) | 16.8 (3.15) | 6.4 (1.67) | 8.4 (1.70) | 9.7 (2.39) | 19.3 (3.12) |
| **Himachal Pradesh** | 2.9 (1.43) | 3.7 (1.53) | 3.3 (1.63) | 5.7 (2.17) | 2.2 (1.24) | 4.1 (1.59) | 4.3 (1.82) | 6.8 (2.21) |
| **Jammu & Kashmir** | 2.8 (1.18) | 3.7 (1.32) | 4.7 (1.99) | 5.9 (2.22) | 3.1 (1.16) | 4.1 (1.24) | 5.5 (2.15) | 6.7 (2.21) |
| **Jharkhand** | 14.7 (3.06) | 12.8 (2.43) | 16.4 (3.68) | 13.1 (2.85) | 14.5 (2.85) | 12.6 (2.27) | 19.0 (3.57) | 15.2 (2.72) |
| **Karnataka** | 7.0 (1.56) | 9.2 (1.65) | 9.0 (2.25) | 11.4 (2.50) | 6.4 (1.32) | 8.5 (1.36) | 10.8 (2.42) | 13.4 (2.56) |
| **Kerala** | 2.8 (1.02) | 4.0 (1.24) | 5.0 (1.65) | 8.7 (2.31) | 2.1 (0.76) | 3.9 (1.12) | 6.2 (1.76) | 9.8 (2.22) |
| **Madhya Pradesh** | 11.2 (1.82) | 7.9 (1.39) | 13.4 (2.33) | 9.2 (1.74) | 8.6 (1.37) | 5.2 (0.91) | 15.5 (2.23) | 10.8 (1.66) |
| **Maharashtra** | 6.5 (1.41) | 9.2 (1.75) | 8.2 (2.02) | 10.5 (2.26) | 6.5 (1.37) | 9.7 (1.75) | 9.7 (2.01) | 12.5 (2.36) |
| **Manipur** | 22.8 (5.14) | 14.1 (3.51) | 25.7 (7.32) | 10.3 (3.62) | 20.1 (4.68) | 12.9 (3.05) | 27.9 (7.41) | 11.8 (3.90) |
| **Meghalaya** | 15.6 (4.50) | 16.0 (4.02) | 13.6 (4.88) | 14.1 (4.50) | 15.0 (4.28) | 18.2 (4.07) | 16.1 (4.96) | 17.5 (4.93) |
| **Mizoram** | 3.7 (1.79) | 4.5 (1.88) | 8.3 (3.56) | 9.2 (3.92) | 2.2 (1.06) | 3.5 (1.50) | 9.9 (3.92) | 11.0 (3.83) |
| **Nagaland** | 12.2 (3.14) | 12.8 (2.80) | 19.4 (4.93) | 12.9 (3.43) | 12.1 (3.14) | 16.5 (3.18) | 21.1 (4.79) | 15.6 (3.63) |
| **Orissa** | 13.2 (2.58) | 8.7 (1.72) | 14.4 (2.94) | 9.3 (1.97) | 12.7 (2.37) | 7.9 (1.47) | 16.6 (2.83) | 10.7 (1.88) |
| **Punjab** | 5.5 (1.58) | 7.6 (1.90) | 6.6 (1.92) | 13.2 (2.98) | 5.1 (1.32) | 6.2 (1.49) | 7.8 (2.00) | 16.0 (2.95) |
| **Rajasthan** | 6.4 (1.42) | 9.0 (1.60) | 8.2 (2.06) | 12.8 (2.51) | 5.2 (1.10) | 6.7 (1.18) | 9.9 (2.04) | 14.8 (2.29) |
| **Sikkim** | 4.8 (3.36) | 4.2 (2.63) | 5.5 (4.09) | 5.7 (3.72) | 4.9 (3.22) | 6.6 (3.38) | 6.8 (4.38) | 6.9 (4.05) |
| **Tamil Nadu** | 2.2 (0.64) | 2.6 (0.67) | 4.1 (1.18) | 5.0 (1.24) | 1.8 (0.52) | 2.0 (0.50) | 5.1 (1.17) | 6.2 (1.21) |
| **Telangana** | 2.6 (1.24) | 3.5 (1.39) | 5.3 (2.44) | 6.7 (2.79) | 2.0 (1.03) | 2.5 (1.06) | 6.3 (2.63) | 8.2 (3.06) |
| **Tripura** | 5.2 (2.57) | 4.9 (2.16) | 7.0 (3.75) | 5.3 (2.58) | 4.4 (2.23) | 6.1 (2.37) | 8.9 (4.04) | 6.3 (2.81) |
| **Uttar Pradesh** | 11.4 (1.57) | 9.8 (1.29) | 13.9 (2.14) | 12.3 (1.84) | 9.9 (1.14) | 8.2 (0.97) | 16.2 (1.98) | 14.3 (1.69) |
| **Uttaranchal** | 7.5 (3.10) | 8.8 (3.14) | 8.1 (3.65) | 11.4 (4.32) | 7.3 (2.87) | 8.7 (3.04) | 10.0 (3.85) | 13.8 (4.36) |
| **West Bengal** | 8.5 (1.91) | 9.3 (1.79) | 11.0 (2.49) | 9.3 (1.96) | 8.2 (1.69) | 11.5 (1.74) | 13.6 (2.41) | 11.3 (1.85) |

**Appendix Table 40** Urban state estimates of poverty rate (in percentages) for 2022/23 based on the imputation out of CES Type 1 2011/12 into HCES 2022/23 at the sector-level. Each column represents a different approach, SFE stands for the inclusion of state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| Rural State | Economic Reasoning All | Economic Reasoning only Demographics | LASSO All, sectorwide model | LASSO All, statewide model | LASSO only Demographics, sectorwide model | LASSO only Demographics, statewide model |
|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 2.7 (0.78) | 2.5 (0.75) | 2.3 (0.76) | 3.4 (0.89) | 2.6 (0.79) | 2.6 (0.80) |
| **Arunachal Pradesh** | 31.0 (8.46) | 30.9 (8.55) | 20.8 (6.78) | 21.6 (6.89) | 31.6 (8.48) | 28.2 (8.10) |
| **Assam** | 21.8 (2.93) | 19.7 (3.05) | 18.6 (2.75) | 23.3 (2.36) | 21.4 (3.17) | 19.4 (2.25) |
| **Bihar** | 22.6 (3.50) | 19.6 (3.02) | 20.0 (3.45) | 20.2 (3.02) | 19.4 (3.27) | 21.9 (3.37) |
| **Chhattisgarh** | 18.5 (2.61) | 17.6 (2.80) | 12.3 (1.99) | 16.6 (2.44) | 18.2 (2.85) | 31.5 (3.92) |
| **Delhi** | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 6.1 (4.42) |
| **Gujrat** | 13.1 (3.03) | 12.3 (2.86) | 10.5 (2.57) | 10.9 (2.31) | 13.0 (2.95) | 16.8 (3.36) |
| **Haryana** | 5.1 (1.86) | 5.8 (2.01) | 3.6 (1.33) | 4.6 (1.09) | 7.7 (2.65) | 7.1 (1.60) |
| **Himachal Pradesh** | 3.7 (2.21) | 4.0 (2.41) | 2.4 (1.41) | 2.7 (1.31) | 5.1 (2.85) | 6.6 (2.44) |
| **Jammu & Kashmir** | 5.5 (2.29) | 4.7 (2.06) | 5.5 (1.80) | 5.8 (1.70) | 5.5 (2.33) | 6.3 (2.32) |
| **Jharkhand** | 24.5 (2.94) | 21.2 (2.70) | 19.7 (2.26) | 23.0 (2.06) | 23.3 (2.65) | 26.2 (2.81) |
| **Karnataka** | 7.6 (2.11) | 7.2 (1.94) | 5.3 (1.43) | 7.2 (1.73) | 7.7 (2.21) | 10.6 (2.39) |
| **Kerala** | 5.5 (1.83) | 4.9 (1.68) | 3.1 (1.16) | 6.5 (1.51) | 5.0 (1.85) | 8.3 (2.22) |
| **Madhya Pradesh** | 23.0 (3.51) | 22.5 (3.45) | 14.7 (2.75) | 17.1 (4.76) | 22.4 (3.67) | 30.5 (6.62) |
| **Maharashtra** | 13.1 (1.83) | 13.4 (1.74) | 10.9 (1.46) | 12.5 (1.45) | 13.7 (1.77) | 16.8 (1.90) |
| **Manipur** | 22.7 (5.43) | 21.5 (5.68) | 19.4 (5.22) | 28.9 (5.57) | 21.9 (5.62) | 23.4 (6.29) |
| **Meghalaya** | 5.5 (1.83) | 4.2 (1.79) | 6.0 (2.21) | 3.1 (2.38) | 5.1 (2.32) | 2.0 (2.09) |
| **Mizoram** | 6.8 (7.05) | 16.2 (13.76) | 6.2 (5.55) | 12.3 (1.94) | 16.3 (13.57) | 23.5 (5.60) |
| **Nagaland** | 21.2 (4.90) | 20.0 (4.66) | 15.2 (4.40) | 19.6 (4.98) | 18.5 (4.40) | 16.4 (3.62) |
| **Orissa** | 19.8 (2.20) | 18.1 (2.13) | 15.1 (1.68) | 15.9 (1.73) | 19.1 (2.32) | 20.5 (2.33) |
| **Punjab** | 4.0 (1.31) | 3.7 (1.15) | 2.6 (0.87) | 2.3 (0.72) | 3.9 (1.20) | 3.4 (0.85) |
| **Rajasthan** | 10.9 (2.14) | 9.8 (1.91) | 6.9 (1.43) | 7.5 (1.28) | 9.9 (2.09) | 10.1 (1.59) |
| **Sikkim** | 3.9 (3.06) | 5.6 (3.76) | 2.1 (1.59) | 1.8 (1.10) | 7.1 (4.53) | 10.7 (2.73) |
| **Tamil Nadu** | 4.2 (1.38) | 4.4 (1.44) | 3.0 (0.95) | 4.0 (1.01) | 5.0 (1.60) | 6.0 (1.58) |
| **Telangana** | 1.1 (0.65) | 1.0 (0.58) | 0.7 (0.42) | 1.1 (0.62) | 1.1 (0.69) | 2.0 (1.07) |
| **Tripura** | 5.0 (4.32) | 4.4 (3.82) | 3.2 (3.43) | 5.7 (4.38) | 5.4 (5.15) | 9.3 (5.44) |
| **Uttar Pradesh** | 12.4 (1.53) | 10.9 (1.38) | 10.8 (1.28) | 11.1 (1.20) | 11.3 (1.37) | 12.4 (1.39) |
| **Uttaranchal** | 6.3 (2.47) | 8.0 (3.05) | 7.8 (2.71) | 5.5 (1.57) | 10.5 (3.82) | 8.5 (2.06) |

| | | | | | | |
|---|---|---|---|---|---|---|
| **West Bengal** | 6.8 (1.88) | 6.1 (1.65) | 5.7 (1.67) | 5.7 (1.47) | 6.9 (1.98) | 6.7 (1.77) |

**Appendix Table 41** Rural state estimates of poverty rate (in percentages) for 2022/23 based on the imputation out of CES Type 1 2011/12 into HCES 2022/23 at the state-level. Each column represents a different approach, state-model describes models that not only differ in the coefficient, but also in their variable selection between states. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| State | Economic Reasoning All | Economic Reasoning only Demographics | LASSO All, sectorwide model | LASSO All, statewide model | LASSO only Demographics, sectorwide model | LASSO only Demographics, statewide model |
|---|---|---|---|---|---|---|
| Andhra Pradesh | 5.2 (4.10) | 10.6 (7.76) | 3.5 (0.98) | 4.8 (1.24) | 7.0 (1.65) | 6.9 (1.60) |
| **Arunachal Pradesh** | 19.6 (9.72) | 27.3 (11.40) | 16.6 (6.72) | 9.5 (4.31) | 35.8 (9.24) | 23.1 (7.40) |
| **Assam** | 5.6 (3.35) | 4.3 (2.78) | 10.9 (2.85) | 10.3 (2.26) | 8.4 (2.86) | 9.3 (3.07) |
| **Bihar** | 18.9 (5.85) | 13.8 (5.63) | 18.2 (3.33) | 17.6 (3.19) | 17.6 (3.47) | 12.7 (2.66) |
| **Chhattisgarh** | 5.2 (3.68) | 5.5 (4.30) | 8.0 (2.41) | 5.2 (1.45) | 13.8 (2.71) | 10.0 (2.28) |
| **Delhi** | 3.4 (1.89) | 5.0 (2.52) | 3.4 (1.20) | 3.1 (1.07) | 9.2 (2.71) | 6.2 (2.29) |
| **Gujrat** | 5.3 (2.77) | 10.6 (5.08) | 5.5 (1.83) | 5.7 (1.81) | 10.8 (3.09) | 11.9 (2.96) |
| **Haryana** | 4.3 (4.01) | 7.4 (6.04) | 5.4 (1.80) | 4.2 (1.48) | 10.7 (2.63) | 5.9 (1.82) |
| **Himachal Pradesh** | 2.3 (2.57) | 6.1 (5.55) | 2.2 (1.30) | 3.8 (1.71) | 4.8 (2.21) | 8.2 (3.06) |
| **Jammu & Kashmir** | 8.6 (3.50) | 11.8 (4.50) | 3.5 (1.32) | 6.2 (2.63) | 8.7 (2.84) | 9.3 (3.62) |
| **Jharkhand** | 19.9 (6.31) | 20.1 (7.28) | 13.6 (2.53) | 17.2 (2.60) | 16.7 (3.14) | 20.0 (2.83) |
| **Karnataka** | 7.6 (3.55) | 8.2 (4.16) | 7.2 (1.97) | 7.3 (1.99) | 10.7 (3.25) | 9.9 (3.15) |
| **Kerala** | 7.9 (5.14) | 8.8 (5.72) | 3.3 (1.26) | 3.5 (1.19) | 5.2 (1.79) | 5.1 (1.82) |
| **Madhya Pradesh** | 12.6 (3.82) | 12.8 (4.17) | 11.6 (2.37) | 9.5 (1.85) | 17.7 (3.17) | 17.7 (2.93) |
| **Maharashtra** | 7.4 (2.36) | 8.6 (2.69) | 6.3 (1.29) | 8.5 (1.59) | 10.1 (2.22) | 14.7 (2.55) |
| **Manipur** | 19.0 (5.17) | 17.5 (5.10) | 20.4 (4.51) | 16.8 (3.85) | 25.8 (4.98) | 19.9 (4.25) |
| **Meghalaya** | 12.7 (6.73) | 15.0 (8.20) | 13.8 (4.74) | 9.2 (4.27) | 12.3 (4.72) | 8.0 (3.83) |
| **Mizoram** | 1.8 (2.10) | 2.5 (2.95) | 0.9 (0.51) | 0.6 (0.36) | 6.0 (2.74) | 2.3 (1.35) |
| **Nagaland** | 4.4 (2.75) | 8.8 (5.34) | 10.7 (4.01) | 5.6 (2.23) | 11.5 (4.32) | 8.2 (2.89) |
| **Orissa** | 17.3 (6.54) | 21.2 (7.83) | 12.8 (2.64) | 11.3 (2.05) | 14.9 (2.94) | 15.9 (2.89) |
| **Punjab** | 10.4 (9.08) | 14.6 (11.61) | 4.7 (1.12) | 6.2 (1.23) | 8.8 (1.76) | 8.0 (1.51) |
| **Rajasthan** | 8.7 (3.74) | 11.9 (4.99) | 5.7 (1.82) | 7.7 (1.88) | 13.5 (3.63) | 13.2 (2.60) |
| **Sikkim** | 0 (0.0) | 21.5 (12.11) | 0 (0.0) | 9.2 (3.13) | 18.5 (10.12) | 13.9 (4.10) |
| **Tamil Nadu** | 3.1 (1.72) | 5.6 (2.92) | 1.6 (0.56) | 2.8 (0.66) | 4.6 (1.26) | 6.1 (1.39) |
| **Telangana** | 1.4 (1.84) | 5.8 (6.43) | 1.4 (0.87) | 1.5 (1.08) | 6.5 (3.62) | 4.7 (3.25) |
| **Tripura** | 1.3 (2.15) | 1.7 (2.20) | 1.7 (1.14) | 0.7 (0.53) | 3.8 (2.46) | 1.4 (1.42) |
| **Uttar Pradesh** | 12.1 (2.55) | 14.2 (3.41) | 11.0 (1.53) | 10.8 (1.21) | 17.0 (2.52) | 14.4 (2.29) |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Uttaranchal** | 6.4 (5.36) | 4.0 (4.06) | 7.1 (2.93) | 4.1 (1.83) | 7.5 (3.24) | 9.5 (3.05) |
| **West Bengal** | 12.0 (3.19) | 14.8 (4.19) | 12.0 (2.28) | 13.3 (2.22) | 14.1 (2.83) | 12.3 (2.17) |

**Appendix Table 42** Urban state estimates of poverty rate (in percentages) for 2022/23 based on the imputation out of CES Type 1 2011/12 into HCES 2022/23 at the state-level. Each column represents a different approach, state-model describes models that not only differ in the coefficient, but also in their variable selection between states. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| State | Economic Reasoning All | Economic Reasoning All + SFE | Economic Reasoning Demographics | Economic Reasoning Demographics + SFE | LASSO All | LASSO All+ SFE | LASSO Demographics | LASSO Demographics + SFE | LASSO for PLFS | LASSO for PLFS + SFE |
|---|---|---|---|---|---|---|---|---|---|---|
| Andhra Pradesh | 8.6 (1.98) | 4.6 (1.33) | 9.2 (2.21) | 4.2 (1.23) | 6.7 (1.56) | 3.0 (0.91) | 10.2 (2.43) | 5.1 (1.47) | 26.2 (4.78) | 11.4 (2.65) |
| **Arunachal Pradesh** | 22.7 (3.81) | 17.2 (3.65) | 23.1 (4.13) | 17.0 (3.55) | 24.8 (3.66) | 11.9 (2.70) | 28.0 (4.42) | 18.3 (3.89) | 47.2 (5.94) | 30.8 (4.95) |
| **Assam** | 17.0 (2.31) | 25.7 (3.16) | 15.1 (2.18) | 24.6 (3.19) | 19.8 (2.44) | 24.0 (2.93) | 16.9 (2.38) | 26.8 (3.29) | 25.1 (3.24) | 39.3 (3.95) |
| **Bihar** | 28.3 (3.27) | 29.7 (3.39) | 24.7 (3.34) | 26.4 (3.37) | 27.0 (3.11) | 29.6 (3.43) | 26.5 (3.43) | 28.7 (3.35) | 34.5 (4.13) | 43.5 (3.81) |
| **Chhattisgarh** | 15.9 (2.55) | 33.2 (4.15) | 16.6 (2.59) | 34.2 (4.42) | 12.6 (1.89) | 25.0 (3.42) | 18.1 (2.83) | 37.0 (4.43) | 25.4 (3.54) | 44.2 (4.83) |
| **Delhi** | 30.7 (12.33) | 8.9 (7.47) | 35.4 (13.92) | 9.9 (8.02) | 11.7 (6.78) | 4.7 (4.51) | 36.9 (14.05) | 11.1 (8.44) | 59.7 (15.64) | 18.4 (11.68) |
| **Gujrat** | 26.7 (2.70) | 17.5 (2.66) | 25.0 (2.76) | 16.3 (2.56) | 18.8 (2.08) | 12.6 (2.00) | 26.1 (2.92) | 17.9 (2.68) | 37.9 (3.83) | 27.0 (3.49) |
| **Haryana** | 21.2 (3.13) | 4.9 (1.34) | 22.5 (3.33) | 4.8 (1.31) | 9.6 (1.78) | 2.8 (0.86) | 25.1 (3.57) | 5.7 (1.52) | 38.3 (4.67) | 9.7 (2.39) |
| **Himachal Pradesh** | 13.1 (3.37) | 5.4 (2.11) | 15.6 (3.91) | 5.8 (2.30) | 7.7 (2.19) | 2.6 (1.19) | 17.4 (4.26) | 7.0 (2.56) | 25.0 (5.65) | 8.3 (2.85) |
| **Jammu & Kashmir** | 18.5 (3.35) | 11.5 (2.72) | 15.9 (3.25) | 8.7 (2.26) | 16.9 (3.00) | 7.8 (1.94) | 17.3 (3.53) | 8.6 (2.18) | 31.3 (5.42) | 15.0 (3.25) |
| **Jharkhand** | 20.5 (3.04) | 34.0 (4.14) | 17.2 (2.78) | 30.0 (4.15) | 18.7 (2.69) | 30.4 (3.81) | 18.8 (2.93) | 32.2 (4.15) | 25.5 (4.04) | 41.9 (4.84) |
| **Karnataka** | 8.9 (1.56) | 5.7 (1.26) | 9.4 (1.78) | 5.5 (1.22) | 7.3 (1.33) | 4.2 (1.00) | 10.0 (1.84) | 6.1 (1.34) | 25.4 (3.78) | 15.4 (2.54) |
| **Kerala** | 12.3 (3.01) | 3.8 (1.29) | 13.4 (3.12) | 3.1 (1.10) | 5.3 (1.47) | 1.5 (0.58) | 14.8 (3.33) | 3.9 (1.28) | 22.9 (4.81) | 6.2 (1.76) |
| **Madhya Pradesh** | 18.9 (1.94) | 27.0 (2.50) | 18.6 (2.07) | 26.7 (2.65) | 13.4 (1.54) | 20.6 (2.14) | 19.9 (2.22) | 29.1 (2.63) | 28.1 (2.86) | 36.6 (2.91) |
| **Maharashtra** | 16.2 (2.12) | 12.4 (1.76) | 16.8 (2.20) | 12.8 (1.86) | 13.0 (1.62) | 9.3 (1.35) | 17.4 (2.29) | 13.8 (1.93) | 31.8 (3.76) | 23.3 (2.91) |
| **Manipur** | 21.6 (4.56) | 23.8 (5.04) | 19.4 (4.61) | 21.6 (4.95) | 22.4 (4.12) | 20.5 (4.23) | 23.5 (5.15) | 23.4 (5.34) | 42.8 (7.23) | 38.6 (6.73) |
| **Meghalaya** | 37.5 (6.53) | 25.5 (6.31) | 33.7 (6.98) | 23.1 (6.01) | 41.5 (6.19) | 23.2 (5.60) | 40.6 (7.21) | 25.4 (6.50) | 50.5 (8.51) | 34.1 (7.35) |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Mizoram** | 18.1 (4.96) | 13.6 (4.39) | 20.2 (5.49) | 16.9 (5.15) | 14.6 (3.63) | 9.3 (2.90) | 24.6 (6.23) | 18.4 (5.55) | 49.1 (8.61) | 33.6 (7.60) |
| **Nagaland** | 34.1 (5.14) | 23.6 (4.90) | 31.2 (5.55) | 21.5 (4.67) | 38.4 (4.83) | 16.6 (3.68) | 38.0 (5.79) | 21.3 (4.74) | 52.4 (6.82) | 19.6 (4.58) |
| **Orissa** | 13.5 (1.94) | 32.2 (3.30) | 12.8 (2.14) | 30.8 (3.04) | 12.2 (1.71) | 26.0 (2.78) | 13.8 (2.19) | 32.1 (3.36) | 19.4 (3.01) | 41.0 (3.73) |
| **Punjab** | 11.8 (2.43) | 1.6 (0.63) | 12.7 (2.71) | 1.3 (0.56) | 5.0 (1.37) | 1.2 (0.53) | 16.0 (3.15) | 1.6 (0.61) | 33.1 (5.11) | 3.9 (1.25) |
| **Rajasthan** | 27.9 (2.94) | 14.3 (2.03) | 25.3 (2.90) | 12.9 (2.08) | 17.1 (1.94) | 9.0 (1.42) | 27.0 (3.04) | 14.5 (2.16) | 36.4 (3.89) | 20.3 (2.71) |
| **Sikkim** | 8.2 (3.70) | 11.5 (4.76) | 10.3 (4.48) | 14.8 (5.51) | 11.6 (4.24) | 9.9 (4.08) | 11.7 (4.99) | 16.3 (6.11) | 32.5 (9.54) | 28.0 (8.23) |
| **Tamil Nadu** | 10.3 (1.61) | 8.0 (1.49) | 12.0 (2.01) | 7.6 (1.43) | 6.4 (1.19) | 4.8 (0.96) | 12.9 (2.07) | 8.6 (1.59) | 29.6 (3.76) | 16.7 (2.48) |
| **Telangana** | 7.1 (1.44) | 3.5 (1.08) | 7.9 (1.62) | 3.5 (1.04) | 4.9 (1.06) | 2.2 (0.80) | 8.7 (1.77) | 4.5 (1.40) | 28.1 (3.64) | 13.6 (3.00) |
| **Tripura** | 12.1 (3.12) | 11.3 (3.87) | 11.7 (3.28) | 10.5 (3.61) | 11.4 (2.82) | 8.5 (3.09) | 13.2 (3.55) | 12.1 (4.05) | 19.1 (4.99) | 17.9 (5.39) |
| **Uttar Pradesh** | 15.4 (1.51) | 17.5 (1.65) | 13.5 (1.50) | 15.3 (1.53) | 12.1 (1.21) | 14.5 (1.39) | 15.1 (1.58) | 17.1 (1.62) | 24.1 (2.44) | 29.7 (2.26) |
| **Uttaranchal** | 13.8 (3.67) | 8.4 (2.68) | 15.2 (3.94) | 8.2 (2.77) | 10.8 (2.39) | 6.6 (1.99) | 16.6 (4.30) | 9.5 (2.97) | 27.3 (6.25) | 15.0 (4.27) |
| **West Bengal** | 13.1 (2.22) | 15.3 (2.68) | 12.7 (2.38) | 15.2 (2.75) | 12.8 (2.09) | 13.1 (2.26) | 13.8 (2.43) | 17.1 (2.75) | 18.0 (3.30) | 23.7 (3.57) |

**Appendix Table 43** Rural state estimates of poverty rate (in percentages) for 2022/23 based on the imputation out of CES Type 2 2011/12 into HCES 2022/23 at the sector-level. Each column represents a different approach: LASSO Demo describes a LASSO approach including only demographics, LASSO asset includes both assets and demographics, for PLFS denotes an approach that was initially drawn up to be able to impute into PLFS, ER stands for economically reasoned models and SFE for inclusion of State-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| State | Economic Reasoning All | Economic Reasoning All + SFE | Economic Reasoning Demographics | Economic Reasoning Demographics + SFE | LASSO All | LASSO All+ SFE | LASSO Demographics | LASSO Demographics + SFE | LASSO for PLFS | LASSO for PLFS + SFE |
|---|---|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 12.9 (2.40) | 10.1 (2.34) | 16.3 (3.21) | 13.6 (3.31) | 10.0 (1.98) | 7.7 (1.90) | 14.0 (2.77) | 11.6 (2.77) | 28.0 (4.37) | 21.5 (4.39) |
| **Arunachal Pradesh** | 11.1 (2.47) | 13.5 (3.31) | 13.8 (3.42) | 20.6 (5.25) | 12.0 (2.48) | 10.8 (2.79) | 12.9 (3.08) | 17.5 (4.63) | 33.9 (5.48) | 35.5 (6.76) |
| **Assam** | 17.9 (2.69) | 21.5 (3.61) | 13.9 (2.92) | 19.8 (4.19) | 18.9 (2.48) | 20.1 (3.39) | 11.3 (2.35) | 16.9 (3.55) | 24.6 (4.20) | 31.5 (5.45) |
| **Bihar** | 31.2 (3.40) | 38.6 (4.02) | 25.1 (3.61) | 36.6 (4.58) | 28.5 (3.01) | 35.3 (3.71) | 21.8 (3.24) | 32.7 (4.22) | 35.9 (4.67) | 50.9 (5.05) |
| **Chhattisgarh** | 17.0 (2.94) | 22.4 (3.88) | 17.6 (3.60) | 22.6 (4.58) | 10.6 (2.15) | 17.3 (3.23) | 14.5 (2.99) | 19.4 (4.25) | 25.6 (4.81) | 34.4 (5.72) |
| **Delhi** | 15.9 (3.62) | 13.2 (3.99) | 22.3 (4.69) | 14.9 (4.92) | 11.2 (2.71) | 9.5 (2.90) | 20.5 (4.41) | 13.4 (4.47) | 34.1 (5.62) | 23.4 (6.29) |
| **Gujrat** | 19.0 (3.19) | 16.6 (3.07) | 22.9 (4.16) | 19.2 (4.16) | 17.5 (2.51) | 13.2 (2.46) | 19.5 (3.61) | 16.3 (3.66) | 35.1 (5.44) | 33.8 (5.54) |
| **Haryana** | 19.7 (3.08) | 12.5 (2.76) | 27.0 (4.13) | 13.5 (3.17) | 13.9 (2.35) | 9.9 (2.12) | 23.3 (3.50) | 10.9 (2.53) | 38.2 (4.72) | 20.4 (4.12) |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Himachal Pradesh** | 7.9 (2.35) | 6.4 (2.29) | 11.0 (3.19) | 7.7 (2.80) | 7.6 (2.22) | 4.8 (1.86) | 9.3 (2.84) | 6.6 (2.52) | 20.6 (4.83) | 14.7 (4.35) |
| **Jammu & Kashmir** | 10.6 (2.61) | 8.1 (2.49) | 14.7 (4.14) | 11.5 (3.93) | 9.9 (2.26) | 7.1 (2.04) | 12.6 (3.64) | 9.5 (3.44) | 28.0 (6.22) | 19.7 (5.28) |
| **Jharkhand** | 22.8 (3.27) | 25.6 (4.13) | 21.1 (3.62) | 24.6 (4.69) | 19.5 (2.75) | 22.6 (3.54) | 18.2 (3.28) | 21.4 (4.20) | 28.7 (4.73) | 32.2 (6.05) |
| **Karnataka** | 15.2 (2.41) | 12.7 (2.17) | 17.4 (3.28) | 15.3 (3.14) | 12.3 (1.74) | 9.8 (1.66) | 14.8 (2.95) | 13.0 (2.67) | 29.5 (4.90) | 25.6 (4.37) |
| **Kerala** | 10.8 (2.26) | 6.5 (1.77) | 17.8 (3.44) | 10.2 (2.62) | 8.7 (1.78) | 4.4 (1.19) | 14.9 (2.90) | 8.2 (2.09) | 25.3 (4.43) | 17.7 (3.70) |
| **Madhya Pradesh** | 22.0 (2.50) | 25.8 (2.91) | 22.4 (3.04) | 26.9 (3.46) | 15.0 (1.77) | 19.8 (2.36) | 19.2 (2.44) | 23.5 (3.00) | 34.4 (3.66) | 40.8 (4.21) |
| **Maharashtra** | 20.5 (2.98) | 14.6 (2.43) | 21.6 (3.70) | 16.7 (3.21) | 19.1 (2.63) | 12.8 (2.15) | 19.2 (3.23) | 14.4 (2.67) | 34.3 (4.63) | 26.8 (4.06) |
| **Manipur** | 26.1 (4.85) | 39.9 (6.17) | 20.3 (5.96) | 42.9 (8.92) | 22.4 (4.33) | 35.7 (6.12) | 17.7 (5.37) | 39.3 (8.95) | 37.2 (7.97) | 58.3 (9.08) |
| **Meghalaya** | 25.0 (5.07) | 25.6 (5.78) | 23.5 (6.20) | 23.2 (7.06) | 26.9 (5.15) | 24.1 (5.59) | 20.7 (5.65) | 20.0 (6.32) | 37.4 (8.45) | 32.6 (9.04) |
| **Mizoram** | 14.2 (4.29) | 12.7 (4.16) | 23.4 (6.91) | 21.3 (6.61) | 10.9 (3.12) | 7.6 (2.59) | 21.0 (6.32) | 18.6 (6.06) | 40.0 (8.36) | 30.1 (7.86) |
| **Nagaland** | 18.9 (3.55) | 20.9 (4.23) | 18.7 (4.20) | 30.4 (6.33) | 22.6 (3.90) | 20.1 (4.17) | 16.8 (3.99) | 26.5 (6.03) | 38.9 (6.88) | 36.6 (7.27) |
| **Orissa** | 18.8 (2.61) | 27.1 (3.56) | 17.8 (2.82) | 26.0 (4.20) | 15.2 (2.12) | 24.3 (3.27) | 14.9 (2.34) | 23.1 (3.82) | 23.2 (3.70) | 36.0 (5.32) |
| **Punjab** | 14.4 (2.74) | 11.3 (2.54) | 20.8 (3.78) | 12.2 (2.92) | 10.6 (2.05) | 9.1 (1.88) | 19.2 (3.45) | 10.2 (2.38) | 35.2 (5.00) | 20.5 (3.89) |
| **Rajasthan** | 20.4 (2.71) | 15.6 (2.52) | 25.0 (3.64) | 18.1 (3.39) | 14.6 (1.95) | 11.8 (1.92) | 21.3 (3.14) | 15.2 (2.82) | 37.8 (4.54) | 28.8 (4.42) |
| **Sikkim** | 8.8 (4.15) | 8.6 (4.98) | 10.1 (5.51) | 8.5 (5.70) | 11.0 (4.60) | 9.8 (5.32) | 9.3 (5.08) | 7.6 (5.30) | 25.9 (10.33) | 20.0 (9.87) |
| **Tamil Nadu** | 9.9 (1.67) | 9.0 (1.73) | 14.4 (2.57) | 13.9 (2.72) | 6.9 (1.09) | 6.5 (1.17) | 12.2 (1.98) | 11.6 (2.15) | 25.2 (3.44) | 23.4 (3.48) |
| **Telangana** | 9.2 (2.78) | 6.7 (2.47) | 14.1 (4.56) | 11.0 (4.05) | 6.0 (1.95) | 4.8 (1.90) | 12.0 (3.98) | 9.2 (3.73) | 26.0 (6.57) | 19.2 (6.32) |
| **Tripura** | 16.3 (4.63) | 15.1 (5.07) | 15.1 (5.33) | 17.9 (6.50) | 17.1 (4.62) | 12.2 (4.36) | 11.9 (4.58) | 14.6 (5.64) | 23.2 (7.63) | 30.1 (8.96) |
| **Uttar Pradesh** | 22.1 (2.09) | 23.7 (2.43) | 24.5 (2.64) | 25.5 (2.95) | 17.4 (1.56) | 19.5 (1.79) | 21.3 (2.17) | 22.2 (2.41) | 37.7 (3.29) | 40.0 (3.41) |
| **Uttaranchal** | 16.3 (4.42) | 16.5 (4.75) | 18.6 (5.52) | 16.2 (5.64) | 13.1 (3.74) | 13.9 (4.07) | 15.8 (5.12) | 13.4 (5.03) | 30.7 (7.75) | 27.7 (7.46) |
| **West Bengal** | 20.7 (2.88) | 18.8 (3.14) | 19.0 (3.11) | 20.4 (3.64) | 21.8 (2.61) | 16.5 (2.63) | 15.8 (2.45) | 17.3 (3.04) | 26.1 (4.09) | 32.0 (4.74) |

**Appendix Table 44** Urban state estimates of poverty rate (in percentages) for 2022/23 based on the imputation out of CES Type 2 2011/12 into HCES 2022/23 at the sector-level. Each column represents a different approach: LASSO Demo describes a LASSO approach including only demographics, LASSO asset includes both assets and demographics, for PLFS denotes an approach that was initially drawn up to be able to impute into PLFS, ER stands for economically reasoned models and SFE for inclusion of State-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| State | Dataset | Sector | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | Economic Reasoning | Urban | 14.0 (4.01) | 11.8 (2.77) | 10.9 (2.67) | 11.4 (2.65) | 10.1 (2.59) | 10.0 (2.31) |
| **Andhra Pradesh** | Economic Reasoning | Rural | 18.9 (3.94) | 16.3 (3.65) | 15.3 (3.51) | 15.6 (3.60) | 13.5 (2.99) | 13.6 (3.10) |
| **Andhra Pradesh** | Economic Reasoning | Total | 17.3 (2.95) | 14.8 (2.60) | 13.9 (2.54) | 14.2 (2.57) | 12.5 (2.22) | 12.5 (2.28) |
| **Arunachal Pradesh** | Economic Reasoning | Urban | 18.4 (4.54) | 16.1 (4.15) | 17.3 (4.13) | 15.2 (4.62) | 18.4 (3.75) | 16.1 (3.92) |
| **Arunachal Pradesh** | Economic Reasoning | Rural | 22.9 (4.55) | 20.7 (4.14) | 22.8 (5.26) | 20.7 (4.26) | 23.5 (4.41) | 21.7 (4.36) |
| **Arunachal Pradesh** | Economic Reasoning | Total | 22.2 (3.90) | 19.9 (3.51) | 21.7 (4.33) | 19.7 (3.57) | 22.7 (3.72) | 20.9 (3.74) |
| **Assam** | Economic Reasoning | Urban | 11.2 (3.11) | 11.5 (3.04) | 10.5 (2.94) | 8.5 (2.63) | 11.5 (3.21) | 10.4 (2.66) |
| **Assam** | Economic Reasoning | Rural | 18.4 (3.12) | 17.4 (3.03) | 19.0 (3.36) | 16.5 (3.15) | 22.3 (3.17) | 23.9 (23.81) |
| **Assam** | Economic Reasoning | Total | 17.7 (2.82) | 16.8 (2.73) | 18.0 (2.97) | 15.5 (2.78) | 21.2 (2.86) | 23.4 (23.03) |
| **Bihar** | Economic Reasoning | Urban | 19.0 (3.26) | 18.4 (3.29) | 19.7 (3.91) | 18.0 (3.63) | 19.1 (3.16) | 16.1 (3.08) |
| **Bihar** | Economic Reasoning | Rural | 21.1 (2.99) | 22.0 (2.98) | 21.4 (3.00) | 19.7 (2.86) | 21.5 (2.88) | 21.7 (2.84) |
| **Bihar** | Economic Reasoning | Total | 20.9 (2.73) | 21.7 (2.72) | 21.2 (2.71) | 19.5 (2.62) | 21.3 (2.66) | 21.2 (2.63) |
| **Chhattisgarh** | Economic Reasoning | Urban | 11.9 (3.52) | 10.0 (2.99) | 7.7 (2.30) | 10.0 (3.01) | 9.6 (2.92) | 8.7 (2.87) |
| **Chhattisgarh** | Economic Reasoning | Rural | 19.7 (3.34) | 17.5 (3.33) | 18.7 (3.34) | 16.8 (3.06) | 17.6 (3.05) | 18.6 (3.24) |
| **Chhattisgarh** | Economic Reasoning | Total | 18.2 (2.79) | 16.1 (2.77) | 16.7 (2.76) | 15.5 (2.54) | 16.1 (2.54) | 16.7 (2.69) |
| **Delhi** | Economic Reasoning | Urban | 22.8 (7.82) | 19.5 (6.65) | 17.0 (5.41) | 18.9 (5.59) | 18.0 (4.79) | 18.6 (5.04) |
| **Delhi** | Economic Reasoning | Rural | 55.9 (19.62) | 53.8 (24.42) | 44.3 (19.34) | 35.0 (16.22) | 30.8 (14.53) | 32.9 (16.41) |
| **Delhi** | Economic Reasoning | Total | 23.8 (7.60) | 21.2 (6.44) | 18.0 (5.26) | 19.3 (5.45) | 18.4 (4.65) | 19.0 (4.93) |
| **Gujrat** | Economic Reasoning | Urban | 19.5 (4.00) | 16.8 (3.73) | 17.6 (3.50) | 17.7 (3.73) | 20.4 (3.83) | 20.0 (4.21) |
| **Gujrat** | Economic Reasoning | Rural | 24.6 (3.87) | 26.1 (4.18) | 24.5 (3.95) | 25.3 (3.74) | 23.2 (3.54) | 23.2 (3.53) |
| **Gujrat** | Economic Reasoning | Total | 22.5 (2.82) | 22.1 (2.87) | 21.6 (2.71) | 22.2 (2.69) | 22.0 (2.61) | 21.8 (2.71) |
| **Haryana** | Economic Reasoning | Urban | 23.6 (3.79) | 20.8 (3.46) | 22.5 (3.83) | 22.5 (4.06) | 23.4 (3.75) | 22.6 (4.14) |
| **Haryana** | Economic Reasoning | Rural | 29.5 (4.53) | 29.0 (4.38) | 28.9 (4.53) | 27.0 (4.38) | 27.0 (4.44) | 26.4 (4.17) |
| **Haryana** | Economic Reasoning | Total | 27.5 (3.25) | 26.4 (3.17) | 26.6 (3.23) | 25.5 (3.22) | 25.8 (3.18) | 25.1 (3.09) |
| **Himachal Pradesh** | Economic Reasoning | Urban | 7.1 (3.21) | 4.8 (2.69) | 8.4 (4.92) | 5.0 (2.50) | 5.0 (2.62) | 6.4 (3.64) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Himachal Pradesh** | Economic Reasoning | Rural | 13.9 (3.81) | 12.6 (3.63) | 13.0 (3.75) | 11.8 (3.60) | 12.4 (3.45) | 10.9 (2.94) |
| **Himachal Pradesh** | Economic Reasoning | Total | 13.2 (3.44) | 11.8 (3.27) | 12.4 (3.32) | 11.2 (3.27) | 11.6 (3.13) | 10.4 (2.67) |
| **Jammu & Kashmir** | Economic Reasoning | Urban | 11.2 (3.60) | 10.4 (3.03) | 10.9 (3.19) | 9.8 (2.95) | 12.8 (3.73) | 10.7 (2.89) |
| **Jammu & Kashmir** | Economic Reasoning | Rural | 15.9 (3.19) | 14.3 (2.95) | 16.4 (3.04) | 15.6 (3.08) | 16.8 (3.16) | 16.9 (3.38) |
| **Jammu & Kashmir** | Economic Reasoning | Total | 14.9 (2.62) | 13.5 (2.41) | 15.3 (2.52) | 14.5 (2.54) | 16.1 (2.65) | 15.8 (2.85) |
| **Jharkhand** | Economic Reasoning | Urban | 19.1 (3.80) | 17.4 (4.89) | 18.7 (4.08) | 18.3 (4.17) | 17.8 (4.02) | 17.9 (3.98) |
| **Jharkhand** | Economic Reasoning | Rural | 24.1 (3.88) | 24.8 (3.92) | 22.3 (3.55) | 23.3 (3.98) | 24.4 (3.80) | 23.0 (3.76) |
| **Jharkhand** | Economic Reasoning | Total | 23.1 (3.23) | 23.3 (3.26) | 21.5 (2.94) | 22.2 (3.28) | 23.1 (3.15) | 22.1 (3.18) |
| **Karnataka** | Economic Reasoning | Urban | 16.6 (2.99) | 15.0 (2.98) | 11.9 (2.94) | 13.6 (2.75) | 13.9 (2.69) | 13.9 (2.52) |
| **Karnataka** | Economic Reasoning | Rural | 26.5 (3.74) | 23.6 (3.51) | 24.7 (3.67) | 25.2 (3.60) | 23.8 (3.48) | 24.5 (3.58) |
| **Karnataka** | Economic Reasoning | Total | 22.6 (2.57) | 20.3 (2.45) | 19.5 (2.48) | 20.9 (2.49) | 20.3 (2.43) | 20.7 (2.46) |
| **Kerala** | Economic Reasoning | Urban | 6.4 (2.03) | 5.1 (1.67) | 5.6 (1.98) | 4.8 (1.62) | 5.4 (1.65) | 4.5 (1.45) |
| **Kerala** | Economic Reasoning | Rural | 13.5 (3.42) | 10.9 (2.89) | 10.5 (2.70) | 11.0 (2.77) | 10.3 (2.64) | 10.5 (2.86) |
| **Kerala** | Economic Reasoning | Total | 10.4 (2.12) | 8.2 (1.74) | 8.1 (1.68) | 8.1 (1.66) | 7.9 (1.56) | 7.7 (1.67) |
| **Madhya Pradesh** | Economic Reasoning | Urban | 12.4 (2.43) | 11.7 (2.12) | 11.2 (2.73) | 11.5 (2.20) | 10.5 (2.02) | 10.7 (2.13) |
| **Madhya Pradesh** | Economic Reasoning | Rural | 20.9 (2.69) | 20.1 (2.60) | 20.8 (2.85) | 20.3 (2.62) | 21.0 (2.56) | 18.8 (2.57) |
| **Madhya Pradesh** | Economic Reasoning | Total | 18.8 (2.11) | 17.9 (2.00) | 18.2 (2.21) | 17.9 (2.00) | 18.4 (2.00) | 16.8 (2.00) |
| **Maharashtra** | Economic Reasoning | Urban | 16.0 (2.73) | 16.2 (2.78) | 14.9 (2.72) | 15.2 (2.53) | 14.8 (2.65) | 13.3 (2.57) |
| **Maharashtra** | Economic Reasoning | Rural | 27.1 (3.06) | 26.2 (2.94) | 27.7 (3.18) | 26.1 (3.12) | 26.9 (3.03) | 25.6 (2.91) |
| **Maharashtra** | Economic Reasoning | Total | 22.3 (2.10) | 22.0 (2.07) | 22.3 (2.17) | 21.8 (2.13) | 21.7 (2.07) | 20.5 (2.00) |
| **Manipur** | Economic Reasoning | Urban | 19.4 (5.13) | 19.2 (5.05) | 19.9 (5.30) | 19.0 (4.97) | 21.6 (5.50) | 22.6 (5.73) |
| **Manipur** | Economic Reasoning | Rural | 33.6 (7.04) | 32.5 (7.22) | 31.7 (6.94) | 29.6 (6.68) | 34.4 (6.64) | 32.8 (6.03) |
| **Manipur** | Economic Reasoning | Total | 29.4 (5.19) | 28.6 (5.32) | 28.3 (5.19) | 26.6 (4.99) | 31.0 (5.09) | 29.7 (4.56) |
| **Meghalaya** | Economic Reasoning | Urban | 18.1 (6.50) | 17.1 (5.75) | 19.7 (6.64) | 20.2 (6.98) | 19.5 (5.91) | 18.0 (5.91) |
| **Meghalaya** | Economic Reasoning | Rural | 30.5 (7.55) | 30.7 (7.25) | 39.6 (7.70) | 36.9 (8.22) | 38.4 (7.05) | 38.3 (7.10) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Meghalaya** | Economic Reasoning | Total | 28.2 (6.28) | 28.6 (6.20) | 36.2 (6.51) | 34.0 (6.88) | 35.7 (6.10) | 35.3 (6.09) |
| **Mizoram** | Economic Reasoning | Urban | 15.7 (5.74) | 12.4 (4.82) | 12.3 (4.66) | 13.6 (5.44) | 15.8 (5.70) | 16.6 (5.47) |
| **Mizoram** | Economic Reasoning | Rural | 33.7 (7.94) | 28.6 (7.48) | 26.3 (7.66) | 29.2 (6.92) | 34.7 (7.04) | 32.6 (6.86) |
| **Mizoram** | Economic Reasoning | Total | 25.0 (4.96) | 21.0 (4.56) | 19.7 (4.60) | 21.7 (4.43) | 26.0 (4.62) | 25.2 (4.47) |
| **Nagaland** | Economic Reasoning | Urban | 23.3 (5.95) | 21.4 (5.83) | 19.5 (5.54) | 19.1 (5.61) | 21.2 (5.74) | 22.9 (5.69) |
| **Nagaland** | Economic Reasoning | Rural | 43.6 (6.41) | 45.9 (7.28) | 40.1 (7.97) | 37.2 (7.03) | 48.0 (6.98) | 49.9 (6.95) |
| **Nagaland** | Economic Reasoning | Total | 37.4 (4.81) | 38.9 (5.47) | 33.8 (5.78) | 32.0 (5.27) | 41.3 (5.43) | 43.0 (5.37) |
| **Orissa** | Economic Reasoning | Urban | 7.8 (2.19) | 6.9 (2.23) | 7.8 (2.28) | 7.6 (2.27) | 7.6 (2.19) | 6.5 (1.97) |
| **Orissa** | Economic Reasoning | Rural | 12.9 (2.27) | 13.1 (2.41) | 12.3 (2.33) | 12.2 (2.26) | 13.0 (2.39) | 12.2 (2.32) |
| **Orissa** | Economic Reasoning | Total | 12.1 (1.95) | 12.1 (2.07) | 11.6 (2.00) | 11.5 (1.95) | 12.2 (2.08) | 11.4 (2.01) |
| **Punjab** | Economic Reasoning | Urban | 18.8 (3.50) | 20.1 (3.75) | 19.0 (3.81) | 18.8 (3.48) | 18.3 (3.37) | 18.3 (3.14) |
| **Punjab** | Economic Reasoning | Rural | 19.9 (3.61) | 22.1 (4.13) | 22.7 (3.77) | 22.7 (3.91) | 22.7 (3.85) | 20.7 (3.66) |
| **Punjab** | Economic Reasoning | Total | 19.5 (2.60) | 21.3 (2.92) | 21.3 (2.75) | 21.2 (2.76) | 21.2 (2.78) | 19.8 (2.61) |
| **Rajasthan** | Economic Reasoning | Urban | 15.2 (3.06) | 14.0 (2.93) | 14.9 (3.19) | 13.6 (2.68) | 13.5 (2.43) | 13.0 (2.49) |
| **Rajasthan** | Economic Reasoning | Rural | 23.3 (3.18) | 22.1 (3.02) | 23.5 (3.20) | 22.8 (3.38) | 22.0 (2.99) | 22.4 (3.10) |
| **Rajasthan** | Economic Reasoning | Total | 21.4 (2.54) | 20.1 (2.39) | 21.3 (2.52) | 20.7 (2.69) | 19.8 (2.31) | 20.2 (2.43) |
| **Sikkim** | Economic Reasoning | Urban | 11.1 (6.56) | 11.4 (6.49) | 9.6 (6.17) | 12.3 (6.36) | 10.7 (6.33) | 10.3 (6.32) |
| **Sikkim** | Economic Reasoning | Rural | 16.1 (7.91) | 16.5 (8.06) | 15.3 (7.63) | 10.6 (6.48) | 13.9 (6.26) | 13.4 (5.84) |
| **Sikkim** | Economic Reasoning | Total | 14.7 (6.04) | 15.2 (6.18) | 13.8 (5.92) | 11.1 (5.01) | 13.2 (5.12) | 12.7 (4.80) |
| **Tamil Nadu** | Economic Reasoning | Urban | 9.1 (1.96) | 8.0 (1.88) | 8.2 (1.81) | 8.1 (1.73) | 7.1 (1.51) | 7.3 (1.47) |
| **Tamil Nadu** | Economic Reasoning | Rural | 14.2 (2.45) | 13.3 (2.44) | 13.1 (2.27) | 13.1 (2.34) | 12.6 (2.34) | 11.8 (2.15) |
| **Tamil Nadu** | Economic Reasoning | Total | 11.8 (1.60) | 10.8 (1.57) | 10.8 (1.47) | 10.9 (1.50) | 10.2 (1.47) | 9.9 (1.38) |
| **Telangana** | Economic Reasoning | Urban | 11.7 (3.70) | 10.4 (3.83) | 9.2 (3.19) | 10.2 (3.72) | 8.1 (3.49) | 7.0 (2.72) |
| **Telangana** | Economic Reasoning | Rural | 20.3 (5.18) | 19.4 (4.73) | 18.1 (3.98) | 18.2 (3.14) | 20.7 (3.31) | 19.4 (3.41) |
| **Telangana** | Economic Reasoning | Total | 16.8 (3.42) | 15.6 (3.18) | 14.5 (2.70) | 14.9 (2.40) | 16.3 (2.47) | 14.8 (2.37) |
| **Tripura** | Economic Reasoning | Urban | 10.6 (5.51) | 10.7 (5.84) | 12.1 (6.37) | 12.2 (6.22) | 10.3 (4.06) | 9.9 (4.60) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Tripura** | Economic Reasoning | Rural | 16.5 (7.77) | 13.5 (6.75) | 17.5 (8.24) | 19.5 (8.83) | 18.0 (4.72) | 15.6 (4.51) |
| **Tripura** | Economic Reasoning | Total | 15.3 (6.28) | 13.0 (5.60) | 16.4 (6.70) | 18.1 (7.20) | 16.7 (3.94) | 14.6 (3.81) |
| **Uttar Pradesh** | Economic Reasoning | Urban | 16.0 (2.15) | 15.9 (2.12) | 14.5 (1.95) | 14.3 (1.94) | 14.9 (1.93) | 14.9 (1.93) |
| **Uttar Pradesh** | Economic Reasoning | Rural | 18.9 (2.03) | 16.9 (1.90) | 17.3 (1.97) | 16.5 (1.86) | 16.7 (1.94) | 16.6 (1.97) |
| **Uttar Pradesh** | Economic Reasoning | Total | 18.3 (1.67) | 16.6 (1.54) | 16.7 (1.60) | 16.1 (1.54) | 16.4 (1.60) | 16.2 (1.63) |
| **Uttaranchal** | Economic Reasoning | Urban | 8.3 (3.05) | 9.5 (3.57) | 8.8 (3.46) | 7.3 (3.54) | 7.0 (2.76) | 9.7 (4.86) |
| **Uttaranchal** | Economic Reasoning | Rural | 17.7 (5.08) | 19.8 (4.91) | 18.6 (4.82) | 19.2 (4.80) | 15.6 (4.29) | 16.6 (4.71) |
| **Uttaranchal** | Economic Reasoning | Total | 15.0 (3.75) | 17.0 (3.68) | 16.0 (3.63) | 15.8 (3.56) | 13.4 (3.29) | 14.8 (3.71) |
| **West Bengal** | Economic Reasoning | Urban | 13.0 (2.76) | 12.2 (2.48) | 10.3 (2.32) | 10.7 (2.27) | 11.2 (2.27) | 11.7 (2.27) |
| **West Bengal** | Economic Reasoning | Rural | 16.2 (3.06) | 15.2 (2.91) | 13.8 (2.71) | 14.0 (2.73) | 14.1 (2.61) | 14.5 (2.59) |
| **West Bengal** | Economic Reasoning | Total | 15.3 (2.29) | 14.2 (2.13) | 12.7 (2.01) | 13.1 (2.05) | 13.3 (2.00) | 13.7 (1.96) |
| **Andhra Pradesh** | Economic Reasoning + SFE | Urban | 10.4 (3.50) | 8.6 (2.40) | 7.7 (2.21) | 8.3 (2.36) | 7.3 (2.33) | 7.3 (2.10) |
| **Andhra Pradesh** | Economic Reasoning + SFE | Rural | 11.7 (3.12) | 10.6 (2.94) | 9.9 (2.85) | 10.7 (2.99) | 9.3 (2.63) | 9.1 (2.66) |
| **Andhra Pradesh** | Economic Reasoning + SFE | Total | 11.2 (2.38) | 9.9 (2.11) | 9.2 (2.07) | 9.9 (2.15) | 8.7 (1.97) | 8.5 (1.97) |
| **Arunachal Pradesh** | Economic Reasoning + SFE | Urban | 19.4 (5.10) | 17.0 (4.59) | 17.8 (4.64) | 15.7 (4.79) | 19.3 (4.76) | 16.8 (4.56) |
| **Arunachal Pradesh** | Economic Reasoning + SFE | Rural | 22.3 (4.93) | 19.5 (4.38) | 22.6 (5.42) | 21.1 (4.53) | 25.5 (5.03) | 23.6 (5.08) |
| **Arunachal Pradesh** | Economic Reasoning + SFE | Total | 21.8 (4.23) | 19.1 (3.72) | 21.7 (4.48) | 20.1 (3.80) | 24.5 (4.25) | 22.6 (4.36) |
| **Assam** | Economic Reasoning + SFE | Urban | 15.6 (3.86) | 15.8 (3.89) | 14.5 (3.71) | 12.0 (3.48) | 15.8 (4.15) | 14.7 (3.48) |
| **Assam** | Economic Reasoning + SFE | Rural | 31.8 (4.36) | 30.3 (4.25) | 32.6 (4.38) | 29.5 (4.32) | 37.3 (4.48) | 42.1 (26.97) |
| **Assam** | Economic Reasoning + SFE | Total | 30.2 (3.95) | 28.8 (3.83) | 30.5 (3.88) | 27.4 (3.81) | 35.1 (4.05) | 41.2 (26.08) |
| **Bihar** | Economic Reasoning + SFE | Urban | 30.4 (4.09) | 29.6 (4.31) | 31.6 (4.75) | 29.3 (4.54) | 30.3 (4.11) | 26.9 (4.14) |
| **Bihar** | Economic Reasoning + SFE | Rural | 29.5 (3.64) | 30.5 (3.67) | 29.9 (3.71) | 28.2 (3.64) | 31.8 (3.69) | 31.5 (3.66) |
| **Bihar** | Economic Reasoning + SFE | Total | 29.6 (3.33) | 30.4 (3.36) | 30.1 (3.36) | 28.3 (3.33) | 31.7 (3.41) | 31.1 (3.39) |
| **Chhattisgarh** | Economic Reasoning + SFE | Urban | 17.4 (4.53) | 15.0 (4.10) | 11.5 (3.20) | 14.7 (4.07) | 13.8 (3.77) | 13.0 (3.76) |
| **Chhattisgarh** | Economic Reasoning + SFE | Rural | 35.1 (5.04) | 34.0 (4.96) | 34.4 (4.96) | 33.0 (4.76) | 34.5 (4.81) | 34.8 (4.91) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Chhattisgarh** | Economic Reasoning + SFE | Total | 31.8 (4.17) | 30.5 (4.11) | 30.3 (4.10) | 29.5 (3.93) | 30.7 (3.97) | 30.7 (4.06) |
| **Delhi** | Economic Reasoning + SFE | Urban | 12.8 (5.81) | 11.1 (5.16) | 9.0 (4.24) | 9.7 (4.15) | 9.2 (3.84) | 9.7 (4.22) |
| **Delhi** | Economic Reasoning + SFE | Rural | 23.4 (19.43) | 28.0 (25.24) | 15.3 (14.56) | 13.3 (12.65) | 11.2 (10.88) | 13.0 (12.39) |
| **Delhi** | Economic Reasoning + SFE | Total | 13.1 (5.66) | 11.9 (5.06) | 9.2 (4.11) | 9.8 (4.04) | 9.3 (3.73) | 9.8 (4.12) |
| **Gujrat** | Economic Reasoning + SFE | Urban | 10.8 (3.02) | 9.2 (2.67) | 9.9 (2.61) | 9.7 (2.79) | 11.6 (3.00) | 11.4 (3.25) |
| **Gujrat** | Economic Reasoning + SFE | Rural | 14.8 (3.39) | 16.3 (3.71) | 14.8 (3.48) | 14.8 (3.32) | 14.4 (3.24) | 14.3 (3.21) |
| **Gujrat** | Economic Reasoning + SFE | Total | 13.1 (2.36) | 13.3 (2.41) | 12.7 (2.29) | 12.7 (2.28) | 13.2 (2.25) | 13.1 (2.30) |
| **Haryana** | Economic Reasoning + SFE | Urban | 11.1 (2.79) | 9.4 (2.58) | 10.4 (2.86) | 10.4 (3.15) | 10.8 (2.82) | 10.5 (2.94) |
| **Haryana** | Economic Reasoning + SFE | Rural | 9.5 (2.95) | 9.5 (2.90) | 9.7 (3.03) | 8.5 (2.65) | 8.5 (2.67) | 8.3 (2.58) |
| **Haryana** | Economic Reasoning + SFE | Total | 10.1 (2.17) | 9.5 (2.13) | 9.9 (2.21) | 9.1 (2.05) | 9.3 (2.00) | 9.0 (1.98) |
| **Himachal Pradesh** | Economic Reasoning + SFE | Urban | 4.7 (2.68) | 2.9 (2.03) | 5.1 (3.84) | 3.1 (2.03) | 3.1 (2.11) | 4.2 (3.07) |
| **Himachal Pradesh** | Economic Reasoning + SFE | Rural | 6.4 (2.54) | 6.0 (2.43) | 6.0 (2.44) | 5.7 (2.40) | 6.2 (2.45) | 5.5 (2.26) |
| **Himachal Pradesh** | Economic Reasoning + SFE | Total | 6.2 (2.30) | 5.7 (2.19) | 5.9 (2.18) | 5.5 (2.19) | 5.9 (2.22) | 5.4 (2.05) |
| **Jammu & Kashmir** | Economic Reasoning + SFE | Urban | 6.7 (2.56) | 6.1 (2.47) | 6.5 (2.47) | 5.7 (2.28) | 7.7 (3.07) | 6.3 (2.35) |
| **Jammu & Kashmir** | Economic Reasoning + SFE | Rural | 8.9 (2.63) | 7.9 (2.32) | 9.6 (2.60) | 9.2 (2.58) | 9.7 (2.69) | 9.8 (2.75) |
| **Jammu & Kashmir** | Economic Reasoning + SFE | Total | 8.4 (2.14) | 7.5 (1.90) | 9.0 (2.14) | 8.5 (2.12) | 9.3 (2.25) | 9.2 (2.32) |
| **Jharkhand** | Economic Reasoning + SFE | Urban | 25.1 (4.90) | 23.2 (5.87) | 24.8 (5.26) | 24.2 (5.17) | 23.7 (5.15) | 23.6 (4.89) |
| **Jharkhand** | Economic Reasoning + SFE | Rural | 39.7 (5.05) | 40.6 (5.25) | 37.8 (5.04) | 38.5 (5.21) | 39.1 (4.97) | 38.7 (5.06) |
| **Jharkhand** | Economic Reasoning + SFE | Total | 36.9 (4.20) | 37.0 (4.34) | 35.1 (4.14) | 35.6 (4.28) | 36.1 (4.12) | 36.1 (4.27) |
| **Karnataka** | Economic Reasoning + SFE | Urban | 15.7 (3.12) | 14.5 (2.95) | 11.2 (2.82) | 12.9 (2.81) | 13.2 (2.67) | 13.3 (2.70) |
| **Karnataka** | Economic Reasoning + SFE | Rural | 20.9 (3.77) | 19.4 (3.43) | 19.9 (3.57) | 20.1 (3.58) | 20.5 (3.48) | 19.5 (3.48) |
| **Karnataka** | Economic Reasoning + SFE | Total | 18.9 (2.60) | 17.5 (2.40) | 16.4 (2.41) | 17.5 (2.49) | 17.9 (2.43) | 17.3 (2.43) |
| **Kerala** | Economic Reasoning + SFE | Urban | 5.6 (1.85) | 4.4 (1.44) | 4.9 (1.65) | 4.1 (1.40) | 4.7 (1.48) | 3.9 (1.34) |
| **Kerala** | Economic Reasoning + SFE | Rural | 8.4 (2.48) | 7.9 (2.28) | 7.3 (2.16) | 8.3 (2.37) | 7.6 (2.16) | 7.8 (2.33) |
| **Kerala** | Economic Reasoning + SFE | Total | 7.2 (1.61) | 6.3 (1.40) | 6.1 (1.36) | 6.3 (1.42) | 6.1 (1.31) | 6.0 (1.39) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Madhya Pradesh** | Economic Reasoning + SFE | Urban | 17.3 (2.82) | 16.6 (2.58) | 16.2 (3.13) | 16.3 (2.72) | 15.0 (2.50) | 15.3 (2.59) |
| **Madhya Pradesh** | Economic Reasoning + SFE | Rural | 28.6 (3.26) | 28.2 (3.20) | 28.7 (3.32) | 28.6 (3.22) | 29.3 (3.23) | 26.9 (3.12) |
| **Madhya Pradesh** | Economic Reasoning + SFE | Total | 25.9 (2.56) | 25.2 (2.46) | 25.3 (2.57) | 25.3 (2.47) | 25.9 (2.52) | 24.0 (2.43) |
| **Maharashtra** | Economic Reasoning + SFE | Urban | 13.1 (2.34) | 13.4 (2.36) | 12.2 (2.29) | 12.4 (2.21) | 12.1 (2.34) | 10.8 (2.23) |
| **Maharashtra** | Economic Reasoning + SFE | Rural | 24.1 (3.17) | 23.8 (3.21) | 24.0 (3.22) | 23.1 (3.25) | 24.6 (3.12) | 23.0 (3.14) |
| **Maharashtra** | Economic Reasoning + SFE | Total | 19.3 (2.06) | 19.4 (2.11) | 19.0 (2.10) | 18.8 (2.14) | 19.2 (2.04) | 17.9 (2.05) |
| **Manipur** | Economic Reasoning + SFE | Urban | 32.6 (7.61) | 32.0 (7.52) | 34.2 (7.56) | 32.4 (7.33) | 35.7 (7.84) | 37.0 (8.02) |
| **Manipur** | Economic Reasoning + SFE | Rural | 37.5 (7.50) | 37.4 (7.97) | 36.7 (7.63) | 34.0 (7.43) | 40.5 (7.54) | 38.1 (7.16) |
| **Manipur** | Economic Reasoning + SFE | Total | 36.1 (5.74) | 35.8 (6.05) | 36.0 (5.86) | 33.5 (5.72) | 39.2 (5.92) | 37.8 (5.56) |
| **Meghalaya** | Economic Reasoning + SFE | Urban | 13.3 (5.83) | 13.0 (5.26) | 15.0 (5.84) | 15.7 (6.40) | 15.2 (5.71) | 14.0 (5.40) |
| **Meghalaya** | Economic Reasoning + SFE | Rural | 22.2 (7.00) | 22.1 (7.00) | 29.8 (7.75) | 27.5 (7.81) | 30.2 (7.44) | 29.7 (7.58) |
| **Meghalaya** | Economic Reasoning + SFE | Total | 20.6 (5.81) | 20.7 (5.99) | 27.3 (6.52) | 25.5 (6.52) | 28.1 (6.43) | 27.3 (6.49) |
| **Mizoram** | Economic Reasoning + SFE | Urban | 9.4 (4.27) | 6.8 (3.34) | 6.8 (3.29) | 7.5 (3.60) | 9.0 (3.84) | 9.6 (3.91) |
| **Mizoram** | Economic Reasoning + SFE | Rural | 30.6 (8.06) | 26.7 (7.82) | 24.9 (7.91) | 26.1 (7.67) | 34.1 (8.20) | 32.5 (8.37) |
| **Mizoram** | Economic Reasoning + SFE | Total | 20.4 (4.66) | 17.3 (4.42) | 16.3 (4.44) | 17.1 (4.32) | 22.5 (4.77) | 21.9 (4.84) |
| **Nagaland** | Economic Reasoning + SFE | Urban | 15.4 (5.06) | 13.7 (4.86) | 12.6 (4.60) | 12.2 (4.45) | 13.4 (4.71) | 15.1 (4.84) |
| **Nagaland** | Economic Reasoning + SFE | Rural | 22.4 (6.00) | 21.8 (6.21) | 20.8 (6.51) | 20.3 (5.69) | 28.2 (6.64) | 29.8 (6.90) |
| **Nagaland** | Economic Reasoning + SFE | Total | 20.3 (4.45) | 19.5 (4.66) | 18.3 (4.73) | 18.0 (4.25) | 24.5 (5.13) | 26.0 (5.28) |
| **Orissa** | Economic Reasoning + SFE | Urban | 12.9 (3.21) | 11.6 (3.07) | 12.6 (3.15) | 13.0 (3.26) | 12.9 (3.12) | 11.3 (2.98) |
| **Orissa** | Economic Reasoning + SFE | Rural | 31.0 (3.80) | 31.4 (3.87) | 30.4 (3.85) | 29.9 (3.77) | 32.6 (3.82) | 31.4 (3.89) |
| **Orissa** | Economic Reasoning + SFE | Total | 28.3 (3.26) | 28.4 (3.31) | 27.7 (3.30) | 27.3 (3.23) | 29.9 (3.31) | 28.6 (3.36) |
| **Punjab** | Economic Reasoning + SFE | Urban | 7.8 (2.21) | 8.8 (2.45) | 8.6 (2.46) | 8.3 (2.22) | 7.9 (2.12) | 7.9 (2.02) |
| **Punjab** | Economic Reasoning + SFE | Rural | 3.3 (1.33) | 3.6 (1.46) | 4.0 (1.54) | 3.6 (1.44) | 4.0 (1.56) | 3.4 (1.33) |
| **Punjab** | Economic Reasoning + SFE | Total | 5.0 (1.18) | 5.6 (1.30) | 5.7 (1.33) | 5.4 (1.23) | 5.3 (1.26) | 5.0 (1.12) |
| **Rajasthan** | Economic Reasoning + SFE | Urban | 11.7 (2.79) | 10.8 (2.75) | 11.3 (2.86) | 10.3 (2.48) | 10.0 (2.25) | 9.9 (2.39) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Rajasthan** | Economic Reasoning + SFE | Rural | 15.1 (2.81) | 14.1 (2.69) | 14.8 (2.73) | 14.5 (2.88) | 14.5 (2.70) | 14.4 (2.68) |
| **Rajasthan** | Economic Reasoning + SFE | Total | 14.3 (2.25) | 13.3 (2.14) | 13.9 (2.16) | 13.6 (2.31) | 13.3 (2.09) | 13.3 (2.12) |
| **Sikkim** | Economic Reasoning + SFE | Urban | 8.4 (6.34) | 8.4 (5.87) | 6.5 (5.18) | 8.8 (5.83) | 8.4 (6.11) | 7.3 (5.90) |
| **Sikkim** | Economic Reasoning + SFE | Rural | 15.2 (7.83) | 16.8 (8.47) | 16.3 (7.93) | 12.2 (7.02) | 15.9 (7.39) | 13.7 (6.61) |
| **Sikkim** | Economic Reasoning + SFE | Total | 13.3 (5.97) | 14.6 (6.43) | 13.8 (6.07) | 11.3 (5.33) | 14.3 (5.98) | 12.4 (5.37) |
| **Tamil Nadu** | Economic Reasoning + SFE | Urban | 7.4 (1.75) | 6.4 (1.65) | 6.6 (1.59) | 6.5 (1.56) | 5.7 (1.37) | 5.8 (1.37) |
| **Tamil Nadu** | Economic Reasoning + SFE | Rural | 11.2 (2.26) | 9.8 (2.10) | 10.6 (2.15) | 10.6 (2.23) | 10.8 (2.15) | 9.9 (2.00) |
| **Tamil Nadu** | Economic Reasoning + SFE | Total | 9.4 (1.46) | 8.2 (1.36) | 8.7 (1.36) | 8.7 (1.40) | 8.6 (1.35) | 8.2 (1.29) |
| **Telangana** | Economic Reasoning + SFE | Urban | 7.0 (2.76) | 6.1 (2.56) | 5.4 (2.27) | 6.1 (2.56) | 4.5 (2.19) | 3.9 (1.79) |
| **Telangana** | Economic Reasoning + SFE | Rural | 11.1 (3.58) | 10.5 (3.33) | 10.1 (3.49) | 9.7 (2.67) | 11.0 (2.79) | 9.7 (2.76) |
| **Telangana** | Economic Reasoning + SFE | Total | 9.5 (2.40) | 8.7 (2.21) | 8.2 (2.27) | 8.2 (1.90) | 8.7 (1.97) | 7.5 (1.86) |
| **Tripura** | Economic Reasoning + SFE | Urban | 11.1 (6.20) | 10.6 (5.86) | 12.2 (6.44) | 11.8 (6.23) | 10.4 (4.62) | 10.1 (5.08) |
| **Tripura** | Economic Reasoning + SFE | Rural | 13.5 (6.93) | 11.7 (6.43) | 15.2 (7.39) | 15.3 (7.28) | 14.9 (5.59) | 12.4 (5.00) |
| **Tripura** | Economic Reasoning + SFE | Total | 13.0 (5.65) | 11.5 (5.35) | 14.6 (6.04) | 14.6 (5.98) | 14.1 (4.67) | 12.0 (4.23) |
| **Uttar Pradesh** | Economic Reasoning + SFE | Urban | 19.3 (2.46) | 19.4 (2.35) | 17.7 (2.24) | 17.5 (2.26) | 18.1 (2.19) | 18.1 (2.11) |
| **Uttar Pradesh** | Economic Reasoning + SFE | Rural | 25.2 (2.32) | 23.2 (2.34) | 23.4 (2.36) | 22.5 (2.31) | 24.0 (2.36) | 22.6 (2.35) |
| **Uttar Pradesh** | Economic Reasoning + SFE | Total | 24.0 (1.92) | 22.3 (1.88) | 22.1 (1.90) | 21.5 (1.90) | 22.9 (1.94) | 21.7 (1.93) |
| **Uttaranchal** | Economic Reasoning + SFE | Urban | 8.2 (3.36) | 9.5 (3.82) | 8.8 (3.74) | 7.2 (3.64) | 7.0 (2.99) | 9.8 (5.06) |
| **Uttaranchal** | Economic Reasoning + SFE | Rural | 12.2 (4.85) | 13.9 (4.80) | 12.3 (4.19) | 13.1 (4.40) | 11.7 (4.15) | 11.3 (4.18) |
| **Uttaranchal** | Economic Reasoning + SFE | Total | 11.1 (3.61) | 12.7 (3.62) | 11.4 (3.21) | 11.3 (3.30) | 10.5 (3.20) | 10.9 (3.36) |
| **West Bengal** | Economic Reasoning + SFE | Urban | 13.6 (3.07) | 12.8 (2.90) | 11.0 (2.64) | 11.2 (2.61) | 11.8 (2.60) | 12.5 (2.77) |
| **West Bengal** | Economic Reasoning + SFE | Rural | 19.3 (3.49) | 19.1 (3.47) | 17.7 (3.33) | 17.1 (3.23) | 18.0 (3.27) | 18.1 (3.28) |
| **West Bengal** | Economic Reasoning + SFE | Total | 17.6 (2.60) | 17.1 (2.54) | 15.7 (2.45) | 15.4 (2.42) | 16.3 (2.48) | 16.5 (2.47) |
| **Andhra Pradesh** | LASSO All | Urban | 14.3 (4.04) | 12.0 (2.83) | 11.0 (2.50) | 11.4 (2.68) | 10.3 (2.56) | 10.3 (2.43) |
| **Andhra Pradesh** | LASSO All | Rural | 18.6 (3.96) | 16.4 (3.60) | 15.5 (3.37) | 15.8 (3.41) | 13.6 (3.11) | 13.6 (3.01) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | LASSO All | Total | 17.2 (2.96) | 14.9 (2.58) | 14.1 (2.43) | 14.3 (2.45) | 12.6 (2.30) | 12.6 (2.23) |
| **Arunachal Pradesh** | LASSO All | Urban | 18.3 (4.45) | 16.1 (4.18) | 17.4 (4.25) | 15.7 (4.77) | 18.5 (3.94) | 16.4 (3.92) |
| **Arunachal Pradesh** | LASSO All | Rural | 25.5 (4.70) | 23.6 (4.33) | 25.1 (5.51) | 23.9 (4.61) | 27.3 (4.75) | 25.1 (4.60) |
| **Arunachal Pradesh** | LASSO All | Total | 24.4 (4.02) | 22.3 (3.66) | 23.6 (4.54) | 22.4 (3.86) | 25.8 (4.00) | 23.8 (3.94) |
| **Assam** | LASSO All | Urban | 11.1 (3.03) | 11.5 (2.99) | 10.4 (2.96) | 8.4 (2.59) | 11.5 (3.19) | 10.3 (2.65) |
| **Assam** | LASSO All | Rural | 18.9 (3.27) | 18.0 (3.19) | 19.6 (3.35) | 16.7 (3.04) | 22.2 (3.24) | 23.4 (23.69) |
| **Assam** | LASSO All | Total | 18.1 (2.96) | 17.3 (2.87) | 18.5 (2.97) | 15.7 (2.69) | 21.1 (2.93) | 23.0 (22.90) |
| **Bihar** | LASSO All | Urban | 18.9 (3.07) | 18.1 (3.35) | 19.6 (3.72) | 17.9 (3.47) | 19.0 (3.13) | 16.1 (2.95) |
| **Bihar** | LASSO All | Rural | 21.5 (3.02) | 22.1 (2.97) | 21.4 (2.96) | 19.8 (2.86) | 21.8 (2.90) | 21.8 (2.81) |
| **Bihar** | LASSO All | Total | 21.3 (2.77) | 21.7 (2.72) | 21.2 (2.67) | 19.6 (2.61) | 21.6 (2.67) | 21.3 (2.60) |
| **Chhattisgarh** | LASSO All | Urban | 11.4 (3.39) | 10.0 (3.07) | 7.5 (2.23) | 9.6 (3.09) | 9.3 (2.74) | 8.8 (2.76) |
| **Chhattisgarh** | LASSO All | Rural | 19.6 (3.30) | 17.6 (3.28) | 18.1 (3.26) | 16.4 (3.14) | 16.8 (3.07) | 18.1 (3.18) |
| **Chhattisgarh** | LASSO All | Total | 18.0 (2.75) | 16.1 (2.73) | 16.2 (2.70) | 15.1 (2.61) | 15.4 (2.55) | 16.3 (2.64) |
| **Delhi** | LASSO All | Urban | 22.2 (7.61) | 19.4 (6.42) | 16.7 (5.33) | 18.3 (5.49) | 17.3 (4.65) | 18.7 (5.36) |
| **Delhi** | LASSO All | Rural | 56.8 (19.66) | 56.0 (23.34) | 45.5 (19.55) | 37.2 (16.26) | 30.4 (14.39) | 33.4 (16.22) |
| **Delhi** | LASSO All | Total | 23.3 (7.40) | 21.2 (6.22) | 17.8 (5.19) | 18.8 (5.36) | 17.8 (4.52) | 19.1 (5.24) |
| **Gujrat** | LASSO All | Urban | 19.3 (4.08) | 17.0 (3.62) | 17.4 (3.45) | 17.5 (3.59) | 20.5 (3.81) | 19.9 (4.23) |
| **Gujrat** | LASSO All | Rural | 24.4 (3.83) | 26.2 (4.35) | 24.1 (3.93) | 24.9 (3.80) | 22.9 (3.48) | 23.1 (3.57) |
| **Gujrat** | LASSO All | Total | 22.3 (2.81) | 22.2 (2.93) | 21.3 (2.69) | 21.9 (2.68) | 21.8 (2.57) | 21.7 (2.73) |
| **Haryana** | LASSO All | Urban | 23.4 (3.65) | 20.8 (3.46) | 22.2 (3.69) | 22.3 (4.07) | 23.4 (3.79) | 21.9 (4.07) |
| **Haryana** | LASSO All | Rural | 29.8 (4.51) | 29.5 (4.37) | 28.7 (4.48) | 27.2 (4.36) | 26.5 (4.26) | 26.3 (4.21) |
| **Haryana** | LASSO All | Total | 27.6 (3.22) | 26.7 (3.16) | 26.4 (3.18) | 25.6 (3.21) | 25.4 (3.08) | 24.8 (3.10) |
| **Himachal Pradesh** | LASSO All | Urban | 7.0 (3.19) | 4.8 (2.73) | 8.4 (4.86) | 5.0 (2.46) | 4.8 (2.59) | 6.4 (3.55) |
| **Himachal Pradesh** | LASSO All | Rural | 13.2 (3.59) | 11.9 (3.47) | 12.3 (3.63) | 11.0 (3.49) | 11.4 (3.23) | 10.1 (2.91) |
| **Himachal Pradesh** | LASSO All | Total | 12.6 (3.24) | 11.1 (3.12) | 11.8 (3.22) | 10.5 (3.17) | 10.7 (2.93) | 9.7 (2.64) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Jammu & Kashmir** | LASSO All | Urban | 11.1 (3.42) | 10.1 (3.00) | 10.8 (3.12) | 9.6 (2.88) | 12.7 (3.70) | 10.2 (2.90) |
| **Jammu & Kashmir** | LASSO All | Rural | 15.9 (3.21) | 14.1 (2.91) | 16.1 (3.05) | 15.2 (2.99) | 16.6 (3.21) | 16.6 (3.18) |
| **Jammu & Kashmir** | LASSO All | Total | 14.8 (2.63) | 13.3 (2.38) | 15.1 (2.52) | 14.1 (2.47) | 15.9 (2.69) | 15.5 (2.68) |
| **Jharkhand** | LASSO All | Urban | 19.0 (3.92) | 17.3 (4.78) | 19.1 (4.13) | 18.2 (4.24) | 17.8 (3.98) | 17.8 (3.88) |
| **Jharkhand** | LASSO All | Rural | 24.8 (4.02) | 25.8 (4.12) | 23.4 (3.59) | 24.1 (3.79) | 24.3 (3.73) | 23.3 (3.81) |
| **Jharkhand** | LASSO All | Total | 23.7 (3.34) | 24.1 (3.41) | 22.5 (2.97) | 22.9 (3.14) | 23.0 (3.09) | 22.3 (3.22) |
| **Karnataka** | LASSO All | Urban | 16.8 (3.12) | 15.2 (2.95) | 12.2 (3.11) | 13.7 (2.72) | 14.0 (2.70) | 14.2 (2.68) |
| **Karnataka** | LASSO All | Rural | 26.5 (3.95) | 23.7 (3.52) | 24.3 (3.54) | 24.8 (3.52) | 23.6 (3.49) | 24.1 (3.53) |
| **Karnataka** | LASSO All | Total | 22.8 (2.70) | 20.4 (2.45) | 19.3 (2.45) | 20.7 (2.44) | 20.2 (2.44) | 20.5 (2.45) |
| **Kerala** | LASSO All | Urban | 6.4 (2.09) | 5.5 (1.76) | 5.7 (1.95) | 5.0 (1.69) | 5.7 (1.78) | 4.7 (1.52) |
| **Kerala** | LASSO All | Rural | 13.9 (3.24) | 11.0 (2.80) | 10.3 (2.64) | 10.8 (2.79) | 10.0 (2.64) | 10.3 (2.77) |
| **Kerala** | LASSO All | Total | 10.6 (2.04) | 8.5 (1.72) | 8.0 (1.65) | 8.0 (1.68) | 7.8 (1.59) | 7.7 (1.64) |
| **Madhya Pradesh** | LASSO All | Urban | 12.1 (2.41) | 11.7 (2.09) | 11.3 (2.70) | 11.2 (2.21) | 10.4 (1.99) | 10.6 (2.07) |
| **Madhya Pradesh** | LASSO All | Rural | 20.7 (2.69) | 20.0 (2.70) | 20.6 (2.70) | 19.9 (2.58) | 20.6 (2.54) | 18.5 (2.42) |
| **Madhya Pradesh** | LASSO All | Total | 18.6 (2.12) | 17.8 (2.07) | 18.1 (2.10) | 17.6 (1.97) | 18.1 (1.98) | 16.5 (1.89) |
| **Maharashtra** | LASSO All | Urban | 16.1 (2.71) | 16.4 (2.75) | 15.2 (2.55) | 15.4 (2.67) | 15.1 (2.54) | 13.5 (2.70) |
| **Maharashtra** | LASSO All | Rural | 27.4 (3.03) | 26.8 (3.04) | 28.2 (3.21) | 26.3 (3.11) | 27.1 (2.99) | 25.5 (2.94) |
| **Maharashtra** | LASSO All | Total | 22.6 (2.08) | 22.4 (2.11) | 22.8 (2.15) | 22.0 (2.15) | 21.9 (2.03) | 20.4 (2.05) |
| **Manipur** | LASSO All | Urban | 18.9 (5.02) | 18.5 (5.19) | 19.8 (5.31) | 18.3 (4.85) | 20.5 (5.43) | 22.0 (5.62) |
| **Manipur** | LASSO All | Rural | 38.6 (7.29) | 37.0 (7.45) | 36.0 (6.86) | 34.6 (6.99) | 39.0 (6.64) | 37.5 (6.11) |
| **Manipur** | LASSO All | Total | 32.8 (5.35) | 31.6 (5.49) | 31.4 (5.13) | 30.0 (5.20) | 34.1 (5.08) | 32.8 (4.60) |
| **Meghalaya** | LASSO All | Urban | 18.1 (6.81) | 16.5 (5.80) | 19.5 (6.26) | 19.8 (6.79) | 19.7 (6.08) | 17.8 (5.84) |
| **Meghalaya** | LASSO All | Rural | 35.1 (7.80) | 36.1 (7.91) | 45.7 (7.95) | 43.7 (8.35) | 43.2 (6.94) | 43.9 (7.05) |
| **Meghalaya** | LASSO All | Total | 32.0 (6.49) | 33.1 (6.76) | 41.4 (6.70) | 39.4 (6.98) | 39.8 (6.01) | 39.9 (6.05) |
| **Mizoram** | LASSO All | Urban | 15.5 (5.65) | 11.7 (4.95) | 11.9 (4.82) | 12.9 (5.02) | 15.1 (5.71) | 15.5 (5.23) |

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|---|---|---|---|---|---|---|---|---|
| **Mizoram** | LASSO All | Rural | 40.6 (8.26) | 34.3 (7.64) | 32.2 (7.78) | 35.3 (7.36) | 41.7 (7.30) | 39.6 (7.40) |
| **Mizoram** | LASSO All | Total | 28.5 (5.07) | 23.7 (4.66) | 22.6 (4.68) | 24.5 (4.51) | 29.5 (4.74) | 28.4 (4.65) |
| **Nagaland** | LASSO All | Urban | 22.0 (5.69) | 20.7 (5.78) | 19.0 (5.63) | 18.5 (5.44) | 20.2 (5.61) | 21.7 (5.54) |
| **Nagaland** | LASSO All | Rural | 52.1 (6.46) | 53.3 (6.86) | 49.0 (7.95) | 43.7 (7.49) | 55.1 (6.96) | 56.7 (6.78) |
| **Nagaland** | LASSO All | Total | 43.0 (4.82) | 44.1 (5.18) | 39.8 (5.77) | 36.4 (5.56) | 46.4 (5.41) | 47.8 (5.24) |
| **Orissa** | LASSO All | Urban | 7.7 (2.19) | 6.9 (2.32) | 7.6 (2.26) | 7.8 (2.30) | 7.8 (2.13) | 6.4 (1.88) |
| **Orissa** | LASSO All | Rural | 13.0 (2.38) | 13.1 (2.39) | 12.3 (2.29) | 11.9 (2.23) | 12.9 (2.34) | 12.2 (2.35) |
| **Orissa** | LASSO All | Total | 12.2 (2.04) | 12.2 (2.05) | 11.6 (1.97) | 11.3 (1.93) | 12.2 (2.04) | 11.4 (2.04) |
| **Punjab** | LASSO All | Urban | 16.9 (3.37) | 18.1 (3.50) | 16.7 (3.47) | 16.3 (3.28) | 16.2 (3.09) | 16.0 (2.87) |
| **Punjab** | LASSO All | Rural | 12.6 (2.84) | 15.1 (3.49) | 15.7 (3.17) | 16.0 (3.28) | 15.7 (3.22) | 13.4 (2.88) |
| **Punjab** | LASSO All | Total | 14.2 (2.18) | 16.3 (2.53) | 16.1 (2.37) | 16.1 (2.38) | 15.9 (2.37) | 14.3 (2.12) |
| **Rajasthan** | LASSO All | Urban | 15.2 (2.92) | 14.0 (3.01) | 14.6 (3.10) | 13.6 (2.70) | 13.1 (2.49) | 13.0 (2.48) |
| **Rajasthan** | LASSO All | Rural | 22.8 (3.25) | 21.2 (2.96) | 22.7 (3.16) | 21.7 (3.30) | 21.1 (2.96) | 21.1 (3.00) |
| **Rajasthan** | LASSO All | Total | 21.0 (2.59) | 19.4 (2.35) | 20.6 (2.48) | 19.9 (2.64) | 19.0 (2.28) | 19.2 (2.36) |
| **Sikkim** | LASSO All | Urban | 12.5 (7.33) | 12.5 (6.52) | 10.6 (6.31) | 13.1 (6.36) | 12.2 (6.94) | 10.8 (6.55) |
| **Sikkim** | LASSO All | Rural | 16.1 (8.09) | 17.7 (8.19) | 17.2 (8.05) | 12.0 (6.96) | 15.7 (6.54) | 14.3 (5.99) |
| **Sikkim** | LASSO All | Total | 15.1 (6.23) | 16.3 (6.27) | 15.5 (6.22) | 12.3 (5.33) | 15.0 (5.37) | 13.6 (4.93) |
| **Tamil Nadu** | LASSO All | Urban | 9.1 (1.97) | 8.1 (1.91) | 8.3 (1.75) | 8.1 (1.75) | 7.3 (1.52) | 7.5 (1.43) |
| **Tamil Nadu** | LASSO All | Rural | 13.9 (2.40) | 12.7 (2.37) | 13.0 (2.24) | 12.8 (2.26) | 12.4 (2.23) | 11.4 (2.14) |
| **Tamil Nadu** | LASSO All | Total | 11.7 (1.58) | 10.5 (1.55) | 10.8 (1.45) | 10.7 (1.46) | 10.2 (1.42) | 9.7 (1.37) |
| **Telangana** | LASSO All | Urban | 11.6 (3.67) | 10.7 (3.88) | 9.3 (3.10) | 10.1 (3.69) | 7.8 (3.32) | 7.2 (2.71) |
| **Telangana** | LASSO All | Rural | 20.4 (4.97) | 19.2 (4.72) | 17.7 (3.95) | 17.7 (3.17) | 19.8 (3.29) | 18.4 (3.22) |
| **Telangana** | LASSO All | Total | 16.8 (3.30) | 15.6 (3.19) | 14.3 (2.67) | 14.6 (2.41) | 15.6 (2.44) | 14.2 (2.26) |
| **Tripura** | LASSO All | Urban | 10.6 (5.71) | 10.7 (5.91) | 12.1 (6.08) | 11.8 (5.91) | 10.6 (4.07) | 9.9 (4.66) |
| **Tripura** | LASSO All | Rural | 16.9 (7.64) | 14.0 (6.72) | 18.0 (8.31) | 18.7 (8.22) | 18.0 (4.82) | 15.3 (4.54) |
| **Tripura** | LASSO All | Total | 15.6 (6.18) | 13.4 (5.59) | 16.8 (6.74) | 17.3 (6.70) | 16.6 (4.03) | 14.4 (3.84) |

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|---|---|---|---|---|---|---|---|---|
| **Uttar Pradesh** | LASSO All | Urban | 15.8 (2.16) | 15.7 (2.11) | 14.3 (2.00) | 14.1 (1.89) | 14.7 (1.91) | 14.6 (1.82) |
| **Uttar Pradesh** | LASSO All | Rural | 18.7 (1.98) | 16.7 (1.97) | 17.0 (1.97) | 16.1 (1.87) | 16.4 (1.88) | 16.1 (1.92) |
| **Uttar Pradesh** | LASSO All | Total | 18.1 (1.64) | 16.5 (1.59) | 16.4 (1.59) | 15.7 (1.54) | 16.0 (1.55) | 15.8 (1.58) |
| **Uttaranchal** | LASSO All | Urban | 8.4 (3.22) | 9.4 (3.46) | 8.9 (3.30) | 7.3 (3.58) | 7.0 (2.79) | 9.4 (4.64) |
| **Uttaranchal** | LASSO All | Rural | 17.2 (5.08) | 19.3 (5.08) | 18.4 (4.72) | 19.0 (4.83) | 15.1 (4.28) | 15.9 (4.36) |
| **Uttaranchal** | LASSO All | Total | 14.7 (3.75) | 16.5 (3.79) | 15.8 (3.56) | 15.6 (3.59) | 13.1 (3.28) | 14.2 (3.44) |
| **West Bengal** | LASSO All | Urban | 13.2 (2.77) | 12.4 (2.52) | 10.4 (2.29) | 10.5 (2.19) | 11.1 (2.34) | 11.8 (2.46) |
| **West Bengal** | LASSO All | Rural | 16.5 (3.10) | 15.4 (2.93) | 13.9 (2.72) | 14.1 (2.66) | 14.3 (2.56) | 14.7 (2.69) |
| **West Bengal** | LASSO All | Total | 15.5 (2.32) | 14.5 (2.16) | 12.9 (2.02) | 13.1 (2.00) | 13.4 (1.96) | 13.9 (2.05) |
| **Andhra Pradesh** | LASSO All + SFE | Urban | 10.5 (3.54) | 8.7 (2.43) | 7.8 (2.20) | 8.2 (2.28) | 7.4 (2.27) | 7.4 (2.09) |
| **Andhra Pradesh** | LASSO All + SFE | Rural | 10.3 (2.87) | 8.6 (2.56) | 7.9 (2.47) | 8.3 (2.59) | 6.9 (2.18) | 7.0 (2.13) |
| **Andhra Pradesh** | LASSO All + SFE | Total | 10.4 (2.25) | 8.6 (1.89) | 7.9 (1.82) | 8.2 (1.89) | 7.1 (1.67) | 7.1 (1.62) |
| **Arunachal Pradesh** | LASSO All + SFE | Urban | 19.0 (4.97) | 17.1 (4.66) | 18.4 (4.81) | 16.7 (5.01) | 19.6 (4.58) | 17.7 (4.42) |
| **Arunachal Pradesh** | LASSO All + SFE | Rural | 22.3 (4.75) | 20.2 (4.31) | 21.8 (5.31) | 20.6 (4.49) | 23.9 (4.83) | 21.9 (4.89) |
| **Arunachal Pradesh** | LASSO All + SFE | Total | 21.8 (4.08) | 19.6 (3.67) | 21.2 (4.40) | 19.8 (3.77) | 23.1 (4.08) | 21.2 (4.19) |
| **Assam** | LASSO All + SFE | Urban | 15.5 (3.91) | 15.7 (3.91) | 14.4 (3.74) | 11.8 (3.36) | 16.0 (4.05) | 14.2 (3.51) |
| **Assam** | LASSO All + SFE | Rural | 29.3 (3.96) | 28.0 (3.99) | 30.0 (4.31) | 26.4 (4.01) | 34.0 (4.14) | 38.6 (26.96) |
| **Assam** | LASSO All + SFE | Total | 27.9 (3.58) | 26.7 (3.60) | 28.1 (3.82) | 24.6 (3.54) | 32.1 (3.74) | 37.8 (26.07) |
| **Bihar** | LASSO All + SFE | Urban | 30.2 (4.10) | 29.6 (4.22) | 31.4 (4.80) | 29.4 (4.43) | 30.2 (3.98) | 26.9 (4.17) |
| **Bihar** | LASSO All + SFE | Rural | 27.1 (3.51) | 27.9 (3.62) | 27.1 (3.56) | 25.2 (3.50) | 27.5 (3.55) | 27.7 (3.50) |
| **Bihar** | LASSO All + SFE | Total | 27.4 (3.22) | 28.0 (3.31) | 27.6 (3.22) | 25.6 (3.20) | 27.7 (3.28) | 27.6 (3.25) |
| **Chhattisgarh** | LASSO All + SFE | Urban | 17.5 (4.44) | 15.0 (3.86) | 11.8 (3.33) | 14.6 (3.94) | 14.3 (3.79) | 13.4 (3.77) |
| **Chhattisgarh** | LASSO All + SFE | Rural | 34.1 (4.82) | 31.4 (4.61) | 32.1 (4.64) | 29.8 (4.62) | 30.3 (4.47) | 32.0 (4.57) |
| **Chhattisgarh** | LASSO All + SFE | Total | 30.9 (3.99) | 28.4 (3.82) | 28.5 (3.85) | 26.9 (3.81) | 27.3 (3.71) | 28.5 (3.78) |
| **Delhi** | LASSO All + SFE | Urban | 12.5 (5.83) | 10.8 (4.90) | 8.6 (4.08) | 9.5 (4.23) | 8.8 (3.77) | 9.6 (4.20) |

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|---|---|---|---|---|---|---|---|---|
| **Delhi** | LASSO All + SFE | Rural | 30.2 (20.80) | 28.9 (25.52) | 19.4 (16.08) | 15.4 (13.18) | 11.6 (11.12) | 13.6 (12.36) |
| **Delhi** | LASSO All + SFE | Total | 13.1 (5.69) | 11.6 (4.82) | 9.0 (3.98) | 9.6 (4.12) | 8.9 (3.66) | 9.7 (4.11) |
| **Gujrat** | LASSO All + SFE | Urban | 10.7 (3.03) | 9.2 (2.74) | 9.8 (2.64) | 9.6 (2.80) | 11.5 (2.94) | 11.5 (3.32) |
| **Gujrat** | LASSO All + SFE | Rural | 13.0 (3.19) | 14.8 (3.52) | 13.3 (3.29) | 13.7 (3.12) | 12.4 (2.90) | 12.5 (2.97) |
| **Gujrat** | LASSO All + SFE | Total | 12.1 (2.26) | 12.4 (2.33) | 11.8 (2.20) | 12.0 (2.17) | 12.0 (2.08) | 12.1 (2.22) |
| **Haryana** | LASSO All + SFE | Urban | 11.3 (2.94) | 9.5 (2.64) | 10.5 (2.92) | 10.5 (3.27) | 11.0 (2.97) | 10.4 (2.90) |
| **Haryana** | LASSO All + SFE | Rural | 8.9 (2.79) | 8.8 (2.64) | 8.3 (2.53) | 7.5 (2.40) | 7.3 (2.31) | 7.1 (2.29) |
| **Haryana** | LASSO All + SFE | Total | 9.7 (2.09) | 9.0 (1.98) | 9.1 (1.94) | 8.5 (1.94) | 8.6 (1.83) | 8.2 (1.80) |
| **Himachal Pradesh** | LASSO All + SFE | Urban | 4.5 (2.72) | 2.9 (2.06) | 5.5 (4.14) | 3.1 (1.98) | 3.0 (2.07) | 4.4 (3.21) |
| **Himachal Pradesh** | LASSO All + SFE | Rural | 5.3 (2.19) | 4.8 (1.97) | 4.8 (2.07) | 4.3 (1.98) | 4.5 (1.94) | 3.9 (1.71) |
| **Himachal Pradesh** | LASSO All + SFE | Total | 5.2 (1.98) | 4.6 (1.78) | 4.9 (1.88) | 4.2 (1.80) | 4.4 (1.76) | 3.9 (1.57) |
| **Jammu & Kashmir** | LASSO All + SFE | Urban | 6.3 (2.41) | 6.1 (2.39) | 6.3 (2.44) | 5.5 (2.17) | 7.7 (2.99) | 6.0 (2.30) |
| **Jammu & Kashmir** | LASSO All + SFE | Rural | 7.4 (2.25) | 6.3 (1.94) | 7.6 (2.20) | 7.0 (2.17) | 7.8 (2.26) | 7.7 (2.34) |
| **Jammu & Kashmir** | LASSO All + SFE | Total | 7.1 (1.84) | 6.3 (1.61) | 7.3 (1.83) | 6.7 (1.80) | 7.7 (1.92) | 7.4 (1.98) |
| **Jharkhand** | LASSO All + SFE | Urban | 24.8 (5.08) | 22.8 (6.08) | 24.7 (5.32) | 23.9 (5.32) | 23.8 (5.29) | 23.4 (4.93) |
| **Jharkhand** | LASSO All + SFE | Rural | 36.5 (4.84) | 37.9 (4.85) | 35.2 (4.52) | 36.3 (4.74) | 36.7 (4.57) | 35.1 (4.63) |
| **Jharkhand** | LASSO All + SFE | Total | 34.3 (4.04) | 34.7 (4.04) | 33.1 (3.75) | 33.8 (3.93) | 34.1 (3.81) | 33.1 (3.92) |
| **Karnataka** | LASSO All + SFE | Urban | 15.7 (3.02) | 14.5 (2.89) | 11.3 (2.87) | 13.0 (2.66) | 13.2 (2.64) | 13.6 (2.71) |
| **Karnataka** | LASSO All + SFE | Rural | 20.1 (3.55) | 17.8 (3.24) | 18.1 (3.15) | 18.6 (3.23) | 17.8 (3.04) | 18.0 (3.20) |
| **Karnataka** | LASSO All + SFE | Total | 18.4 (2.47) | 16.5 (2.28) | 15.4 (2.20) | 16.5 (2.26) | 16.2 (2.17) | 16.4 (2.26) |
| **Kerala** | LASSO All + SFE | Urban | 5.4 (1.74) | 4.5 (1.49) | 4.9 (1.68) | 4.0 (1.34) | 4.8 (1.51) | 3.8 (1.29) |
| **Kerala** | LASSO All + SFE | Rural | 6.9 (2.10) | 5.4 (1.67) | 4.9 (1.64) | 5.3 (1.71) | 4.7 (1.55) | 4.9 (1.70) |
| **Kerala** | LASSO All + SFE | Total | 6.2 (1.40) | 5.0 (1.13) | 4.9 (1.17) | 4.7 (1.11) | 4.8 (1.08) | 4.4 (1.09) |
| **Madhya Pradesh** | LASSO All + SFE | Urban | 17.2 (2.99) | 16.4 (2.64) | 16.2 (3.29) | 16.2 (2.67) | 14.9 (2.46) | 15.2 (2.64) |
| **Madhya Pradesh** | LASSO All + SFE | Rural | 27.0 (3.12) | 26.3 (3.17) | 26.9 (3.11) | 26.0 (3.03) | 27.1 (2.98) | 24.5 (2.95) |
| **Madhya Pradesh** | LASSO All + SFE | Total | 24.6 (2.46) | 23.7 (2.45) | 24.0 (2.44) | 23.4 (2.33) | 24.1 (2.33) | 22.2 (2.31) |
| **Maharashtra** | LASSO All + SFE | Urban | 13.0 (2.31) | 13.3 (2.34) | 12.2 (2.27) | 12.4 (2.19) | 12.1 (2.27) | 10.8 (2.19) |
| **Maharashtra** | LASSO All + SFE | Rural | 22.5 (2.99) | 21.9 (2.94) | 23.2 (2.94) | 21.4 (2.90) | 22.2 (2.92) | 20.9 (2.94) |
| **Maharashtra** | LASSO All + SFE | Total | 18.4 (1.97) | 18.3 (1.97) | 18.6 (1.95) | 17.8 (1.95) | 17.9 (1.93) | 16.7 (1.94) |
| **Manipur** | LASSO All + SFE | Urban | 32.8 (7.42) | 32.7 (7.45) | 34.2 (7.76) | 32.6 (7.43) | 35.4 (7.78) | 36.8 (7.98) |

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|---|---|---|---|---|---|---|---|---|
| **Manipur** | LASSO All + SFE | Rural | 34.4 (7.38) | 33.1 (7.34) | 31.5 (7.05) | 30.3 (7.00) | 34.9 (7.16) | 33.6 (6.98) |
| **Manipur** | LASSO All + SFE | Total | 33.9 (5.65) | 33.0 (5.63) | 32.3 (5.50) | 30.9 (5.44) | 35.1 (5.65) | 34.5 (5.44) |
| **Meghalaya** | LASSO All + SFE | Urban | 14.2 (6.12) | 13.0 (5.38) | 15.6 (5.92) | 16.0 (6.55) | 15.9 (5.67) | 14.4 (5.54) |
| **Meghalaya** | LASSO All + SFE | Rural | 19.6 (6.46) | 20.5 (6.54) | 28.7 (7.05) | 25.8 (7.20) | 27.2 (6.89) | 27.2 (6.77) |
| **Meghalaya** | LASSO All + SFE | Total | 18.6 (5.39) | 19.4 (5.61) | 26.5 (5.96) | 24.0 (6.04) | 25.6 (5.96) | 25.2 (5.81) |
| **Mizoram** | LASSO All + SFE | Urban | 9.2 (3.84) | 6.8 (3.23) | 6.8 (3.01) | 7.7 (3.54) | 8.7 (3.86) | 9.2 (3.77) |
| **Mizoram** | LASSO All + SFE | Rural | 30.9 (8.08) | 25.7 (7.42) | 23.4 (7.34) | 26.2 (6.99) | 31.8 (7.81) | 29.9 (7.69) |
| **Mizoram** | LASSO All + SFE | Total | 20.5 (4.58) | 16.8 (4.21) | 15.5 (4.11) | 17.2 (3.99) | 21.2 (4.57) | 20.3 (4.49) |
| **Nagaland** | LASSO All + SFE | Urban | 15.1 (5.22) | 13.8 (5.01) | 12.6 (4.64) | 12.2 (4.65) | 13.5 (4.85) | 14.9 (5.01) |
| **Nagaland** | LASSO All + SFE | Rural | 22.2 (5.68) | 22.9 (6.04) | 19.2 (6.07) | 16.8 (5.07) | 24.7 (5.98) | 25.8 (6.19) |
| **Nagaland** | LASSO All + SFE | Total | 20.0 (4.26) | 20.3 (4.55) | 17.1 (4.44) | 15.5 (3.85) | 21.9 (4.65) | 23.0 (4.78) |
| **Orissa** | LASSO All + SFE | Urban | 12.8 (3.10) | 11.5 (3.10) | 12.6 (3.14) | 12.9 (3.25) | 12.7 (3.03) | 11.2 (2.89) |
| **Orissa** | LASSO All + SFE | Rural | 29.8 (3.59) | 29.7 (3.47) | 28.5 (3.61) | 27.8 (3.43) | 29.7 (3.66) | 28.8 (3.58) |
| **Orissa** | LASSO All + SFE | Total | 27.2 (3.08) | 26.9 (2.97) | 26.1 (3.10) | 25.5 (2.95) | 27.3 (3.18) | 26.3 (3.10) |
| **Punjab** | LASSO All + SFE | Urban | 8.3 (2.30) | 9.3 (2.44) | 8.3 (2.48) | 8.1 (2.23) | 8.1 (2.19) | 7.8 (2.03) |
| **Punjab** | LASSO All + SFE | Rural | 3.2 (1.22) | 4.0 (1.52) | 4.2 (1.52) | 4.2 (1.60) | 4.1 (1.51) | 3.4 (1.34) |
| **Punjab** | LASSO All + SFE | Total | 5.1 (1.16) | 6.0 (1.32) | 5.8 (1.33) | 5.7 (1.31) | 5.4 (1.25) | 5.0 (1.13) |
| **Rajasthan** | LASSO All + SFE | Urban | 11.7 (2.70) | 10.7 (2.72) | 11.4 (2.77) | 10.5 (2.41) | 10.2 (2.28) | 10.1 (2.33) |
| **Rajasthan** | LASSO All + SFE | Rural | 13.6 (2.63) | 12.1 (2.43) | 13.2 (2.51) | 12.7 (2.80) | 12.2 (2.42) | 12.2 (2.39) |
| **Rajasthan** | LASSO All + SFE | Total | 13.1 (2.12) | 11.8 (1.95) | 12.8 (2.00) | 12.2 (2.24) | 11.7 (1.89) | 11.7 (1.90) |
| **Sikkim** | LASSO All + SFE | Urban | 8.6 (6.29) | 8.7 (6.38) | 7.0 (5.69) | 9.0 (5.70) | 8.5 (6.15) | 7.4 (5.73) |
| **Sikkim** | LASSO All + SFE | Rural | 12.1 (6.66) | 13.4 (7.20) | 12.9 (6.64) | 8.6 (5.41) | 11.7 (5.88) | 10.9 (5.47) |
| **Sikkim** | LASSO All + SFE | Total | 11.2 (5.15) | 12.2 (5.56) | 11.4 (5.17) | 8.7 (4.22) | 11.1 (4.82) | 10.2 (4.49) |
| **Tamil Nadu** | LASSO All + SFE | Urban | 7.5 (1.73) | 6.4 (1.64) | 6.6 (1.59) | 6.6 (1.60) | 5.9 (1.41) | 6.1 (1.44) |
| **Tamil Nadu** | LASSO All + SFE | Rural | 9.7 (1.98) | 8.6 (1.94) | 9.0 (1.93) | 8.8 (1.88) | 8.6 (1.85) | 7.8 (1.75) |
| **Tamil Nadu** | LASSO All + SFE | Total | 8.7 (1.33) | 7.6 (1.29) | 7.9 (1.27) | 7.8 (1.26) | 7.4 (1.21) | 7.1 (1.18) |
| **Telangana** | LASSO All + SFE | Urban | 7.0 (2.70) | 6.3 (2.64) | 5.4 (2.26) | 6.2 (2.61) | 4.4 (2.14) | 4.0 (1.83) |
| **Telangana** | LASSO All + SFE | Rural | 9.9 (3.28) | 9.0 (2.89) | 7.9 (2.79) | 8.1 (2.33) | 9.3 (2.60) | 8.5 (2.51) |
| **Telangana** | LASSO All + SFE | Total | 8.7 (2.23) | 7.9 (2.01) | 6.9 (1.90) | 7.3 (1.74) | 7.6 (1.85) | 6.8 (1.72) |
| **Tripura** | LASSO All + SFE | Urban | 11.1 (6.05) | 10.8 (5.98) | 12.3 (6.55) | 12.0 (6.21) | 10.4 (4.66) | 10.2 (5.03) |

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|---|---|---|---|---|---|---|---|---|
| **Tripura** | LASSO All + SFE | Rural | 11.5 (5.64) | 9.4 (5.43) | 11.8 (6.26) | 13.2 (6.78) | 12.0 (4.95) | 10.0 (4.15) |
| **Tripura** | LASSO All + SFE | Total | 11.4 (4.65) | 9.7 (4.56) | 11.9 (5.17) | 12.9 (5.58) | 11.7 (4.15) | 10.1 (3.54) |
| **Uttar Pradesh** | LASSO All + SFE | Urban | 19.5 (2.45) | 19.3 (2.43) | 17.7 (2.28) | 17.4 (2.21) | 18.1 (2.23) | 18.2 (2.22) |
| **Uttar Pradesh** | LASSO All + SFE | Rural | 22.7 (2.28) | 20.4 (2.15) | 20.7 (2.19) | 19.7 (2.12) | 20.2 (2.18) | 19.8 (2.15) |
| **Uttar Pradesh** | LASSO All + SFE | Total | 22.1 (1.88) | 20.2 (1.75) | 20.0 (1.78) | 19.3 (1.75) | 19.8 (1.81) | 19.5 (1.78) |
| **Uttaranchal** | LASSO All + SFE | Urban | 8.3 (3.31) | 9.5 (3.80) | 8.7 (3.62) | 7.4 (3.83) | 7.1 (3.07) | 9.3 (4.81) |
| **Uttaranchal** | LASSO All + SFE | Rural | 10.8 (4.37) | 11.8 (4.04) | 11.4 (3.83) | 11.8 (4.04) | 9.4 (3.58) | 9.7 (3.63) |
| **Uttaranchal** | LASSO All + SFE | Total | 10.1 (3.27) | 11.1 (3.10) | 10.7 (2.96) | 10.5 (3.07) | 8.8 (2.79) | 9.6 (2.97) |
| **West Bengal** | LASSO All + SFE | Urban | 13.9 (3.29) | 13.0 (2.94) | 10.9 (2.69) | 11.1 (2.67) | 11.6 (2.78) | 12.4 (2.90) |
| **West Bengal** | LASSO All + SFE | Rural | 18.3 (3.28) | 17.1 (3.29) | 15.5 (3.04) | 15.6 (3.09) | 16.0 (3.02) | 16.2 (3.14) |
| **West Bengal** | LASSO All + SFE | Total | 17.0 (2.49) | 15.8 (2.43) | 14.1 (2.26) | 14.3 (2.33) | 14.8 (2.32) | 15.2 (2.39) |
| **Andhra Pradesh** | LASSO Demographics | Urban | 15.3 (4.38) | 13.5 (3.13) | 12.8 (2.99) | 13.2 (3.04) | 12.0 (2.99) | 11.8 (2.74) |
| **Andhra Pradesh** | LASSO Demographics | Rural | 20.2 (4.54) | 18.4 (4.25) | 17.5 (4.17) | 18.1 (4.27) | 16.6 (3.78) | 16.5 (3.58) |
| **Andhra Pradesh** | LASSO Demographics | Total | 18.6 (3.36) | 16.7 (3.02) | 16.0 (2.99) | 16.5 (3.04) | 15.2 (2.78) | 15.1 (2.64) |
| **Arunachal Pradesh** | LASSO Demographics | Urban | 17.0 (4.74) | 15.4 (4.21) | 16.9 (4.26) | 14.9 (4.99) | 17.3 (4.06) | 14.5 (3.93) |
| **Arunachal Pradesh** | LASSO Demographics | Rural | 28.9 (5.40) | 26.8 (5.32) | 29.8 (6.27) | 28.0 (5.48) | 33.5 (5.54) | 30.7 (5.35) |
| **Arunachal Pradesh** | LASSO Demographics | Total | 27.0 (4.61) | 24.8 (4.48) | 27.4 (5.15) | 25.5 (4.55) | 30.7 (4.65) | 28.2 (4.57) |
| **Assam** | LASSO Demographics | Urban | 12.5 (3.36) | 12.7 (3.33) | 12.2 (3.35) | 9.8 (3.03) | 13.2 (3.42) | 11.2 (2.83) |
| **Assam** | LASSO Demographics | Rural | 20.6 (3.64) | 19.7 (3.56) | 21.3 (3.78) | 18.5 (3.71) | 25.2 (3.56) | 28.3 (25.59) |
| **Assam** | LASSO Demographics | Total | 19.8 (3.29) | 19.0 (3.21) | 20.2 (3.35) | 17.4 (3.28) | 24.0 (3.21) | 27.7 (24.74) |
| **Bihar** | LASSO Demographics | Urban | 20.6 (3.46) | 20.6 (3.64) | 21.5 (4.37) | 19.7 (3.82) | 20.8 (3.38) | 17.5 (3.28) |
| **Bihar** | LASSO Demographics | Rural | 23.1 (3.31) | 24.3 (3.42) | 23.4 (3.30) | 21.7 (3.30) | 24.9 (3.27) | 24.4 (3.28) |
| **Bihar** | LASSO Demographics | Total | 22.9 (3.03) | 24.0 (3.12) | 23.2 (2.99) | 21.5 (3.01) | 24.6 (3.01) | 23.8 (3.03) |
| **Chhattisgarh** | LASSO Demographics | Urban | 11.2 (3.68) | 9.5 (3.05) | 8.1 (2.50) | 9.8 (3.16) | 9.8 (3.06) | 8.3 (2.87) |
| **Chhattisgarh** | LASSO Demographics | Rural | 19.0 (3.49) | 17.6 (3.54) | 18.1 (3.56) | 16.8 (3.30) | 17.8 (3.32) | 18.3 (3.40) |

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|---|---|---|---|---|---|---|---|---|
| **Chhattisgarh** | LASSO Demographics | Total | 17.6 (2.91) | 16.1 (2.94) | 16.3 (2.95) | 15.4 (2.74) | 16.4 (2.76) | 16.4 (2.82) |
| **Delhi** | LASSO Demographics | Urban | 24.6 (9.02) | 21.6 (7.58) | 18.7 (5.81) | 20.8 (5.96) | 20.0 (5.28) | 20.7 (5.56) |
| **Delhi** | LASSO Demographics | Rural | 60.9 (19.35) | 61.2 (23.04) | 45.9 (19.99) | 43.9 (17.86) | 37.8 (15.38) | 38.9 (17.39) |
| **Delhi** | LASSO Demographics | Total | 25.7 (8.76) | 23.5 (7.30) | 19.8 (5.64) | 21.4 (5.82) | 20.6 (5.12) | 21.2 (5.43) |
| **Gujrat** | LASSO Demographics | Urban | 20.2 (4.33) | 17.7 (4.11) | 18.5 (3.79) | 18.6 (4.02) | 21.7 (4.07) | 20.8 (4.58) |
| **Gujrat** | LASSO Demographics | Rural | 25.1 (4.26) | 26.5 (4.57) | 24.9 (4.31) | 25.2 (4.08) | 24.6 (3.87) | 23.8 (3.90) |
| **Gujrat** | LASSO Demographics | Total | 23.1 (3.08) | 22.7 (3.15) | 22.1 (2.95) | 22.5 (2.92) | 23.3 (2.81) | 22.5 (2.97) |
| **Haryana** | LASSO Demographics | Urban | 25.1 (4.06) | 22.6 (3.76) | 23.7 (3.97) | 25.4 (4.50) | 25.7 (4.22) | 23.6 (4.34) |
| **Haryana** | LASSO Demographics | Rural | 33.4 (5.01) | 34.4 (5.02) | 33.9 (4.99) | 31.5 (5.02) | 30.7 (4.75) | 30.3 (4.56) |
| **Haryana** | LASSO Demographics | Total | 30.6 (3.58) | 30.6 (3.61) | 30.3 (3.52) | 29.5 (3.67) | 29.0 (3.44) | 28.0 (3.35) |
| **Himachal Pradesh** | LASSO Demographics | Urban | 8.0 (3.46) | 5.7 (3.11) | 8.5 (5.01) | 5.8 (2.81) | 5.5 (2.88) | 7.4 (3.85) |
| **Himachal Pradesh** | LASSO Demographics | Rural | 15.8 (4.65) | 14.8 (4.29) | 14.7 (4.57) | 14.2 (4.68) | 14.7 (3.98) | 13.2 (3.79) |
| **Himachal Pradesh** | LASSO Demographics | Total | 15.0 (4.19) | 13.9 (3.87) | 13.9 (4.03) | 13.4 (4.26) | 13.8 (3.61) | 12.6 (3.44) |
| **Jammu & Kashmir** | LASSO Demographics | Urban | 12.7 (4.02) | 12.1 (3.61) | 12.7 (3.85) | 11.3 (3.25) | 14.2 (4.23) | 12.0 (3.17) |
| **Jammu & Kashmir** | LASSO Demographics | Rural | 19.2 (3.84) | 17.6 (3.51) | 20.0 (3.60) | 19.3 (3.69) | 20.2 (3.75) | 20.4 (3.89) |
| **Jammu & Kashmir** | LASSO Demographics | Total | 17.8 (3.14) | 16.4 (2.87) | 18.6 (2.99) | 17.7 (3.03) | 19.0 (3.14) | 18.9 (3.27) |
| **Jharkhand** | LASSO Demographics | Urban | 20.7 (4.33) | 19.1 (5.07) | 19.8 (4.36) | 19.4 (4.46) | 19.7 (4.26) | 18.9 (4.31) |
| **Jharkhand** | LASSO Demographics | Rural | 26.4 (4.41) | 27.2 (4.52) | 25.1 (4.18) | 25.6 (4.50) | 26.6 (4.13) | 25.6 (4.15) |
| **Jharkhand** | LASSO Demographics | Total | 25.3 (3.66) | 25.5 (3.73) | 24.0 (3.44) | 24.3 (3.69) | 25.2 (3.42) | 24.4 (3.51) |
| **Karnataka** | LASSO Demographics | Urban | 19.1 (3.60) | 18.1 (3.46) | 13.6 (3.47) | 15.8 (3.53) | 16.3 (3.38) | 15.5 (3.01) |
| **Karnataka** | LASSO Demographics | Rural | 28.4 (4.26) | 26.4 (3.96) | 26.6 (3.85) | 26.9 (4.00) | 26.6 (3.84) | 26.9 (3.96) |
| **Karnataka** | LASSO Demographics | Total | 24.8 (2.95) | 23.2 (2.78) | 21.3 (2.69) | 22.8 (2.84) | 22.9 (2.75) | 22.8 (2.75) |
| **Kerala** | LASSO Demographics | Urban | 8.8 (2.62) | 8.4 (2.68) | 9.3 (2.77) | 7.9 (2.43) | 8.2 (2.24) | 7.2 (2.16) |
| **Kerala** | LASSO Demographics | Rural | 19.3 (4.41) | 17.7 (4.03) | 17.2 (4.02) | 17.9 (3.96) | 16.6 (3.77) | 16.6 (3.87) |
| **Kerala** | LASSO Demographics | Total | 14.7 (2.73) | 13.4 (2.50) | 13.3 (2.45) | 13.2 (2.39) | 12.4 (2.20) | 12.2 (2.30) |
| **Madhya Pradesh** | LASSO Demographics | Urban | 12.6 (2.55) | 12.0 (2.21) | 11.6 (2.87) | 11.8 (2.31) | 11.0 (2.12) | 10.9 (2.19) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Madhya Pradesh** | LASSO Demographics | Rural | 21.1 (2.84) | 21.1 (2.79) | 21.3 (2.97) | 20.7 (2.82) | 21.8 (2.87) | 19.8 (2.76) |
| **Madhya Pradesh** | LASSO Demographics | Total | 19.1 (2.23) | 18.8 (2.15) | 18.7 (2.31) | 18.3 (2.15) | 19.1 (2.23) | 17.5 (2.14) |
| **Maharashtra** | LASSO Demographics | Urban | 17.5 (3.11) | 18.1 (3.30) | 16.8 (3.14) | 17.0 (3.11) | 16.7 (3.13) | 15.1 (3.17) |
| **Maharashtra** | LASSO Demographics | Rural | 27.7 (3.32) | 27.6 (3.31) | 28.1 (3.33) | 26.9 (3.40) | 28.0 (3.30) | 26.5 (3.27) |
| **Maharashtra** | LASSO Demographics | Total | 23.3 (2.32) | 23.6 (2.37) | 23.3 (2.34) | 23.0 (2.39) | 23.1 (2.31) | 21.7 (2.32) |
| **Manipur** | LASSO Demographics | Urban | 20.3 (5.83) | 20.3 (5.62) | 20.6 (5.80) | 19.7 (5.49) | 22.2 (6.04) | 23.3 (6.37) |
| **Manipur** | LASSO Demographics | Rural | 41.6 (8.14) | 40.8 (8.25) | 40.2 (8.16) | 37.7 (7.74) | 44.4 (7.74) | 43.1 (7.37) |
| **Manipur** | LASSO Demographics | Total | 35.3 (5.99) | 34.9 (6.07) | 34.6 (6.06) | 32.6 (5.77) | 38.5 (5.90) | 37.2 (5.50) |
| **Meghalaya** | LASSO Demographics | Urban | 21.0 (7.58) | 19.5 (6.54) | 22.3 (7.39) | 22.8 (8.10) | 22.2 (6.76) | 20.3 (7.11) |
| **Meghalaya** | LASSO Demographics | Rural | 41.8 (9.30) | 41.0 (9.06) | 48.0 (8.45) | 46.4 (9.33) | 48.6 (7.72) | 48.2 (7.88) |
| **Meghalaya** | LASSO Demographics | Total | 37.9 (7.71) | 37.7 (7.75) | 43.7 (7.15) | 42.2 (7.81) | 44.9 (6.69) | 44.0 (6.77) |
| **Mizoram** | LASSO Demographics | Urban | 17.4 (6.74) | 13.2 (5.53) | 12.3 (5.28) | 13.3 (5.58) | 16.0 (6.48) | 16.5 (5.89) |
| **Mizoram** | LASSO Demographics | Rural | 44.6 (9.30) | 39.8 (9.03) | 37.6 (9.15) | 39.3 (8.15) | 48.0 (7.94) | 45.3 (8.48) |
| **Mizoram** | LASSO Demographics | Total | 31.5 (5.81) | 27.3 (5.44) | 25.6 (5.42) | 26.7 (4.99) | 33.3 (5.22) | 32.0 (5.31) |
| **Nagaland** | LASSO Demographics | Urban | 23.5 (6.26) | 21.4 (6.31) | 22.2 (6.70) | 21.3 (6.37) | 21.7 (6.19) | 23.9 (6.15) |
| **Nagaland** | LASSO Demographics | Rural | 56.3 (7.05) | 54.9 (7.39) | 52.1 (8.86) | 51.1 (8.21) | 61.5 (7.46) | 62.8 (6.91) |
| **Nagaland** | LASSO Demographics | Total | 46.3 (5.26) | 45.4 (5.59) | 42.9 (6.47) | 42.5 (6.13) | 51.6 (5.81) | 52.8 (5.38) |
| **Orissa** | LASSO Demographics | Urban | 8.3 (2.33) | 7.2 (2.38) | 8.8 (2.50) | 8.5 (2.53) | 8.6 (2.38) | 7.2 (2.14) |
| **Orissa** | LASSO Demographics | Rural | 13.5 (2.62) | 14.0 (2.62) | 13.2 (2.58) | 13.0 (2.51) | 14.3 (2.68) | 13.8 (2.66) |
| **Orissa** | LASSO Demographics | Total | 12.7 (2.25) | 13.0 (2.25) | 12.5 (2.22) | 12.3 (2.17) | 13.5 (2.32) | 12.8 (2.30) |
| **Punjab** | LASSO Demographics | Urban | 17.6 (3.56) | 18.6 (3.76) | 17.8 (3.87) | 16.9 (3.54) | 17.7 (3.50) | 17.0 (3.23) |
| **Punjab** | LASSO Demographics | Rural | 15.3 (3.36) | 17.5 (3.94) | 18.0 (3.57) | 18.0 (3.71) | 18.4 (3.69) | 15.9 (3.56) |
| **Punjab** | LASSO Demographics | Total | 16.2 (2.48) | 17.9 (2.82) | 17.9 (2.66) | 17.6 (2.66) | 18.1 (2.71) | 16.3 (2.57) |
| **Rajasthan** | LASSO Demographics | Urban | 16.5 (3.19) | 15.9 (3.22) | 16.6 (3.62) | 15.7 (3.13) | 14.9 (2.94) | 13.8 (2.80) |
| **Rajasthan** | LASSO Demographics | Rural | 25.6 (3.67) | 24.3 (3.45) | 25.2 (3.40) | 24.4 (3.71) | 24.5 (3.36) | 24.4 (3.40) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Rajasthan** | LASSO Demographics | Total | 23.5 (2.92) | 22.2 (2.72) | 23.0 (2.70) | 22.5 (2.97) | 22.0 (2.61) | 21.9 (2.67) |
| **Sikkim** | LASSO Demographics | Urban | 16.1 (8.86) | 15.9 (8.24) | 14.4 (7.87) | 17.9 (8.41) | 17.7 (9.48) | 12.7 (7.88) |
| **Sikkim** | LASSO Demographics | Rural | 21.4 (10.39) | 24.4 (11.08) | 22.8 (10.35) | 18.1 (9.82) | 23.6 (8.61) | 19.9 (7.62) |
| **Sikkim** | LASSO Demographics | Total | 20.0 (7.95) | 22.1 (8.45) | 20.6 (7.99) | 18.0 (7.47) | 22.4 (7.09) | 18.4 (6.24) |
| **Tamil Nadu** | LASSO Demographics | Urban | 10.2 (2.24) | 9.3 (2.30) | 10.0 (2.22) | 9.7 (2.26) | 8.9 (1.80) | 8.9 (1.79) |
| **Tamil Nadu** | LASSO Demographics | Rural | 16.1 (2.82) | 14.4 (2.77) | 15.0 (2.73) | 15.0 (2.80) | 15.4 (2.74) | 14.3 (2.57) |
| **Tamil Nadu** | LASSO Demographics | Total | 13.4 (1.83) | 12.0 (1.82) | 12.7 (1.79) | 12.6 (1.84) | 12.5 (1.73) | 11.9 (1.66) |
| **Telangana** | LASSO Demographics | Urban | 12.7 (4.46) | 12.5 (4.61) | 11.1 (3.88) | 12.5 (4.82) | 10.0 (4.41) | 8.7 (3.52) |
| **Telangana** | LASSO Demographics | Rural | 21.8 (5.74) | 20.4 (5.52) | 19.6 (4.33) | 19.8 (3.54) | 21.8 (3.63) | 20.3 (3.60) |
| **Telangana** | LASSO Demographics | Total | 18.0 (3.86) | 17.1 (3.74) | 16.1 (3.02) | 16.8 (2.88) | 17.6 (2.82) | 16.0 (2.61) |
| **Tripura** | LASSO Demographics | Urban | 11.9 (6.91) | 12.3 (7.38) | 12.6 (7.08) | 11.9 (6.60) | 11.4 (4.54) | 10.3 (4.82) |
| **Tripura** | LASSO Demographics | Rural | 18.7 (9.05) | 16.8 (8.88) | 20.2 (9.56) | 20.0 (9.42) | 20.2 (5.45) | 17.5 (5.21) |
| **Tripura** | LASSO Demographics | Total | 17.3 (7.33) | 15.9 (7.36) | 18.7 (7.76) | 18.4 (7.68) | 18.6 (4.55) | 16.2 (4.39) |
| **Uttar Pradesh** | LASSO Demographics | Urban | 17.4 (2.39) | 17.4 (2.35) | 15.9 (2.31) | 15.5 (2.14) | 16.3 (2.10) | 15.7 (2.05) |
| **Uttar Pradesh** | LASSO Demographics | Rural | 20.3 (2.27) | 18.6 (2.18) | 18.9 (2.17) | 18.0 (2.16) | 18.9 (2.18) | 18.0 (2.10) |
| **Uttar Pradesh** | LASSO Demographics | Total | 19.7 (1.87) | 18.4 (1.77) | 18.2 (1.76) | 17.5 (1.78) | 18.4 (1.80) | 17.6 (1.73) |
| **Uttaranchal** | LASSO Demographics | Urban | 9.2 (3.40) | 10.9 (4.18) | 10.0 (3.80) | 8.1 (3.69) | 8.6 (3.32) | 10.5 (5.07) |
| **Uttaranchal** | LASSO Demographics | Rural | 19.9 (5.75) | 22.0 (5.88) | 20.3 (5.31) | 21.6 (5.44) | 19.3 (5.17) | 19.2 (5.11) |
| **Uttaranchal** | LASSO Demographics | Total | 16.8 (4.24) | 19.0 (4.40) | 17.5 (4.00) | 17.7 (4.01) | 16.6 (3.96) | 17.0 (4.00) |
| **West Bengal** | LASSO Demographics | Urban | 13.8 (2.91) | 13.0 (2.84) | 11.1 (2.60) | 11.1 (2.49) | 11.3 (2.47) | 11.8 (2.63) |
| **West Bengal** | LASSO Demographics | Rural | 16.9 (3.35) | 16.3 (3.14) | 14.9 (3.05) | 14.7 (3.10) | 15.7 (3.10) | 15.5 (3.06) |
| **West Bengal** | LASSO Demographics | Total | 15.9 (2.50) | 15.2 (2.32) | 13.7 (2.26) | 13.6 (2.32) | 14.5 (2.35) | 14.4 (2.31) |
| **Andhra Pradesh** | LASSO Demographics + SFE | Urban | 11.5 (3.86) | 10.2 (2.75) | 9.5 (2.63) | 9.8 (2.68) | 8.9 (2.55) | 8.6 (2.30) |
| **Andhra Pradesh** | LASSO Demographics + SFE | Rural | 11.0 (3.00) | 9.5 (2.72) | 9.0 (2.73) | 9.5 (2.78) | 8.3 (2.46) | 8.3 (2.50) |
| **Andhra Pradesh** | LASSO Demographics + SFE | Total | 11.1 (2.38) | 9.7 (2.04) | 9.1 (2.04) | 9.6 (2.07) | 8.4 (1.88) | 8.4 (1.88) |

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|---|---|---|---|---|---|---|---|---|
| **Arunachal Pradesh** | LASSO Demographics + SFE | Urban | 17.1 (4.94) | 15.2 (4.36) | 16.8 (4.65) | 14.6 (4.82) | 17.3 (4.58) | 14.1 (4.19) |
| **Arunachal Pradesh** | LASSO Demographics + SFE | Rural | 21.9 (4.87) | 19.9 (4.43) | 22.9 (5.54) | 21.1 (4.74) | 25.7 (5.19) | 23.6 (4.87) |
| **Arunachal Pradesh** | LASSO Demographics + SFE | Total | 21.1 (4.17) | 19.1 (3.76) | 21.8 (4.58) | 19.9 (3.96) | 24.3 (4.38) | 22.2 (4.17) |
| **Assam** | LASSO Demographics + SFE | Urban | 16.6 (4.16) | 16.8 (4.05) | 15.9 (4.16) | 13.2 (3.77) | 17.4 (4.47) | 15.0 (3.78) |
| **Assam** | LASSO Demographics + SFE | Rural | 30.5 (4.36) | 29.4 (4.27) | 31.5 (4.34) | 28.0 (4.15) | 36.6 (4.37) | 42.2 (27.33) |
| **Assam** | LASSO Demographics + SFE | Total | 29.1 (3.95) | 28.1 (3.85) | 29.6 (3.85) | 26.2 (3.67) | 34.7 (3.95) | 41.3 (26.42) |
| **Bihar** | LASSO Demographics + SFE | Urban | 31.3 (4.31) | 30.9 (4.58) | 32.7 (5.10) | 30.1 (4.64) | 31.0 (4.18) | 27.2 (4.24) |
| **Bihar** | LASSO Demographics + SFE | Rural | 29.0 (3.75) | 30.2 (3.75) | 29.2 (3.67) | 27.2 (3.61) | 30.6 (3.75) | 30.2 (3.62) |
| **Bihar** | LASSO Demographics + SFE | Total | 29.2 (3.44) | 30.2 (3.43) | 29.5 (3.32) | 27.5 (3.30) | 30.7 (3.46) | 30.0 (3.35) |
| **Chhattisgarh** | LASSO Demographics + SFE | Urban | 18.1 (4.78) | 15.9 (4.30) | 13.3 (3.71) | 16.0 (4.49) | 15.9 (4.24) | 14.2 (4.09) |
| **Chhattisgarh** | LASSO Demographics + SFE | Rural | 34.3 (4.84) | 32.8 (4.79) | 32.8 (4.77) | 31.1 (4.69) | 32.7 (4.71) | 33.1 (4.74) |
| **Chhattisgarh** | LASSO Demographics + SFE | Total | 31.2 (4.02) | 29.7 (3.98) | 29.3 (3.96) | 28.2 (3.89) | 29.5 (3.91) | 29.6 (3.93) |
| **Delhi** | LASSO Demographics + SFE | Urban | 11.8 (5.72) | 10.5 (4.91) | 8.3 (4.01) | 9.5 (4.28) | 9.0 (3.82) | 9.3 (4.17) |
| **Delhi** | LASSO Demographics + SFE | Rural | 26.8 (20.47) | 28.0 (25.14) | 14.6 (14.41) | 14.6 (13.21) | 12.0 (11.16) | 12.5 (11.41) |
| **Delhi** | LASSO Demographics + SFE | Total | 12.3 (5.58) | 11.3 (4.83) | 8.6 (3.90) | 9.6 (4.17) | 9.1 (3.71) | 9.4 (4.07) |
| **Gujrat** | LASSO Demographics + SFE | Urban | 12.4 (3.44) | 10.4 (2.90) | 11.2 (3.00) | 11.2 (3.08) | 13.5 (3.25) | 13.2 (3.65) |
| **Gujrat** | LASSO Demographics + SFE | Rural | 13.9 (3.41) | 15.4 (3.69) | 14.1 (3.35) | 14.3 (3.23) | 13.6 (3.16) | 13.4 (3.06) |
| **Gujrat** | LASSO Demographics + SFE | Total | 13.3 (2.46) | 13.2 (2.45) | 12.9 (2.31) | 13.0 (2.29) | 13.5 (2.28) | 13.3 (2.35) |
| **Haryana** | LASSO Demographics + SFE | Urban | 11.0 (3.01) | 9.7 (2.60) | 10.4 (2.93) | 11.2 (3.33) | 11.4 (2.99) | 10.1 (2.93) |
| **Haryana** | LASSO Demographics + SFE | Rural | 9.3 (2.86) | 9.6 (2.89) | 9.4 (2.86) | 8.4 (2.55) | 7.8 (2.43) | 7.7 (2.45) |
| **Haryana** | LASSO Demographics + SFE | Total | 9.9 (2.15) | 9.6 (2.13) | 9.8 (2.12) | 9.3 (2.03) | 9.1 (1.90) | 8.5 (1.90) |
| **Himachal Pradesh** | LASSO Demographics + SFE | Urban | 5.4 (2.98) | 3.2 (2.11) | 5.5 (4.21) | 3.4 (2.15) | 3.5 (2.32) | 4.9 (3.36) |
| **Himachal Pradesh** | LASSO Demographics + SFE | Rural | 5.9 (2.47) | 5.5 (2.33) | 5.4 (2.31) | 5.1 (2.31) | 5.6 (2.22) | 4.6 (1.88) |
| **Himachal Pradesh** | LASSO Demographics + SFE | Total | 5.9 (2.24) | 5.3 (2.10) | 5.4 (2.08) | 5.0 (2.10) | 5.4 (2.02) | 4.6 (1.73) |
| **Jammu & Kashmir** | LASSO Demographics + SFE | Urban | 7.7 (2.98) | 7.4 (2.73) | 7.6 (2.87) | 6.7 (2.61) | 9.0 (3.26) | 7.1 (2.62) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Jammu & Kashmir** | LASSO Demographics + SFE | Rural | 8.7 (2.53) | 7.8 (2.36) | 9.3 (2.59) | 8.7 (2.48) | 9.7 (2.80) | 9.3 (2.59) |
| **Jammu & Kashmir** | LASSO Demographics + SFE | Total | 8.5 (2.09) | 7.7 (1.95) | 9.0 (2.15) | 8.3 (2.05) | 9.5 (2.35) | 8.9 (2.19) |
| **Jharkhand** | LASSO Demographics + SFE | Urban | 25.3 (5.44) | 23.7 (6.29) | 24.7 (5.62) | 24.0 (5.70) | 23.9 (5.29) | 23.2 (5.21) |
| **Jharkhand** | LASSO Demographics + SFE | Rural | 38.2 (5.01) | 39.2 (5.27) | 36.6 (5.06) | 37.4 (5.29) | 38.4 (5.04) | 37.3 (4.93) |
| **Jharkhand** | LASSO Demographics + SFE | Total | 35.8 (4.19) | 36.0 (4.37) | 34.1 (4.17) | 34.7 (4.37) | 35.6 (4.17) | 34.8 (4.18) |
| **Karnataka** | LASSO Demographics + SFE | Urban | 16.7 (3.39) | 15.8 (3.28) | 11.5 (2.95) | 13.5 (2.99) | 14.1 (2.96) | 13.5 (2.83) |
| **Karnataka** | LASSO Demographics + SFE | Rural | 20.7 (3.74) | 18.9 (3.38) | 18.9 (3.38) | 19.2 (3.46) | 19.2 (3.28) | 19.3 (3.45) |
| **Karnataka** | LASSO Demographics + SFE | Total | 19.1 (2.63) | 17.7 (2.43) | 15.9 (2.34) | 17.1 (2.45) | 17.4 (2.36) | 17.2 (2.43) |
| **Kerala** | LASSO Demographics + SFE | Urban | 6.6 (2.11) | 6.1 (1.94) | 6.9 (2.17) | 5.9 (1.89) | 6.0 (1.89) | 5.1 (1.63) |
| **Kerala** | LASSO Demographics + SFE | Rural | 7.5 (2.28) | 6.8 (2.04) | 6.3 (1.91) | 6.8 (2.06) | 6.1 (1.86) | 6.0 (1.92) |
| **Kerala** | LASSO Demographics + SFE | Total | 7.1 (1.58) | 6.5 (1.42) | 6.6 (1.44) | 6.4 (1.41) | 6.1 (1.33) | 5.6 (1.27) |
| **Madhya Pradesh** | LASSO Demographics + SFE | Urban | 17.5 (3.02) | 16.9 (2.76) | 16.3 (3.30) | 16.7 (2.77) | 15.4 (2.59) | 15.3 (2.72) |
| **Madhya Pradesh** | LASSO Demographics + SFE | Rural | 27.8 (3.23) | 27.7 (3.18) | 28.0 (3.23) | 27.3 (3.06) | 28.7 (3.14) | 26.0 (3.02) |
| **Madhya Pradesh** | LASSO Demographics + SFE | Total | 25.3 (2.55) | 24.9 (2.46) | 24.8 (2.52) | 24.4 (2.36) | 25.5 (2.45) | 23.3 (2.36) |
| **Maharashtra** | LASSO Demographics + SFE | Urban | 14.2 (2.67) | 14.8 (2.77) | 13.5 (2.61) | 13.6 (2.59) | 13.3 (2.59) | 12.0 (2.56) |
| **Maharashtra** | LASSO Demographics + SFE | Rural | 22.7 (2.99) | 22.7 (2.98) | 23.2 (3.05) | 22.0 (2.94) | 23.1 (2.96) | 21.5 (2.73) |
| **Maharashtra** | LASSO Demographics + SFE | Total | 19.0 (2.05) | 19.3 (2.08) | 19.1 (2.08) | 18.6 (2.05) | 18.9 (2.02) | 17.5 (1.92) |
| **Manipur** | LASSO Demographics + SFE | Urban | 35.6 (7.89) | 35.0 (8.16) | 35.8 (8.02) | 34.0 (7.94) | 38.1 (8.58) | 39.5 (8.36) |
| **Manipur** | LASSO Demographics + SFE | Rural | 35.2 (7.43) | 34.9 (7.61) | 33.7 (7.41) | 32.1 (7.33) | 38.1 (7.30) | 36.5 (7.06) |
| **Manipur** | LASSO Demographics + SFE | Total | 35.3 (5.73) | 34.9 (5.89) | 34.3 (5.77) | 32.7 (5.72) | 38.1 (5.82) | 37.4 (5.54) |
| **Meghalaya** | LASSO Demographics + SFE | Urban | 15.1 (6.64) | 13.9 (5.76) | 16.1 (6.25) | 16.9 (6.74) | 16.6 (6.15) | 14.8 (6.06) |
| **Meghalaya** | LASSO Demographics + SFE | Rural | 21.1 (6.89) | 21.4 (6.89) | 28.5 (7.24) | 25.7 (7.86) | 28.3 (7.34) | 28.4 (7.30) |
| **Meghalaya** | LASSO Demographics + SFE | Total | 20.0 (5.76) | 20.3 (5.90) | 26.4 (6.12) | 24.1 (6.58) | 26.6 (6.35) | 26.3 (6.26) |
| **Mizoram** | LASSO Demographics + SFE | Urban | 9.3 (4.39) | 6.6 (3.57) | 6.1 (3.27) | 6.7 (3.46) | 8.5 (4.02) | 8.3 (3.78) |
| **Mizoram** | LASSO Demographics + SFE | Rural | 28.8 (8.25) | 24.9 (7.47) | 22.4 (7.23) | 24.6 (7.15) | 31.4 (7.91) | 29.2 (7.92) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Mizoram** | LASSO Demographics + SFE | Total | 19.4 (4.77) | 16.3 (4.29) | 14.7 (4.11) | 15.9 (4.05) | 20.9 (4.65) | 19.5 (4.60) |
| **Nagaland** | LASSO Demographics + SFE | Urban | 15.7 (5.42) | 14.4 (5.16) | 14.8 (5.11) | 13.9 (4.97) | 14.5 (5.31) | 15.9 (5.28) |
| **Nagaland** | LASSO Demographics + SFE | Rural | 23.8 (5.92) | 22.8 (6.31) | 20.0 (6.34) | 19.8 (5.91) | 28.7 (6.66) | 29.0 (6.67) |
| **Nagaland** | LASSO Demographics + SFE | Total | 21.3 (4.43) | 20.4 (4.75) | 18.4 (4.66) | 18.1 (4.45) | 25.2 (5.17) | 25.6 (5.14) |
| **Orissa** | LASSO Demographics + SFE | Urban | 13.8 (3.32) | 12.4 (3.25) | 14.3 (3.45) | 14.3 (3.71) | 14.5 (3.36) | 12.5 (3.18) |
| **Orissa** | LASSO Demographics + SFE | Rural | 30.6 (3.75) | 31.2 (3.68) | 29.8 (3.74) | 29.3 (3.68) | 32.0 (3.76) | 30.9 (3.79) |
| **Orissa** | LASSO Demographics + SFE | Total | 28.0 (3.22) | 28.3 (3.15) | 27.4 (3.21) | 27.0 (3.17) | 29.5 (3.27) | 28.3 (3.29) |
| **Punjab** | LASSO Demographics + SFE | Urban | 8.4 (2.40) | 9.2 (2.54) | 8.7 (2.47) | 8.4 (2.24) | 8.6 (2.35) | 8.2 (2.17) |
| **Punjab** | LASSO Demographics + SFE | Rural | 3.3 (1.25) | 3.8 (1.48) | 4.0 (1.51) | 4.0 (1.52) | 4.0 (1.52) | 3.2 (1.31) |
| **Punjab** | LASSO Demographics + SFE | Total | 5.3 (1.20) | 5.9 (1.34) | 5.8 (1.33) | 5.7 (1.27) | 5.6 (1.28) | 5.0 (1.14) |
| **Rajasthan** | LASSO Demographics + SFE | Urban | 12.6 (2.98) | 12.1 (2.99) | 12.9 (3.09) | 12.1 (2.90) | 11.4 (2.67) | 10.5 (2.46) |
| **Rajasthan** | LASSO Demographics + SFE | Rural | 14.4 (2.72) | 13.3 (2.58) | 14.2 (2.77) | 13.5 (2.91) | 13.6 (2.64) | 13.6 (2.59) |
| **Rajasthan** | LASSO Demographics + SFE | Total | 14.0 (2.20) | 13.0 (2.08) | 13.8 (2.21) | 13.2 (2.35) | 13.1 (2.07) | 12.8 (2.06) |
| **Sikkim** | LASSO Demographics + SFE | Urban | 9.4 (6.94) | 9.3 (6.38) | 8.1 (6.41) | 10.6 (6.67) | 10.5 (7.49) | 7.0 (5.86) |
| **Sikkim** | LASSO Demographics + SFE | Rural | 13.0 (7.31) | 15.0 (7.56) | 14.4 (7.60) | 10.2 (6.44) | 14.5 (7.00) | 12.2 (6.09) |
| **Sikkim** | LASSO Demographics + SFE | Total | 12.0 (5.65) | 13.5 (5.82) | 12.8 (5.91) | 10.3 (5.01) | 13.7 (5.75) | 11.1 (4.97) |
| **Tamil Nadu** | LASSO Demographics + SFE | Urban | 8.3 (1.92) | 7.2 (1.86) | 8.0 (1.88) | 7.7 (1.80) | 6.9 (1.59) | 7.1 (1.60) |
| **Tamil Nadu** | LASSO Demographics + SFE | Rural | 10.3 (2.11) | 9.0 (2.00) | 9.5 (2.03) | 9.4 (2.03) | 9.8 (2.06) | 8.9 (1.92) |
| **Tamil Nadu** | LASSO Demographics + SFE | Total | 9.4 (1.44) | 8.2 (1.37) | 8.8 (1.39) | 8.6 (1.37) | 8.5 (1.35) | 8.1 (1.30) |
| **Telangana** | LASSO Demographics + SFE | Urban | 7.9 (3.16) | 7.7 (3.20) | 6.9 (2.93) | 7.7 (3.44) | 6.0 (2.92) | 5.0 (2.32) |
| **Telangana** | LASSO Demographics + SFE | Rural | 10.3 (3.57) | 9.5 (3.20) | 8.5 (2.90) | 8.7 (2.39) | 10.1 (2.68) | 9.3 (2.70) |
| **Telangana** | LASSO Demographics + SFE | Total | 9.3 (2.47) | 8.8 (2.29) | 7.8 (2.10) | 8.3 (1.99) | 8.7 (2.02) | 7.7 (1.90) |
| **Tripura** | LASSO Demographics + SFE | Urban | 11.0 (6.00) | 10.9 (6.32) | 11.6 (6.57) | 11.1 (6.34) | 10.2 (4.78) | 9.4 (5.08) |
| **Tripura** | LASSO Demographics + SFE | Rural | 12.5 (6.38) | 10.3 (5.50) | 13.5 (6.76) | 13.2 (6.41) | 13.6 (5.21) | 11.5 (4.69) |
| **Tripura** | LASSO Demographics + SFE | Total | 12.2 (5.22) | 10.4 (4.63) | 13.1 (5.56) | 12.8 (5.30) | 13.0 (4.37) | 11.1 (3.98) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Uttar Pradesh** | LASSO Demographics + SFE | Urban | 21.2 (2.58) | 21.1 (2.51) | 19.5 (2.39) | 19.2 (2.40) | 19.9 (2.28) | 19.3 (2.28) |
| **Uttar Pradesh** | LASSO Demographics + SFE | Rural | 24.2 (2.42) | 22.1 (2.19) | 22.5 (2.36) | 21.5 (2.26) | 22.6 (2.27) | 21.6 (2.27) |
| **Uttar Pradesh** | LASSO Demographics + SFE | Total | 23.6 (2.00) | 21.8 (1.79) | 21.8 (1.91) | 21.0 (1.87) | 22.1 (1.88) | 21.1 (1.88) |
| **Uttaranchal** | LASSO Demographics + SFE | Urban | 8.2 (3.41) | 10.1 (4.01) | 9.2 (3.82) | 7.4 (3.77) | 7.7 (3.35) | 9.7 (4.99) |
| **Uttaranchal** | LASSO Demographics + SFE | Rural | 11.2 (4.58) | 12.3 (4.37) | 11.5 (3.91) | 12.1 (4.16) | 10.4 (3.77) | 10.4 (3.95) |
| **Uttaranchal** | LASSO Demographics + SFE | Total | 10.4 (3.42) | 11.7 (3.35) | 10.8 (3.04) | 10.8 (3.15) | 9.7 (2.95) | 10.2 (3.20) |
| **West Bengal** | LASSO Demographics + SFE | Urban | 15.2 (3.51) | 14.4 (3.34) | 12.1 (3.07) | 12.1 (2.78) | 12.4 (3.00) | 13.1 (3.06) |
| **West Bengal** | LASSO Demographics + SFE | Rural | 18.9 (3.55) | 18.4 (3.44) | 16.8 (3.21) | 16.6 (3.25) | 17.4 (3.29) | 17.6 (3.29) |
| **West Bengal** | LASSO Demographics + SFE | Total | 17.8 (2.69) | 17.1 (2.57) | 15.4 (2.42) | 15.3 (2.45) | 16.0 (2.52) | 16.3 (2.51) |

**Appendix Table 45** State estimates of poverty rate (in percentages) for 2017/18-2022/23 based on the imputation out of EUS 2011/12 into PLFS at the sector-level. The EUS-poverty lines corresponding to the CES MRP measure are used to determine poverty status. Different approaches are either LASSO using all variables (including wage data) or only demographics as well as an economically reasoned model that includes wage data as well. SFE stands for inclusion of state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| State | Dataset | Sector | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | LASSO All, sectorwide model | Rural | 11.5 (2.62) | 9.7 (2.39) | 9.1 (2.29) | 9.2 (2.40) | 7.8 (2.12) | 8.2 (2.13) |
| **Andhra Pradesh** | LASSO All, statewide model | Rural | 11.7 (2.52) | 9.4 (2.16) | 9.2 (2.10) | 8.7 (2.11) | 7.9 (2.02) | 8.6 (2.26) |
| **Andhra Pradesh** | LASSO Demographics, sectorwide model | Rural | 11.7 (2.73) | 10.5 (2.51) | 9.7 (2.37) | 9.9 (2.46) | 9.1 (2.15) | 9.6 (2.23) |
| **Andhra Pradesh** | Economically Reasoned, All, sectorwide model | Rural | 12.1 (2.77) | 10.1 (2.43) | 9.3 (2.33) | 9.1 (2.31) | 8.2 (2.12) | 8.6 (2.17) |
| **Andhra Pradesh** | LASSO All, sectorwide model | Total | 10.6 (1.94) | 8.9 (1.71) | 8.3 (1.65) | 8.4 (1.70) | 7.1 (1.55) | 7.4 (1.56) |
| **Andhra Pradesh** | LASSO All, statewide model | Total | 10.7 (1.92) | 8.6 (1.55) | 8.2 (1.51) | 7.9 (1.51) | 7.0 (1.47) | 7.6 (1.63) |
| **Andhra Pradesh** | LASSO Demographics, sectorwide model | Total | 11.5 (2.09) | 10.1 (1.81) | 9.5 (1.71) | 9.8 (1.78) | 8.8 (1.62) | 9.2 (1.65) |
| **Andhra Pradesh** | Economically Reasoned, All, sectorwide model | Total | 11.0 (2.03) | 9.2 (1.73) | 8.5 (1.67) | 8.4 (1.64) | 7.4 (1.55) | 7.7 (1.59) |
| **Andhra Pradesh** | LASSO All, sectorwide model | Urban | 8.7 (2.52) | 7.4 (1.83) | 6.7 (1.66) | 6.9 (1.65) | 5.4 (1.60) | 5.6 (1.57) |
| **Andhra Pradesh** | LASSO All, statewide model | Urban | 8.8 (2.79) | 6.9 (1.74) | 6.2 (1.51) | 6.2 (1.53) | 5.0 (1.40) | 5.1 (1.35) |
| **Andhra Pradesh** | LASSO Demographics, sectorwide model | Urban | 10.9 (3.10) | 9.4 (2.07) | 8.9 (1.83) | 9.7 (2.04) | 8.3 (2.02) | 8.3 (1.80) |
| **Andhra Pradesh** | Economically Reasoned, All, sectorwide model | Urban | 8.7 (2.52) | 7.4 (1.83) | 6.7 (1.66) | 6.9 (1.65) | 5.4 (1.60) | 5.6 (1.57) |
| **Arunachal Pradesh** | LASSO All, sectorwide model | Rural | 25.3 (7.23) | 23.9 (6.97) | 27.3 (8.35) | 24.3 (7.04) | 29.8 (6.95) | 27.9 (6.93) |
| **Arunachal Pradesh** | LASSO All, statewide model | Rural | 22.8 (6.32) | 21.8 (6.04) | 24.4 (7.10) | 23.0 (6.45) | 28.4 (6.59) | 29.7 (7.02) |
| **Arunachal Pradesh** | LASSO Demographics, sectorwide model | Rural | 26.6 (7.76) | 25.0 (7.70) | 27.1 (8.79) | 24.5 (7.37) | 28.7 (7.74) | 26.7 (7.49) |
| **Arunachal Pradesh** | Economically Reasoned, All, sectorwide model | Rural | 25.9 (7.30) | 23.8 (7.10) | 27.0 (8.23) | 25.3 (7.02) | 31.2 (7.35) | 31.5 (7.50) |
| **Arunachal Pradesh** | LASSO All, sectorwide model | Total | 24.5 (6.18) | 23.0 (5.91) | 25.8 (6.89) | 23.6 (5.88) | 28.5 (5.88) | 26.9 (5.97) |
| **Arunachal Pradesh** | LASSO All, statewide model | Total | 22.6 (5.44) | 21.7 (5.16) | 23.8 (5.89) | 22.9 (5.47) | 27.4 (5.57) | 28.6 (6.04) |
| **Arunachal Pradesh** | LASSO Demographics, sectorwide model | Total | 25.8 (6.63) | 24.5 (6.52) | 26.0 (7.24) | 24.0 (6.18) | 27.8 (6.52) | 26.1 (6.43) |
| **Arunachal Pradesh** | Economically Reasoned, All, sectorwide model | Total | 24.9 (6.24) | 23.0 (6.01) | 25.5 (6.79) | 24.5 (5.87) | 29.6 (6.21) | 30.0 (6.44) |
| **Arunachal Pradesh** | LASSO All, sectorwide model | Urban | 19.7 (6.82) | 19.0 (6.81) | 19.2 (6.76) | 20.6 (7.24) | 21.8 (6.63) | 21.7 (7.04) |
| **Arunachal Pradesh** | LASSO All, statewide model | Urban | 21.6 (7.11) | 21.2 (7.05) | 21.3 (6.79) | 22.2 (8.33) | 22.3 (6.34) | 22.6 (6.97) |
| **Arunachal Pradesh** | LASSO Demographics, sectorwide model | Urban | 21.4 (7.12) | 21.8 (7.39) | 21.5 (7.04) | 21.7 (8.00) | 23.4 (6.66) | 22.7 (7.03) |
| **Arunachal Pradesh** | Economically Reasoned, All, sectorwide model | Urban | 19.7 (6.82) | 19.0 (6.81) | 19.2 (6.76) | 20.6 (7.24) | 21.8 (6.63) | 21.7 (7.04) |
| **Assam** | LASSO All, sectorwide model | Rural | 26.0 (3.04) | 24.7 (3.02) | 25.6 (3.05) | 21.9 (2.94) | 30.0 (3.36) | 37.0 (26.38) |
| **Assam** | LASSO All, statewide model | Rural | 26.6 (3.14) | 25.8 (3.18) | 26.4 (3.27) | 22.5 (3.09) | 29.8 (3.69) | 37.7 (26.59) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Assam** | LASSO Demographics, sectorwide model | Rural | 28.6 (2.91) | 28.2 (2.94) | 29.8 (3.15) | 25.8 (3.00) | 35.6 (3.30) | 43.8 (26.81) |
| **Assam** | Economically Reasoned, All, sectorwide model | Rural | 25.6 (2.97) | 24.6 (3.01) | 26.0 (3.25) | 21.8 (2.87) | 29.8 (3.69) | 36.0 (26.18) |
| **Assam** | LASSO All, sectorwide model | Total | 24.7 (2.76) | 23.4 (2.74) | 24.0 (2.72) | 20.5 (2.62) | 28.2 (3.04) | 36.1 (25.51) |
| **Assam** | LASSO All, statewide model | Total | 25.2 (2.85) | 24.4 (2.88) | 24.6 (2.90) | 21.1 (2.75) | 27.8 (3.33) | 36.8 (25.71) |
| **Assam** | LASSO Demographics, sectorwide model | Total | 27.5 (2.66) | 27.1 (2.67) | 28.2 (2.82) | 24.5 (2.69) | 33.8 (3.01) | 42.9 (25.92) |
| **Assam** | Economically Reasoned, All, sectorwide model | Total | 24.4 (2.70) | 23.4 (2.73) | 24.3 (2.89) | 20.4 (2.55) | 28.0 (3.34) | 35.2 (25.32) |
| **Assam** | LASSO All, sectorwide model | Urban | 13.1 (3.68) | 12.7 (3.67) | 12.3 (3.49) | 10.8 (3.27) | 12.2 (4.29) | 12.0 (3.92) |
| **Assam** | LASSO All, statewide model | Urban | 12.4 (3.61) | 12.6 (3.76) | 11.6 (3.42) | 10.8 (3.41) | 10.6 (3.92) | 10.4 (3.59) |
| **Assam** | LASSO Demographics, sectorwide model | Urban | 17.5 (4.56) | 17.3 (4.41) | 16.7 (4.23) | 14.6 (4.17) | 18.8 (4.86) | 17.2 (4.36) |
| **Assam** | Economically Reasoned, All, sectorwide model | Urban | 13.1 (3.68) | 12.7 (3.67) | 12.3 (3.49) | 10.8 (3.27) | 12.2 (4.29) | 12.0 (3.92) |
| **Bihar** | LASSO All, sectorwide model | Rural | 27.6 (3.53) | 29.1 (3.70) | 28.2 (3.57) | 25.5 (3.43) | 30.2 (3.82) | 29.7 (3.74) |
| **Bihar** | LASSO All, statewide model | Rural | 27.1 (3.44) | 28.3 (3.72) | 27.3 (3.46) | 24.9 (3.34) | 29.7 (3.60) | 30.0 (3.58) |
| **Bihar** | LASSO Demographics, sectorwide model | Rural | 27.5 (3.46) | 29.1 (3.48) | 27.9 (3.36) | 25.4 (3.33) | 30.0 (3.61) | 29.4 (3.52) |
| **Bihar** | Economically Reasoned, All, sectorwide model | Rural | 27.7 (3.51) | 29.2 (3.72) | 27.9 (3.64) | 25.4 (3.45) | 29.3 (3.73) | 28.9 (3.64) |
| **Bihar** | LASSO All, sectorwide model | Total | 27.7 (3.22) | 29.0 (3.38) | 28.3 (3.21) | 25.7 (3.12) | 30.2 (3.52) | 29.4 (3.45) |
| **Bihar** | LASSO All, statewide model | Total | 27.2 (3.14) | 28.2 (3.39) | 27.5 (3.11) | 25.2 (3.04) | 29.7 (3.32) | 29.7 (3.31) |
| **Bihar** | LASSO Demographics, sectorwide model | Total | 27.6 (3.16) | 29.0 (3.17) | 28.0 (3.02) | 25.6 (3.03) | 30.0 (3.32) | 29.0 (3.25) |
| **Bihar** | Economically Reasoned, All, sectorwide model | Total | 27.8 (3.21) | 29.1 (3.39) | 28.0 (3.27) | 25.7 (3.14) | 29.4 (3.43) | 28.7 (3.37) |
| **Bihar** | LASSO All, sectorwide model | Urban | 28.6 (2.98) | 28.3 (3.04) | 29.3 (3.49) | 28.1 (3.09) | 30.2 (3.10) | 26.0 (3.01) |
| **Bihar** | LASSO All, statewide model | Urban | 28.3 (2.87) | 28.0 (2.93) | 28.9 (3.46) | 28.5 (2.94) | 30.0 (3.05) | 26.6 (2.94) |
| **Bihar** | LASSO Demographics, sectorwide model | Urban | 28.6 (3.09) | 28.7 (3.20) | 29.5 (3.48) | 27.6 (3.04) | 29.7 (3.11) | 25.2 (3.00) |
| **Bihar** | Economically Reasoned, All, sectorwide model | Urban | 28.6 (2.98) | 28.3 (3.04) | 29.3 (3.49) | 28.1 (3.09) | 30.2 (3.10) | 26.0 (3.01) |
| **Chhattisgarh** | LASSO All, sectorwide model | Rural | 32.1 (3.69) | 28.5 (4.05) | 29.5 (3.60) | 27.2 (3.69) | 27.3 (4.17) | 29.8 (3.96) |
| **Chhattisgarh** | LASSO All, statewide model | Rural | 32.2 (3.64) | 28.7 (4.06) | 29.6 (3.65) | 27.5 (3.73) | 27.1 (3.94) | 29.3 (3.89) |
| **Chhattisgarh** | LASSO Demographics, sectorwide model | Rural | 32.2 (3.57) | 30.2 (3.49) | 30.2 (3.48) | 28.5 (3.42) | 30.4 (3.50) | 31.3 (3.52) |
| **Chhattisgarh** | Economically Reasoned, All, sectorwide model | Rural | 32.4 (3.79) | 28.4 (4.12) | 30.1 (3.83) | 27.5 (3.83) | 28.0 (4.18) | 30.2 (4.02) |
| **Chhattisgarh** | LASSO All, sectorwide model | Total | 29.9 (3.08) | 26.4 (3.36) | 26.5 (2.99) | 25.1 (3.05) | 25.3 (3.45) | 26.9 (3.28) |
| **Chhattisgarh** | LASSO All, statewide model | Total | 29.8 (3.05) | 26.6 (3.37) | 26.6 (3.03) | 25.3 (3.08) | 25.0 (3.28) | 26.4 (3.22) |
| **Chhattisgarh** | LASSO Demographics, sectorwide model | Total | 29.6 (2.98) | 27.6 (2.91) | 27.1 (2.89) | 26.2 (2.83) | 27.7 (2.91) | 27.9 (2.91) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Chhattisgarh** | Economically Reasoned, All, sectorwide model | Total | 30.1 (3.16) | 26.3 (3.42) | 27.0 (3.17) | 25.4 (3.16) | 25.9 (3.46) | 27.3 (3.32) |
| **Chhattisgarh** | LASSO All, sectorwide model | Urban | 20.3 (3.95) | 17.2 (3.57) | 13.0 (2.70) | 16.3 (3.19) | 16.5 (3.44) | 14.4 (3.33) |
| **Chhattisgarh** | LASSO All, statewide model | Urban | 19.6 (4.14) | 17.5 (3.57) | 13.1 (2.80) | 16.0 (3.32) | 16.2 (3.58) | 13.7 (3.17) |
| **Chhattisgarh** | LASSO Demographics, sectorwide model | Urban | 18.7 (3.74) | 16.2 (3.24) | 12.9 (2.60) | 16.1 (3.06) | 16.1 (3.23) | 13.1 (3.00) |
| **Chhattisgarh** | Economically Reasoned, All, sectorwide model | Urban | 20.3 (3.95) | 17.2 (3.57) | 13.0 (2.70) | 16.3 (3.19) | 16.5 (3.44) | 14.4 (3.33) |
| **Delhi** | LASSO All, sectorwide model | Rural | 28.5 (15.18) | 29.0 (21.95) | 27.6 (13.43) | 32.6 (13.87) | 28.7 (14.48) | 33.2 (15.96) |
| **Delhi** | LASSO All, statewide model | Rural | 12.8 (16.71) | 15.5 (21.79) | 9.6 (13.12) | 8.6 (11.48) | 8.2 (10.57) | 9.1 (11.09) |
| **Delhi** | LASSO Demographics, sectorwide model | Rural | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) |
| **Delhi** | Economically Reasoned, All, sectorwide model | Rural | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) |
| **Delhi** | LASSO All, sectorwide model | Total | 14.6 (3.60) | 11.4 (3.07) | 9.1 (2.58) | 9.6 (2.50) | 8.9 (2.52) | 9.2 (2.89) |
| **Delhi** | LASSO All, statewide model | Total | 12.8 (3.58) | 10.2 (2.86) | 8.0 (2.69) | 9.2 (2.50) | 8.7 (2.55) | 8.9 (2.88) |
| **Delhi** | LASSO Demographics, sectorwide model | Total | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) |
| **Delhi** | Economically Reasoned, All, sectorwide model | Total | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) |
| **Delhi** | LASSO All, sectorwide model | Urban | 14.2 (3.68) | 10.5 (3.03) | 8.4 (2.63) | 8.9 (2.54) | 8.2 (2.55) | 8.6 (2.94) |
| **Delhi** | LASSO All, statewide model | Urban | 12.8 (3.66) | 9.9 (2.79) | 7.9 (2.75) | 9.3 (2.55) | 8.7 (2.61) | 8.9 (2.95) |
| **Delhi** | LASSO Demographics, sectorwide model | Urban | 13.3 (3.64) | 10.1 (3.08) | 7.8 (2.39) | 8.9 (2.51) | 8.2 (2.42) | 9.0 (2.81) |
| **Delhi** | Economically Reasoned, All, sectorwide model | Urban | 14.2 (3.68) | 10.5 (3.03) | 8.4 (2.63) | 8.9 (2.54) | 8.2 (2.55) | 8.6 (2.94) |
| **Gujrat** | LASSO All, sectorwide model | Rural | 12.7 (3.43) | 14.7 (3.83) | 13.1 (3.50) | 13.6 (3.63) | 11.9 (3.10) | 11.4 (3.30) |
| **Gujrat** | LASSO All, statewide model | Rural | 13.4 (3.71) | 15.2 (4.00) | 13.2 (3.62) | 14.0 (3.50) | 12.2 (3.15) | 12.2 (3.42) |
| **Gujrat** | LASSO Demographics, sectorwide model | Rural | 15.0 (4.01) | 16.4 (4.36) | 15.5 (4.20) | 15.1 (3.93) | 15.2 (3.86) | 14.9 (3.85) |
| **Gujrat** | Economically Reasoned, All, sectorwide model | Rural | 13.6 (3.72) | 14.8 (3.82) | 14.0 (3.71) | 14.0 (3.49) | 11.9 (3.22) | 11.1 (3.30) |
| **Gujrat** | LASSO All, sectorwide model | Total | 11.2 (2.32) | 11.9 (2.40) | 11.3 (2.26) | 11.6 (2.39) | 11.1 (2.18) | 10.5 (2.26) |
| **Gujrat** | LASSO All, statewide model | Total | 11.5 (2.40) | 12.1 (2.48) | 11.4 (2.32) | 11.7 (2.28) | 11.3 (2.14) | 11.1 (2.32) |
| **Gujrat** | LASSO Demographics, sectorwide model | Total | 13.0 (2.68) | 13.0 (2.73) | 12.9 (2.65) | 12.7 (2.58) | 13.5 (2.55) | 13.0 (2.55) |
| **Gujrat** | Economically Reasoned, All, sectorwide model | Total | 11.7 (2.47) | 11.9 (2.40) | 11.8 (2.37) | 11.8 (2.32) | 11.1 (2.23) | 10.3 (2.26) |
| **Gujrat** | LASSO All, sectorwide model | Urban | 8.9 (2.74) | 8.1 (2.34) | 8.8 (2.43) | 8.6 (2.59) | 10.0 (2.96) | 9.3 (2.95) |
| **Gujrat** | LASSO All, statewide model | Urban | 8.8 (2.36) | 7.9 (2.25) | 8.9 (2.42) | 8.3 (2.30) | 10.1 (2.68) | 9.6 (2.96) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Gujrat** | LASSO Demographics, sectorwide model | Urban | 10.1 (3.04) | 8.4 (2.63) | 9.4 (2.57) | 9.2 (2.70) | 11.2 (2.99) | 10.5 (3.03) |
| **Gujrat** | Economically Reasoned, All, sectorwide model | Urban | 8.9 (2.74) | 8.1 (2.34) | 8.8 (2.43) | 8.6 (2.59) | 10.0 (2.96) | 9.3 (2.95) |
| **Haryana** | LASSO All, sectorwide model | Rural | 11.2 (2.57) | 10.8 (2.59) | 10.1 (2.53) | 9.5 (2.46) | 9.2 (2.26) | 8.8 (2.34) |
| **Haryana** | LASSO All, statewide model | Rural | 12.4 (2.79) | 11.4 (2.63) | 11.2 (2.61) | 10.3 (2.56) | 9.9 (2.27) | 9.4 (2.45) |
| **Haryana** | LASSO Demographics, sectorwide model | Rural | 11.2 (2.78) | 11.5 (2.65) | 11.2 (2.66) | 10.7 (2.58) | 9.7 (2.31) | 9.6 (2.34) |
| **Haryana** | Economically Reasoned, All, sectorwide model | Rural | 12.2 (2.76) | 11.9 (2.69) | 11.4 (2.67) | 11.1 (2.67) | 10.3 (2.35) | 10.1 (2.49) |
| **Haryana** | LASSO All, sectorwide model | Total | 11.9 (1.99) | 10.9 (1.98) | 11.0 (1.96) | 10.6 (2.01) | 10.7 (1.81) | 10.3 (1.89) |
| **Haryana** | LASSO All, statewide model | Total | 12.5 (2.08) | 11.2 (1.97) | 11.5 (1.97) | 10.8 (1.96) | 11.1 (1.80) | 10.6 (1.92) |
| **Haryana** | LASSO Demographics, sectorwide model | Total | 11.7 (2.12) | 11.4 (2.03) | 11.5 (2.02) | 11.2 (2.07) | 10.7 (1.86) | 10.1 (1.84) |
| **Haryana** | Economically Reasoned, All, sectorwide model | Total | 12.6 (2.10) | 11.6 (2.04) | 11.9 (2.04) | 11.7 (2.12) | 11.4 (1.86) | 11.1 (1.98) |
| **Haryana** | LASSO All, sectorwide model | Urban | 13.3 (3.08) | 11.1 (2.81) | 12.8 (3.07) | 12.8 (3.46) | 13.6 (3.00) | 13.1 (3.22) |
| **Haryana** | LASSO All, statewide model | Urban | 12.7 (2.81) | 10.7 (2.58) | 12.1 (2.86) | 11.8 (2.91) | 13.4 (2.91) | 13.0 (3.06) |
| **Haryana** | LASSO Demographics, sectorwide model | Urban | 12.7 (3.10) | 11.1 (2.92) | 11.9 (2.99) | 12.3 (3.43) | 12.6 (3.13) | 11.2 (2.94) |
| **Haryana** | Economically Reasoned, All, sectorwide model | Urban | 13.3 (3.08) | 11.1 (2.81) | 12.8 (3.07) | 12.8 (3.46) | 13.6 (3.00) | 13.1 (3.22) |
| **Himachal Pradesh** | LASSO All, sectorwide model | Rural | 7.7 (2.30) | 7.1 (2.23) | 7.2 (2.23) | 6.9 (2.20) | 7.0 (2.22) | 6.2 (2.03) |
| **Himachal Pradesh** | LASSO All, statewide model | Rural | 9.6 (2.90) | 9.4 (2.84) | 9.3 (2.84) | 9.2 (2.94) | 9.1 (2.90) | 8.7 (2.74) |
| **Himachal Pradesh** | LASSO Demographics, sectorwide model | Rural | 7.3 (2.14) | 6.9 (2.12) | 6.7 (2.04) | 6.2 (2.08) | 6.5 (2.05) | 5.6 (1.77) |
| **Himachal Pradesh** | Economically Reasoned, All, sectorwide model | Rural | 6.9 (2.29) | 6.2 (2.16) | 6.7 (2.17) | 5.8 (2.12) | 6.3 (1.99) | 5.5 (1.78) |
| **Himachal Pradesh** | LASSO All, sectorwide model | Total | 7.4 (2.09) | 6.6 (2.01) | 6.9 (2.01) | 6.5 (2.00) | 6.5 (2.02) | 5.9 (1.85) |
| **Himachal Pradesh** | LASSO All, statewide model | Total | 8.9 (2.61) | 8.6 (2.56) | 8.5 (2.50) | 8.5 (2.67) | 8.3 (2.62) | 8.1 (2.48) |
| **Himachal Pradesh** | LASSO Demographics, sectorwide model | Total | 7.0 (1.94) | 6.4 (1.91) | 6.5 (1.86) | 5.9 (1.90) | 6.2 (1.87) | 5.4 (1.62) |
| **Himachal Pradesh** | Economically Reasoned, All, sectorwide model | Total | 6.7 (2.07) | 5.8 (1.94) | 6.5 (1.96) | 5.5 (1.93) | 5.9 (1.81) | 5.2 (1.63) |
| **Himachal Pradesh** | LASSO All, sectorwide model | Urban | 4.2 (2.77) | 2.2 (1.79) | 5.1 (4.15) | 2.6 (1.91) | 2.4 (2.01) | 3.3 (2.82) |
| **Himachal Pradesh** | LASSO All, statewide model | Urban | 3.0 (2.21) | 2.0 (1.75) | 3.1 (3.02) | 1.9 (1.59) | 1.5 (1.49) | 2.6 (2.49) |
| **Himachal Pradesh** | LASSO Demographics, sectorwide model | Urban | 5.0 (2.99) | 2.6 (2.04) | 5.6 (4.27) | 2.9 (1.99) | 2.8 (2.02) | 3.9 (3.00) |
| **Himachal Pradesh** | Economically Reasoned, All, sectorwide model | Urban | 4.2 (2.77) | 2.2 (1.79) | 5.1 (4.15) | 2.6 (1.91) | 2.4 (2.01) | 3.3 (2.82) |
| **Jammu & Kashmir** | LASSO All, sectorwide model | Rural | 8.7 (3.06) | 7.7 (2.84) | 9.7 (3.25) | 8.6 (3.06) | 9.4 (3.16) | 9.1 (3.25) |
| **Jammu & Kashmir** | LASSO All, statewide model | Rural | 8.6 (2.85) | 7.5 (2.47) | 8.6 (2.83) | 8.1 (2.59) | 9.0 (2.76) | 8.7 (2.98) |
| **Jammu & Kashmir** | LASSO Demographics, sectorwide model | Rural | 8.9 (3.14) | 8.4 (2.96) | 10.0 (3.14) | 9.2 (3.11) | 9.7 (3.17) | 9.5 (3.20) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Jammu & Kashmir** | Economically Reasoned, All, sectorwide model | Rural | 8.9 (3.08) | 8.0 (2.78) | 9.7 (2.90) | 9.2 (3.12) | 10.2 (3.38) | 9.7 (3.10) |
| **Jammu & Kashmir** | LASSO All, sectorwide model | Total | 8.6 (2.45) | 7.7 (2.28) | 9.4 (2.65) | 8.4 (2.49) | 9.5 (2.61) | 8.9 (2.72) |
| **Jammu & Kashmir** | LASSO All, statewide model | Total | 8.7 (2.30) | 7.7 (2.00) | 8.6 (2.31) | 8.1 (2.12) | 9.2 (2.29) | 8.7 (2.50) |
| **Jammu & Kashmir** | LASSO Demographics, sectorwide model | Total | 8.9 (2.52) | 8.4 (2.38) | 9.8 (2.56) | 8.9 (2.53) | 9.8 (2.62) | 9.2 (2.67) |
| **Jammu & Kashmir** | Economically Reasoned, All, sectorwide model | Total | 8.8 (2.47) | 8.0 (2.23) | 9.4 (2.37) | 8.8 (2.54) | 10.1 (2.77) | 9.3 (2.59) |
| **Jammu & Kashmir** | LASSO All, sectorwide model | Urban | 8.3 (2.26) | 7.8 (2.12) | 8.2 (2.31) | 7.3 (2.03) | 9.7 (2.57) | 7.7 (2.12) |
| **Jammu & Kashmir** | LASSO All, statewide model | Urban | 8.8 (2.35) | 8.6 (2.30) | 8.6 (2.29) | 8.1 (2.10) | 9.9 (2.70) | 8.6 (2.26) |
| **Jammu & Kashmir** | LASSO Demographics, sectorwide model | Urban | 8.7 (2.36) | 8.4 (2.27) | 8.9 (2.46) | 7.6 (2.05) | 9.9 (2.72) | 7.9 (2.12) |
| **Jammu & Kashmir** | Economically Reasoned, All, sectorwide model | Urban | 8.3 (2.26) | 7.8 (2.12) | 8.2 (2.31) | 7.3 (2.03) | 9.7 (2.57) | 7.7 (2.12) |
| **Jharkhand** | LASSO All, sectorwide model | Rural | 36.1 (3.80) | 36.3 (3.73) | 34.8 (3.62) | 35.4 (3.80) | 34.4 (3.90) | 32.1 (3.81) |
| **Jharkhand** | LASSO All, statewide model | Rural | 36.6 (4.06) | 38.0 (4.08) | 37.3 (3.91) | 36.9 (3.86) | 37.9 (3.75) | 38.0 (3.84) |
| **Jharkhand** | LASSO Demographics, sectorwide model | Rural | 36.9 (3.83) | 36.9 (3.81) | 35.4 (3.66) | 35.7 (3.79) | 35.6 (3.69) | 33.9 (3.64) |
| **Jharkhand** | Economically Reasoned, All, sectorwide model | Rural | 36.6 (3.92) | 38.0 (4.03) | 37.7 (3.97) | 37.7 (4.05) | 37.5 (4.14) | 36.8 (4.25) |
| **Jharkhand** | LASSO All, sectorwide model | Total | 34.2 (3.17) | 34.1 (3.22) | 32.9 (3.01) | 33.4 (3.15) | 32.5 (3.24) | 30.8 (3.23) |
| **Jharkhand** | LASSO All, statewide model | Total | 34.5 (3.38) | 35.1 (3.45) | 34.7 (3.24) | 34.3 (3.21) | 35.1 (3.13) | 35.5 (3.26) |
| **Jharkhand** | LASSO Demographics, sectorwide model | Total | 34.6 (3.20) | 34.3 (3.24) | 33.1 (3.04) | 33.3 (3.12) | 33.1 (3.07) | 32.1 (3.09) |
| **Jharkhand** | Economically Reasoned, All, sectorwide model | Total | 34.5 (3.27) | 35.5 (3.45) | 35.2 (3.27) | 35.3 (3.34) | 35.0 (3.43) | 34.7 (3.58) |
| **Jharkhand** | LASSO All, sectorwide model | Urban | 25.7 (4.06) | 25.9 (6.23) | 25.7 (4.31) | 25.6 (4.30) | 25.0 (4.35) | 24.9 (4.16) |
| **Jharkhand** | LASSO All, statewide model | Urban | 25.6 (4.21) | 24.3 (5.89) | 25.1 (4.51) | 24.5 (4.42) | 23.7 (4.38) | 23.7 (4.23) |
| **Jharkhand** | LASSO Demographics, sectorwide model | Urban | 24.7 (4.08) | 24.4 (5.63) | 24.3 (4.31) | 24.1 (4.05) | 23.4 (4.09) | 23.3 (3.92) |
| **Jharkhand** | Economically Reasoned, All, sectorwide model | Urban | 25.7 (4.06) | 25.9 (6.23) | 25.7 (4.31) | 25.6 (4.30) | 25.0 (4.35) | 24.9 (4.16) |
| **Karnataka** | LASSO All, sectorwide model | Rural | 19.9 (3.39) | 17.3 (3.18) | 17.2 (3.28) | 17.5 (3.25) | 16.0 (3.06) | 15.4 (3.06) |
| **Karnataka** | LASSO All, statewide model | Rural | 19.5 (3.45) | 17.4 (3.16) | 17.4 (3.22) | 17.2 (3.23) | 15.8 (3.09) | 15.4 (3.10) |
| **Karnataka** | LASSO Demographics, sectorwide model | Rural | 20.8 (3.66) | 19.5 (3.52) | 18.8 (3.48) | 19.1 (3.56) | 19.6 (3.58) | 19.0 (3.58) |
| **Karnataka** | Economically Reasoned, All, sectorwide model | Rural | 20.4 (3.32) | 17.7 (3.07) | 17.4 (3.06) | 17.4 (3.17) | 16.2 (2.95) | 15.6 (3.03) |
| **Karnataka** | LASSO All, sectorwide model | Total | 18.2 (2.49) | 16.0 (2.31) | 14.8 (2.35) | 15.6 (2.33) | 14.7 (2.21) | 14.4 (2.19) |
| **Karnataka** | LASSO All, statewide model | Total | 18.1 (2.45) | 16.2 (2.31) | 15.1 (2.26) | 15.5 (2.31) | 14.6 (2.25) | 14.5 (2.24) |
| **Karnataka** | LASSO Demographics, sectorwide model | Total | 19.7 (2.90) | 18.3 (2.71) | 16.3 (2.53) | 17.4 (2.59) | 18.0 (2.74) | 17.4 (2.69) |
| **Karnataka** | Economically Reasoned, All, sectorwide model | Total | 18.5 (2.46) | 16.2 (2.25) | 15.0 (2.24) | 15.5 (2.28) | 14.9 (2.14) | 14.5 (2.17) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Karnataka** | LASSO All, sectorwide model | Urban | 15.6 (3.58) | 13.8 (3.20) | 11.3 (3.22) | 12.3 (3.00) | 12.4 (2.81) | 12.6 (2.73) |
| **Karnataka** | LASSO All, statewide model | Urban | 15.7 (3.21) | 14.4 (3.25) | 11.6 (2.99) | 12.7 (2.96) | 12.4 (2.92) | 12.8 (2.89) |
| **Karnataka** | LASSO Demographics, sectorwide model | Urban | 18.0 (4.73) | 16.5 (4.23) | 12.7 (3.61) | 14.3 (3.48) | 15.2 (4.19) | 14.6 (3.93) |
| **Karnataka** | Economically Reasoned, All, sectorwide model | Urban | 15.6 (3.58) | 13.8 (3.20) | 11.3 (3.22) | 12.3 (3.00) | 12.4 (2.81) | 12.6 (2.73) |
| **Kerala** | LASSO All, sectorwide model | Rural | 10.0 (2.42) | 8.8 (2.14) | 8.4 (2.08) | 8.9 (2.15) | 8.4 (1.99) | 8.3 (2.10) |
| **Kerala** | LASSO All, statewide model | Rural | 10.0 (2.32) | 9.1 (2.12) | 8.3 (2.05) | 8.7 (2.12) | 8.9 (2.14) | 9.1 (2.21) |
| **Kerala** | LASSO Demographics, sectorwide model | Rural | 10.2 (2.38) | 9.2 (2.18) | 9.0 (2.17) | 9.6 (2.32) | 8.9 (2.04) | 8.5 (2.07) |
| **Kerala** | Economically Reasoned, All, sectorwide model | Rural | 10.1 (2.38) | 9.2 (2.21) | 8.6 (2.10) | 9.3 (2.19) | 8.8 (2.06) | 8.6 (2.08) |
| **Kerala** | LASSO All, sectorwide model | Total | 8.7 (1.60) | 7.6 (1.43) | 7.6 (1.42) | 7.5 (1.42) | 7.5 (1.32) | 7.1 (1.34) |
| **Kerala** | LASSO All, statewide model | Total | 8.6 (1.56) | 7.8 (1.42) | 7.4 (1.39) | 7.3 (1.39) | 7.7 (1.42) | 7.6 (1.42) |
| **Kerala** | LASSO Demographics, sectorwide model | Total | 9.0 (1.59) | 8.2 (1.45) | 8.4 (1.45) | 8.4 (1.50) | 8.0 (1.35) | 7.3 (1.36) |
| **Kerala** | Economically Reasoned, All, sectorwide model | Total | 8.8 (1.57) | 7.8 (1.46) | 7.7 (1.43) | 7.8 (1.43) | 7.7 (1.35) | 7.2 (1.33) |
| **Kerala** | LASSO All, sectorwide model | Urban | 7.1 (1.90) | 6.3 (1.82) | 6.7 (1.92) | 6.0 (1.78) | 6.5 (1.74) | 5.6 (1.57) |
| **Kerala** | LASSO All, statewide model | Urban | 6.9 (1.95) | 6.2 (1.83) | 6.5 (1.86) | 5.8 (1.74) | 6.5 (1.86) | 5.9 (1.67) |
| **Kerala** | LASSO Demographics, sectorwide model | Urban | 7.5 (1.97) | 7.1 (1.83) | 7.8 (1.92) | 7.0 (1.82) | 7.0 (1.76) | 6.0 (1.71) |
| **Kerala** | Economically Reasoned, All, sectorwide model | Urban | 7.1 (1.90) | 6.3 (1.82) | 6.7 (1.92) | 6.0 (1.78) | 6.5 (1.74) | 5.6 (1.57) |
| **Madhya Pradesh** | LASSO All, sectorwide model | Rural | 27.8 (3.55) | 26.2 (3.62) | 28.1 (3.63) | 26.9 (3.70) | 27.1 (3.56) | 24.4 (3.41) |
| **Madhya Pradesh** | LASSO All, statewide model | Rural | 27.9 (3.68) | 26.6 (3.67) | 28.1 (3.67) | 27.1 (3.50) | 26.9 (3.73) | 24.7 (3.64) |
| **Madhya Pradesh** | LASSO Demographics, sectorwide model | Rural | 30.3 (3.91) | 29.9 (3.92) | 30.8 (4.06) | 30.1 (4.00) | 31.3 (3.92) | 28.6 (3.89) |
| **Madhya Pradesh** | Economically Reasoned, All, sectorwide model | Rural | 27.7 (3.76) | 25.7 (3.81) | 28.0 (3.76) | 27.1 (3.62) | 26.5 (3.67) | 23.7 (3.66) |
| **Madhya Pradesh** | LASSO All, sectorwide model | Total | 25.6 (2.78) | 24.1 (2.76) | 25.2 (2.80) | 24.4 (2.80) | 24.4 (2.76) | 22.3 (2.65) |
| **Madhya Pradesh** | LASSO All, statewide model | Total | 25.8 (2.88) | 24.4 (2.80) | 25.2 (2.82) | 24.6 (2.65) | 24.4 (2.89) | 22.6 (2.81) |
| **Madhya Pradesh** | LASSO Demographics, sectorwide model | Total | 27.5 (3.04) | 26.8 (3.00) | 27.1 (3.11) | 26.8 (3.02) | 27.6 (3.04) | 25.5 (3.00) |
| **Madhya Pradesh** | Economically Reasoned, All, sectorwide model | Total | 25.5 (2.93) | 23.6 (2.90) | 25.1 (2.89) | 24.6 (2.75) | 23.9 (2.85) | 21.7 (2.83) |
| **Madhya Pradesh** | LASSO All, sectorwide model | Urban | 18.7 (2.93) | 17.8 (2.65) | 17.4 (3.32) | 17.7 (2.73) | 16.0 (2.54) | 15.9 (2.77) |
| **Madhya Pradesh** | LASSO All, statewide model | Urban | 19.3 (2.93) | 18.3 (2.68) | 17.5 (3.21) | 17.9 (2.60) | 16.7 (2.51) | 16.3 (2.71) |
| **Madhya Pradesh** | LASSO Demographics, sectorwide model | Urban | 18.9 (3.05) | 17.9 (2.85) | 17.2 (3.48) | 18.0 (2.87) | 16.3 (2.68) | 16.0 (2.81) |
| **Madhya Pradesh** | Economically Reasoned, All, sectorwide model | Urban | 18.7 (2.93) | 17.8 (2.65) | 17.4 (3.32) | 17.7 (2.73) | 16.0 (2.54) | 15.9 (2.77) |
| **Maharashtra** | LASSO All, sectorwide model | Rural | 22.3 (2.59) | 21.4 (2.46) | 23.2 (2.63) | 20.7 (2.52) | 21.6 (2.43) | 20.3 (2.33) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Maharashtra** | LASSO All, statewide model | Rural | 22.8 (2.73) | 21.8 (2.72) | 23.6 (2.81) | 21.0 (2.67) | 22.1 (2.80) | 20.8 (2.68) |
| **Maharashtra** | LASSO Demographics, sectorwide model | Rural | 22.9 (2.60) | 22.5 (2.59) | 23.5 (2.65) | 21.9 (2.60) | 23.4 (2.71) | 22.0 (2.48) |
| **Maharashtra** | Economically Reasoned, All, sectorwide model | Rural | 22.0 (2.58) | 21.0 (2.56) | 23.2 (2.73) | 20.5 (2.65) | 21.6 (2.66) | 20.5 (2.59) |
| **Maharashtra** | LASSO All, sectorwide model | Total | 18.5 (1.89) | 18.0 (1.83) | 18.7 (1.88) | 17.4 (1.83) | 17.3 (1.75) | 16.2 (1.71) |
| **Maharashtra** | LASSO All, statewide model | Total | 18.6 (1.94) | 18.1 (1.93) | 18.7 (1.97) | 17.5 (1.89) | 17.6 (1.93) | 16.6 (1.88) |
| **Maharashtra** | LASSO Demographics, sectorwide model | Total | 19.6 (2.12) | 19.7 (2.11) | 19.8 (2.07) | 19.0 (2.04) | 19.5 (2.13) | 18.3 (2.03) |
| **Maharashtra** | Economically Reasoned, All, sectorwide model | Total | 18.3 (1.88) | 17.7 (1.88) | 18.7 (1.93) | 17.2 (1.89) | 17.3 (1.85) | 16.3 (1.83) |
| **Maharashtra** | LASSO All, sectorwide model | Urban | 13.4 (2.73) | 13.3 (2.75) | 12.4 (2.62) | 12.3 (2.55) | 11.6 (2.47) | 10.5 (2.47) |
| **Maharashtra** | LASSO All, statewide model | Urban | 13.0 (2.69) | 13.1 (2.65) | 12.0 (2.65) | 12.2 (2.50) | 11.6 (2.54) | 10.7 (2.53) |
| **Maharashtra** | LASSO Demographics, sectorwide model | Urban | 15.3 (3.51) | 15.7 (3.53) | 14.7 (3.31) | 14.6 (3.28) | 14.3 (3.40) | 13.2 (3.43) |
| **Maharashtra** | Economically Reasoned, All, sectorwide model | Urban | 13.4 (2.73) | 13.3 (2.75) | 12.4 (2.62) | 12.3 (2.55) | 11.6 (2.47) | 10.5 (2.47) |
| **Manipur** | LASSO All, sectorwide model | Rural | 40.0 (7.00) | 35.7 (6.71) | 34.7 (6.60) | 35.0 (6.66) | 38.0 (6.74) | 34.2 (6.45) |
| **Manipur** | LASSO All, statewide model | Rural | 34.0 (6.34) | 30.6 (6.05) | 29.0 (6.03) | 28.9 (6.11) | 32.1 (6.44) | 30.1 (6.36) |
| **Manipur** | LASSO Demographics, sectorwide model | Rural | 36.7 (7.75) | 34.1 (7.58) | 33.0 (7.44) | 32.1 (7.37) | 35.5 (6.84) | 34.0 (6.52) |
| **Manipur** | Economically Reasoned, All, sectorwide model | Rural | 36.1 (6.40) | 33.3 (6.24) | 31.7 (6.31) | 31.3 (6.16) | 34.5 (7.40) | 32.7 (7.19) |
| **Manipur** | LASSO All, sectorwide model | Total | 39.5 (5.37) | 35.9 (5.21) | 35.5 (5.16) | 35.3 (5.19) | 38.2 (5.38) | 35.8 (5.08) |
| **Manipur** | LASSO All, statewide model | Total | 34.9 (4.99) | 31.9 (4.82) | 30.9 (4.83) | 30.5 (4.87) | 33.2 (5.15) | 32.0 (5.04) |
| **Manipur** | LASSO Demographics, sectorwide model | Total | 37.7 (5.99) | 35.2 (5.92) | 34.5 (5.85) | 33.7 (5.78) | 36.8 (5.45) | 35.9 (5.28) |
| **Manipur** | Economically Reasoned, All, sectorwide model | Total | 36.8 (4.99) | 34.3 (4.91) | 33.4 (4.97) | 32.6 (4.86) | 35.6 (5.82) | 34.7 (5.54) |
| **Manipur** | LASSO All, sectorwide model | Urban | 38.4 (7.22) | 36.6 (7.34) | 37.5 (7.34) | 36.0 (7.14) | 38.8 (7.89) | 39.5 (7.73) |
| **Manipur** | LASSO All, statewide model | Urban | 37.0 (7.52) | 35.0 (7.55) | 35.6 (7.64) | 34.7 (7.47) | 36.3 (7.72) | 36.6 (7.84) |
| **Manipur** | LASSO Demographics, sectorwide model | Urban | 39.8 (8.35) | 37.8 (8.58) | 38.4 (8.58) | 37.7 (8.26) | 40.2 (8.01) | 40.2 (8.82) |
| **Manipur** | Economically Reasoned, All, sectorwide model | Urban | 38.4 (7.22) | 36.6 (7.34) | 37.5 (7.34) | 36.0 (7.14) | 38.8 (7.89) | 39.5 (7.73) |
| **Meghalaya** | LASSO All, sectorwide model | Rural | 13.0 (4.13) | 12.4 (4.30) | 19.1 (5.26) | 15.1 (5.09) | 14.5 (4.53) | 16.2 (4.64) |
| **Meghalaya** | LASSO All, statewide model | Rural | 13.0 (4.16) | 11.7 (4.01) | 14.8 (4.48) | 12.6 (4.11) | 10.2 (3.49) | 12.4 (3.99) |
| **Meghalaya** | LASSO Demographics, sectorwide model | Rural | 14.0 (4.39) | 13.4 (4.31) | 19.9 (5.11) | 16.0 (4.76) | 18.6 (5.09) | 19.2 (5.17) |
| **Meghalaya** | Economically Reasoned, All, sectorwide model | Rural | 13.3 (4.32) | 11.8 (4.06) | 18.6 (5.31) | 15.3 (4.91) | 15.2 (4.38) | 16.0 (4.59) |
| **Meghalaya** | LASSO All, sectorwide model | Total | 12.2 (3.48) | 11.9 (3.71) | 17.5 (4.46) | 14.2 (4.29) | 14.1 (3.95) | 15.3 (4.01) |
| **Meghalaya** | LASSO All, statewide model | Total | 12.5 (3.68) | 11.3 (3.56) | 13.9 (3.93) | 12.3 (3.71) | 10.3 (3.17) | 12.0 (3.55) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Meghalaya** | LASSO Demographics, sectorwide model | Total | 13.2 (3.71) | 12.9 (3.73) | 18.4 (4.35) | 15.3 (4.06) | 17.8 (4.43) | 17.9 (4.47) |
| **Meghalaya** | Economically Reasoned, All, sectorwide model | Total | 12.4 (3.63) | 11.3 (3.51) | 17.1 (4.50) | 14.4 (4.15) | 14.7 (3.82) | 15.1 (3.97) |
| **Meghalaya** | LASSO All, sectorwide model | Urban | 8.6 (4.73) | 8.6 (4.44) | 9.9 (5.14) | 10.0 (5.20) | 11.9 (5.21) | 10.3 (5.08) |
| **Meghalaya** | LASSO All, statewide model | Urban | 9.9 (7.77) | 9.4 (7.04) | 9.4 (7.38) | 10.7 (8.55) | 10.9 (7.39) | 9.7 (7.04) |
| **Meghalaya** | LASSO Demographics, sectorwide model | Urban | 9.6 (5.33) | 10.0 (4.86) | 10.9 (5.42) | 11.7 (5.89) | 13.0 (5.55) | 10.9 (5.61) |
| **Meghalaya** | Economically Reasoned, All, sectorwide model | Urban | 8.6 (4.73) | 8.6 (4.44) | 9.9 (5.14) | 10.0 (5.20) | 11.9 (5.21) | 10.3 (5.08) |
| **Mizoram** | LASSO All, sectorwide model | Rural | 27.2 (6.60) | 23.6 (6.09) | 21.0 (5.64) | 20.5 (5.19) | 27.1 (6.05) | 23.8 (5.49) |
| **Mizoram** | LASSO All, statewide model | Rural | 29.6 (6.42) | 28.1 (5.97) | 26.1 (5.91) | 25.3 (5.42) | 25.2 (5.49) | 24.0 (5.34) |
| **Mizoram** | LASSO Demographics, sectorwide model | Rural | 26.2 (5.79) | 22.4 (5.29) | 20.2 (5.15) | 22.5 (5.02) | 26.6 (5.60) | 24.5 (5.18) |
| **Mizoram** | Economically Reasoned, All, sectorwide model | Rural | 26.9 (6.13) | 22.0 (5.61) | 20.0 (5.26) | 22.8 (4.88) | 25.8 (5.96) | 24.5 (5.24) |
| **Mizoram** | LASSO All, sectorwide model | Total | 16.9 (3.58) | 14.6 (3.33) | 13.2 (3.12) | 12.8 (2.87) | 16.9 (3.41) | 15.1 (3.10) |
| **Mizoram** | LASSO All, statewide model | Total | 19.0 (3.83) | 17.8 (3.58) | 16.9 (3.63) | 16.3 (3.44) | 16.9 (3.46) | 16.2 (3.38) |
| **Mizoram** | LASSO Demographics, sectorwide model | Total | 16.5 (3.25) | 14.0 (2.99) | 12.7 (2.90) | 13.7 (2.80) | 16.6 (3.20) | 15.3 (2.96) |
| **Mizoram** | Economically Reasoned, All, sectorwide model | Total | 16.8 (3.34) | 13.7 (3.09) | 12.6 (2.94) | 13.9 (2.73) | 16.2 (3.36) | 15.5 (2.97) |
| **Mizoram** | LASSO All, sectorwide model | Urban | 5.9 (2.16) | 4.4 (1.81) | 4.4 (2.10) | 4.6 (2.17) | 5.0 (2.12) | 5.1 (2.05) |
| **Mizoram** | LASSO All, statewide model | Urban | 7.5 (3.92) | 6.2 (3.59) | 6.7 (3.96) | 6.8 (4.15) | 7.3 (3.91) | 7.3 (3.89) |
| **Mizoram** | LASSO Demographics, sectorwide model | Urban | 6.0 (2.61) | 4.5 (2.20) | 4.4 (2.19) | 4.4 (2.24) | 4.8 (2.25) | 4.7 (2.18) |
| **Mizoram** | Economically Reasoned, All, sectorwide model | Urban | 5.9 (2.16) | 4.4 (1.81) | 4.4 (2.10) | 4.6 (2.17) | 5.0 (2.12) | 5.1 (2.05) |
| **Nagaland** | LASSO All, sectorwide model | Rural | 13.5 (3.84) | 10.9 (3.78) | 11.7 (3.69) | 10.4 (3.12) | 15.8 (4.03) | 16.1 (4.19) |
| **Nagaland** | LASSO All, statewide model | Rural | 11.9 (3.65) | 11.3 (3.80) | 8.6 (2.90) | 8.7 (2.72) | 13.3 (3.53) | 16.6 (4.20) |
| **Nagaland** | LASSO Demographics, sectorwide model | Rural | 14.7 (4.15) | 14.3 (4.35) | 11.6 (3.65) | 12.0 (3.52) | 17.6 (4.26) | 17.8 (4.46) |
| **Nagaland** | Economically Reasoned, All, sectorwide model | Rural | 13.9 (3.99) | 10.7 (4.10) | 9.0 (3.11) | 9.5 (3.11) | 13.8 (3.73) | 14.9 (3.99) |
| **Nagaland** | LASSO All, sectorwide model | Total | 13.4 (2.98) | 11.7 (2.95) | 12.4 (2.95) | 10.9 (2.56) | 14.7 (3.20) | 14.7 (3.26) |
| **Nagaland** | LASSO All, statewide model | Total | 12.2 (2.90) | 11.6 (2.97) | 9.8 (2.39) | 9.8 (2.33) | 13.1 (2.85) | 15.0 (3.27) |
| **Nagaland** | LASSO Demographics, sectorwide model | Total | 15.0 (3.21) | 14.8 (3.36) | 13.9 (2.95) | 13.3 (2.83) | 17.0 (3.38) | 17.2 (3.50) |
| **Nagaland** | Economically Reasoned, All, sectorwide model | Total | 13.7 (3.08) | 11.6 (3.17) | 10.5 (2.60) | 10.3 (2.55) | 13.2 (2.98) | 13.7 (3.12) |
| **Nagaland** | LASSO All, sectorwide model | Urban | 13.3 (4.36) | 13.6 (4.16) | 13.9 (4.76) | 12.3 (4.38) | 11.2 (4.13) | 10.4 (3.79) |
| **Nagaland** | LASSO All, statewide model | Urban | 12.9 (4.56) | 12.2 (4.17) | 12.4 (4.22) | 12.5 (4.53) | 12.5 (4.26) | 10.6 (3.76) |
| **Nagaland** | LASSO Demographics, sectorwide model | Urban | 15.7 (4.61) | 16.0 (4.44) | 19.1 (4.98) | 16.5 (4.56) | 15.3 (4.40) | 15.5 (4.30) |

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|---|---|---|---|---|---|---|---|---|
| **Nagaland** | Economically Reasoned, All, sectorwide model | Urban | 13.3 (4.36) | 13.6 (4.16) | 13.9 (4.76) | 12.3 (4.38) | 11.2 (4.13) | 10.4 (3.79) |
| **Orissa** | LASSO All, sectorwide model | Rural | 28.2 (3.46) | 28.0 (3.51) | 26.6 (3.48) | 25.5 (3.43) | 26.7 (3.54) | 25.5 (3.49) |
| **Orissa** | LASSO All, statewide model | Rural | 29.0 (3.57) | 29.7 (3.86) | 28.6 (3.78) | 27.5 (3.69) | 28.4 (3.90) | 28.8 (4.03) |
| **Orissa** | LASSO Demographics, sectorwide model | Rural | 29.8 (3.52) | 30.4 (3.53) | 28.9 (3.46) | 28.3 (3.38) | 30.6 (3.60) | 29.6 (3.63) |
| **Orissa** | Economically Reasoned, All, sectorwide model | Rural | 28.1 (3.54) | 28.0 (3.60) | 26.9 (3.46) | 25.8 (3.54) | 27.0 (3.59) | 26.4 (3.59) |
| **Orissa** | LASSO All, sectorwide model | Total | 26.1 (2.97) | 25.7 (3.00) | 25.0 (2.99) | 23.9 (2.95) | 25.0 (3.07) | 23.8 (3.02) |
| **Orissa** | LASSO All, statewide model | Total | 26.9 (3.07) | 27.1 (3.30) | 26.8 (3.25) | 25.7 (3.17) | 26.6 (3.38) | 26.8 (3.49) |
| **Orissa** | LASSO Demographics, sectorwide model | Total | 27.5 (3.02) | 27.8 (3.03) | 27.0 (2.98) | 26.4 (2.91) | 28.4 (3.13) | 27.4 (3.14) |
| **Orissa** | Economically Reasoned, All, sectorwide model | Total | 26.0 (3.04) | 25.7 (3.08) | 25.2 (2.97) | 24.2 (3.05) | 25.3 (3.11) | 24.5 (3.11) |
| **Orissa** | LASSO All, sectorwide model | Urban | 14.5 (3.03) | 13.1 (2.99) | 16.0 (3.13) | 15.3 (3.30) | 15.1 (3.03) | 13.4 (2.78) |
| **Orissa** | LASSO All, statewide model | Urban | 15.0 (3.12) | 13.2 (3.17) | 16.3 (3.40) | 15.6 (3.43) | 15.6 (3.19) | 14.5 (3.06) |
| **Orissa** | LASSO Demographics, sectorwide model | Urban | 14.7 (3.02) | 13.3 (3.09) | 16.3 (3.21) | 15.8 (3.45) | 15.1 (3.21) | 14.0 (3.01) |
| **Orissa** | Economically Reasoned, All, sectorwide model | Urban | 14.5 (3.03) | 13.1 (2.99) | 16.0 (3.13) | 15.3 (3.30) | 15.1 (3.03) | 13.4 (2.78) |
| **Punjab** | LASSO All, sectorwide model | Rural | 4.6 (1.26) | 5.7 (1.45) | 5.9 (1.48) | 6.1 (1.54) | 5.7 (1.51) | 5.0 (1.33) |
| **Punjab** | LASSO All, statewide model | Rural | 7.1 (1.52) | 8.7 (1.81) | 8.5 (1.74) | 9.6 (1.91) | 9.4 (1.83) | 9.0 (1.79) |
| **Punjab** | LASSO Demographics, sectorwide model | Rural | 5.0 (1.29) | 5.7 (1.46) | 5.8 (1.47) | 6.3 (1.61) | 6.3 (1.56) | 5.1 (1.27) |
| **Punjab** | Economically Reasoned, All, sectorwide model | Rural | 4.8 (1.24) | 5.6 (1.45) | 5.9 (1.56) | 6.0 (1.65) | 5.8 (1.57) | 4.9 (1.33) |
| **Punjab** | LASSO All, sectorwide model | Total | 6.4 (1.05) | 7.6 (1.20) | 7.5 (1.25) | 7.2 (1.22) | 6.9 (1.22) | 6.3 (1.07) |
| **Punjab** | LASSO All, statewide model | Total | 8.0 (1.19) | 9.5 (1.36) | 9.2 (1.34) | 9.5 (1.38) | 9.7 (1.41) | 9.1 (1.32) |
| **Punjab** | LASSO Demographics, sectorwide model | Total | 6.7 (1.07) | 7.6 (1.18) | 7.4 (1.22) | 7.3 (1.22) | 7.3 (1.20) | 6.4 (1.02) |
| **Punjab** | Economically Reasoned, All, sectorwide model | Total | 6.5 (1.04) | 7.5 (1.20) | 7.5 (1.28) | 7.1 (1.27) | 7.0 (1.25) | 6.2 (1.07) |
| **Punjab** | LASSO All, sectorwide model | Urban | 9.1 (1.85) | 10.5 (2.07) | 10.2 (2.23) | 8.9 (1.97) | 9.1 (2.08) | 8.6 (1.79) |
| **Punjab** | LASSO All, statewide model | Urban | 9.3 (1.90) | 10.8 (2.06) | 10.4 (2.09) | 9.3 (1.84) | 10.3 (2.11) | 9.4 (1.81) |
| **Punjab** | LASSO Demographics, sectorwide model | Urban | 9.3 (1.88) | 10.6 (2.00) | 10.1 (2.15) | 9.0 (1.86) | 9.3 (1.84) | 8.7 (1.71) |
| **Punjab** | Economically Reasoned, All, sectorwide model | Urban | 9.1 (1.85) | 10.5 (2.07) | 10.2 (2.23) | 8.9 (1.97) | 9.1 (2.08) | 8.6 (1.79) |
| **Rajasthan** | LASSO All, sectorwide model | Rural | 13.5 (2.62) | 11.9 (2.28) | 13.2 (2.51) | 12.7 (2.76) | 12.3 (2.29) | 11.9 (2.31) |
| **Rajasthan** | LASSO All, statewide model | Rural | 13.3 (2.57) | 11.5 (2.25) | 12.6 (2.53) | 12.5 (2.87) | 11.4 (2.22) | 10.7 (2.27) |
| **Rajasthan** | LASSO Demographics, sectorwide model | Rural | 14.7 (2.82) | 13.3 (2.68) | 14.4 (2.81) | 13.7 (3.01) | 14.0 (2.69) | 13.5 (2.71) |
| **Rajasthan** | Economically Reasoned, All, sectorwide model | Rural | 13.5 (2.62) | 12.1 (2.45) | 13.2 (2.61) | 12.8 (2.92) | 12.3 (2.46) | 12.0 (2.43) |

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|---|---|---|---|---|---|---|---|---|
| **Rajasthan** | LASSO All, sectorwide model | Total | 13.1 (2.12) | 11.4 (1.84) | 12.6 (1.99) | 12.0 (2.20) | 11.5 (1.80) | 11.4 (1.84) |
| **Rajasthan** | LASSO All, statewide model | Total | 13.0 (2.07) | 11.2 (1.80) | 12.2 (2.00) | 11.9 (2.28) | 11.0 (1.74) | 10.6 (1.80) |
| **Rajasthan** | LASSO Demographics, sectorwide model | Total | 14.0 (2.27) | 12.8 (2.13) | 13.7 (2.23) | 13.0 (2.41) | 13.0 (2.09) | 12.6 (2.14) |
| **Rajasthan** | Economically Reasoned, All, sectorwide model | Total | 13.1 (2.12) | 11.6 (1.96) | 12.5 (2.05) | 12.1 (2.33) | 11.5 (1.93) | 11.4 (1.93) |
| **Rajasthan** | LASSO All, sectorwide model | Urban | 11.6 (2.80) | 10.1 (2.70) | 10.6 (2.62) | 9.5 (2.29) | 9.3 (2.36) | 9.5 (2.30) |
| **Rajasthan** | LASSO All, statewide model | Urban | 11.9 (2.71) | 10.1 (2.47) | 10.8 (2.63) | 9.7 (2.18) | 10.0 (2.22) | 10.0 (2.19) |
| **Rajasthan** | LASSO Demographics, sectorwide model | Urban | 11.9 (2.87) | 11.2 (2.83) | 11.9 (2.97) | 10.6 (2.64) | 10.1 (2.42) | 9.5 (2.34) |
| **Rajasthan** | Economically Reasoned, All, sectorwide model | Urban | 11.6 (2.80) | 10.1 (2.70) | 10.6 (2.62) | 9.5 (2.29) | 9.3 (2.36) | 9.5 (2.30) |
| **Sikkim** | LASSO All, sectorwide model | Rural | 8.9 (4.58) | 8.2 (4.34) | 7.3 (4.06) | 3.8 (2.65) | 6.1 (3.43) | 5.7 (3.29) |
| **Sikkim** | LASSO All, statewide model | Rural | 8.2 (4.29) | 8.9 (4.59) | 5.8 (3.39) | 3.9 (2.72) | 6.1 (3.53) | 5.8 (3.46) |
| **Sikkim** | LASSO Demographics, sectorwide model | Rural | 8.0 (4.26) | 8.6 (4.50) | 7.1 (3.82) | 5.0 (3.05) | 7.4 (4.11) | 6.7 (3.83) |
| **Sikkim** | Economically Reasoned, All, sectorwide model | Rural | 9.0 (4.58) | 9.4 (4.89) | 8.7 (4.49) | 5.4 (3.57) | 7.6 (3.86) | 7.2 (3.82) |
| **Sikkim** | LASSO All, sectorwide model | Total | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) |
| **Sikkim** | LASSO All, statewide model | Total | 6.9 (3.21) | 7.5 (3.45) | 6.1 (2.68) | 4.7 (2.15) | 6.1 (2.88) | 5.6 (2.81) |
| **Sikkim** | LASSO Demographics, sectorwide model | Total | 7.3 (3.22) | 7.7 (3.41) | 7.2 (2.98) | 5.7 (2.37) | 7.1 (3.31) | 6.2 (3.07) |
| **Sikkim** | Economically Reasoned, All, sectorwide model | Total | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) |
| **Sikkim** | LASSO All, sectorwide model | Urban | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) |
| **Sikkim** | LASSO All, statewide model | Urban | 3.5 (2.71) | 3.7 (2.62) | 6.9 (3.48) | 6.5 (3.15) | 5.9 (3.40) | 4.7 (3.04) |
| **Sikkim** | LASSO Demographics, sectorwide model | Urban | 5.3 (3.05) | 5.3 (2.95) | 7.6 (3.39) | 7.4 (3.21) | 6.0 (3.08) | 4.2 (2.42) |
| **Sikkim** | Economically Reasoned, All, sectorwide model | Urban | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) | NaN (NA) |
| **Tamil Nadu** | LASSO All, sectorwide model | Rural | 11.2 (2.06) | 10.1 (1.95) | 10.3 (2.16) | 10.0 (1.89) | 9.7 (1.88) | 8.5 (1.83) |
| **Tamil Nadu** | LASSO All, statewide model | Rural | 12.3 (2.09) | 11.6 (2.04) | 11.5 (2.04) | 10.7 (1.96) | 11.9 (2.07) | 10.8 (1.98) |
| **Tamil Nadu** | LASSO Demographics, sectorwide model | Rural | 11.9 (2.05) | 10.5 (1.95) | 10.7 (2.07) | 10.7 (1.98) | 10.9 (1.86) | 9.8 (1.89) |
| **Tamil Nadu** | Economically Reasoned, All, sectorwide model | Rural | 11.3 (2.02) | 10.5 (1.95) | 10.4 (1.97) | 9.6 (1.80) | 9.9 (1.88) | 8.6 (1.72) |
| **Tamil Nadu** | LASSO All, sectorwide model | Total | 9.4 (1.36) | 8.4 (1.25) | 8.5 (1.37) | 8.4 (1.23) | 7.9 (1.22) | 7.3 (1.19) |
| **Tamil Nadu** | LASSO All, statewide model | Total | 9.9 (1.36) | 9.2 (1.34) | 9.2 (1.31) | 8.6 (1.28) | 9.2 (1.31) | 8.5 (1.27) |
| **Tamil Nadu** | LASSO Demographics, sectorwide model | Total | 10.6 (1.46) | 9.5 (1.40) | 9.9 (1.46) | 9.8 (1.41) | 9.6 (1.29) | 9.1 (1.29) |
| **Tamil Nadu** | Economically Reasoned, All, sectorwide model | Total | 9.5 (1.34) | 8.6 (1.25) | 8.6 (1.28) | 8.2 (1.19) | 8.0 (1.22) | 7.3 (1.14) |
| **Tamil Nadu** | LASSO All, sectorwide model | Urban | 7.4 (1.71) | 6.4 (1.49) | 6.6 (1.59) | 6.6 (1.50) | 5.6 (1.39) | 5.6 (1.34) |

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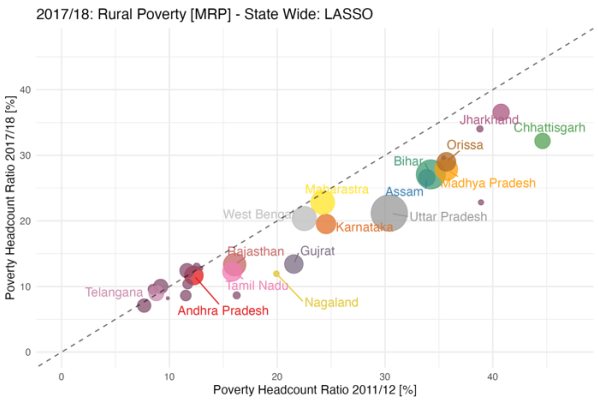
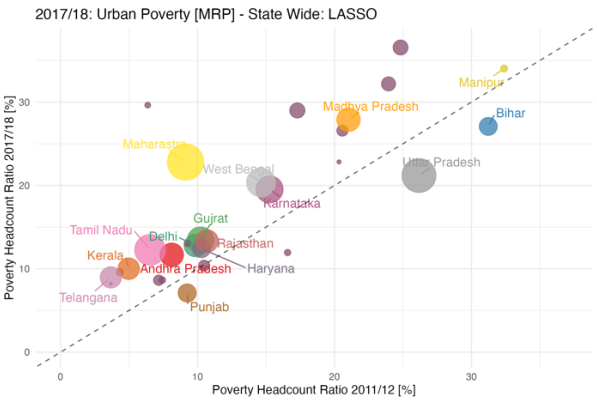
|---|---|---|---|---|---|---|---|---|
| **Tamil Nadu** | LASSO All, statewide model | Urban | 7.3 (1.67) | 6.4 (1.68) | 6.5 (1.58) | 6.2 (1.56) | 5.6 (1.35) | 5.5 (1.33) |
| **Tamil Nadu** | LASSO Demographics, sectorwide model | Urban | 9.1 (2.09) | 8.3 (2.01) | 9.0 (2.04) | 8.8 (1.99) | 7.9 (1.71) | 8.1 (1.64) |
| **Tamil Nadu** | Economically Reasoned, All, sectorwide model | Urban | 7.4 (1.71) | 6.4 (1.49) | 6.6 (1.59) | 6.6 (1.50) | 5.6 (1.39) | 5.6 (1.34) |
| **Telangana** | LASSO All, sectorwide model | Rural | 6.8 (2.22) | 5.5 (1.93) | 5.2 (2.05) | 4.8 (1.76) | 5.8 (2.07) | 4.9 (1.91) |
| **Telangana** | LASSO All, statewide model | Rural | 9.0 (2.78) | 8.5 (2.59) | 8.2 (2.65) | 7.3 (2.03) | 8.1 (2.20) | 6.9 (2.17) |
| **Telangana** | LASSO Demographics, sectorwide model | Rural | 8.3 (2.48) | 7.4 (2.21) | 6.9 (2.33) | 7.2 (2.01) | 8.6 (2.34) | 7.4 (2.27) |
| **Telangana** | Economically Reasoned, All, sectorwide model | Rural | 6.5 (2.14) | 5.7 (1.96) | 5.6 (2.10) | 5.5 (1.84) | 6.5 (2.07) | 5.6 (1.97) |
| **Telangana** | LASSO All, sectorwide model | Total | 6.1 (1.69) | 5.2 (1.55) | 5.1 (1.64) | 5.0 (1.67) | 5.2 (1.63) | 4.3 (1.60) |
| **Telangana** | LASSO All, statewide model | Total | 7.4 (2.18) | 7.0 (2.11) | 6.7 (1.84) | 6.5 (1.98) | 6.8 (1.86) | 5.7 (1.72) |
| **Telangana** | LASSO Demographics, sectorwide model | Total | 7.1 (2.08) | 6.5 (1.99) | 6.1 (2.15) | 6.5 (1.76) | 7.2 (2.06) | 5.9 (1.69) |
| **Telangana** | Economically Reasoned, All, sectorwide model | Total | 5.9 (1.65) | 5.3 (1.56) | 5.3 (1.67) | 5.4 (1.70) | 5.6 (1.63) | 4.7 (1.63) |
| **Telangana** | LASSO All, sectorwide model | Urban | 5.1 (2.59) | 4.7 (2.55) | 4.9 (2.73) | 5.4 (3.20) | 4.0 (2.62) | 3.3 (2.86) |
| **Telangana** | LASSO All, statewide model | Urban | 5.2 (3.48) | 5.0 (3.53) | 4.5 (2.34) | 5.2 (3.88) | 4.2 (3.37) | 3.6 (2.84) |
| **Telangana** | LASSO Demographics, sectorwide model | Urban | 5.4 (3.60) | 5.2 (3.65) | 4.9 (4.07) | 5.3 (3.19) | 4.6 (4.00) | 3.2 (2.46) |
| **Telangana** | Economically Reasoned, All, sectorwide model | Urban | 5.1 (2.59) | 4.7 (2.55) | 4.9 (2.73) | 5.4 (3.20) | 4.0 (2.62) | 3.3 (2.86) |
| **Tripura** | LASSO All, sectorwide model | Rural | 6.5 (6.35) | 5.6 (5.45) | 7.3 (6.92) | 8.0 (7.19) | 7.0 (5.31) | 5.4 (4.81) |
| **Tripura** | LASSO All, statewide model | Rural | 8.6 (7.45) | 7.1 (6.41) | 9.6 (7.90) | 11.2 (8.28) | 10.3 (6.44) | 9.1 (6.08) |
| **Tripura** | LASSO Demographics, sectorwide model | Rural | 8.1 (8.66) | 6.8 (7.73) | 8.8 (8.80) | 9.5 (9.09) | 9.1 (6.36) | 7.2 (5.55) |
| **Tripura** | Economically Reasoned, All, sectorwide model | Rural | 7.2 (6.70) | 5.9 (5.71) | 8.0 (7.21) | 9.3 (7.83) | 7.9 (5.30) | 6.3 (4.67) |
| **Tripura** | LASSO All, sectorwide model | Total | 7.0 (5.12) | 6.2 (4.51) | 8.1 (5.60) | 8.5 (5.84) | 7.4 (4.41) | 5.9 (4.03) |
| **Tripura** | LASSO All, statewide model | Total | 9.0 (5.98) | 7.6 (5.27) | 10.0 (6.36) | 11.2 (6.70) | 10.2 (5.32) | 9.0 (5.06) |
| **Tripura** | LASSO Demographics, sectorwide model | Total | 8.3 (6.94) | 7.2 (6.36) | 8.9 (7.09) | 9.4 (7.35) | 8.9 (5.26) | 7.2 (4.64) |
| **Tripura** | Economically Reasoned, All, sectorwide model | Total | 7.6 (5.40) | 6.4 (4.71) | 8.6 (5.83) | 9.5 (6.34) | 8.0 (4.40) | 6.6 (3.92) |
| **Tripura** | LASSO All, sectorwide model | Urban | 9.2 (4.34) | 8.8 (4.16) | 11.0 (4.66) | 10.2 (4.19) | 8.8 (3.59) | 8.3 (3.89) |
| **Tripura** | LASSO All, statewide model | Urban | 10.2 (4.03) | 9.8 (3.86) | 11.8 (4.31) | 11.3 (3.94) | 9.9 (3.30) | 8.6 (3.19) |
| **Tripura** | LASSO Demographics, sectorwide model | Urban | 9.0 (4.60) | 8.9 (4.75) | 9.3 (4.88) | 8.9 (4.43) | 8.2 (3.66) | 7.0 (3.57) |
| **Tripura** | Economically Reasoned, All, sectorwide model | Urban | 9.2 (4.34) | 8.8 (4.16) | 11.0 (4.66) | 10.2 (4.19) | 8.8 (3.59) | 8.3 (3.89) |
| **Uttar Pradesh** | LASSO All, sectorwide model | Rural | 21.8 (2.23) | 19.3 (2.13) | 19.7 (2.22) | 18.5 (2.09) | 18.4 (2.26) | 18.1 (2.29) |
| **Uttar Pradesh** | LASSO All, statewide model | Rural | 21.2 (2.18) | 18.9 (2.11) | 19.4 (2.16) | 17.9 (2.07) | 18.0 (2.22) | 17.9 (2.17) |

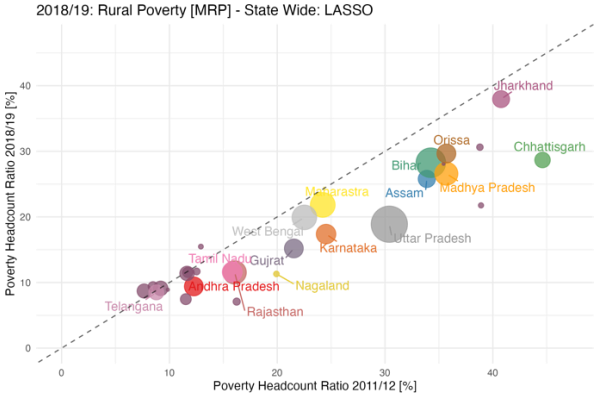
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Uttar Pradesh** | LASSO Demographics, sectorwide model | Rural | 24.4 (2.39) | 22.5 (2.38) | 22.9 (2.46) | 21.7 (2.40) | 23.0 (2.41) | 22.1 (2.40) |
| **Uttar Pradesh** | Economically Reasoned, All, sectorwide model | Rural | 21.8 (2.15) | 19.3 (2.06) | 19.9 (2.19) | 18.8 (2.14) | 18.6 (2.25) | 18.6 (2.29) |
| **Uttar Pradesh** | LASSO All, sectorwide model | Total | 21.1 (1.86) | 19.1 (1.74) | 19.0 (1.81) | 18.1 (1.74) | 18.0 (1.87) | 17.8 (1.90) |
| **Uttar Pradesh** | LASSO All, statewide model | Total | 20.6 (1.81) | 18.8 (1.72) | 18.8 (1.76) | 17.5 (1.71) | 17.7 (1.85) | 17.6 (1.80) |
| **Uttar Pradesh** | LASSO Demographics, sectorwide model | Total | 23.9 (2.00) | 22.3 (1.94) | 22.2 (2.01) | 21.3 (1.99) | 22.6 (2.01) | 21.7 (2.00) |
| **Uttar Pradesh** | Economically Reasoned, All, sectorwide model | Total | 21.2 (1.79) | 19.0 (1.69) | 19.2 (1.78) | 18.3 (1.77) | 18.2 (1.87) | 18.2 (1.90) |
| **Uttar Pradesh** | LASSO All, sectorwide model | Urban | 18.5 (2.59) | 18.3 (2.47) | 16.8 (2.40) | 16.3 (2.36) | 16.6 (2.36) | 16.6 (2.37) |
| **Uttar Pradesh** | LASSO All, statewide model | Urban | 18.2 (2.49) | 18.3 (2.44) | 16.8 (2.46) | 16.2 (2.35) | 16.5 (2.39) | 16.6 (2.33) |
| **Uttar Pradesh** | LASSO Demographics, sectorwide model | Urban | 21.9 (3.07) | 21.6 (2.80) | 20.0 (2.74) | 19.8 (2.67) | 20.8 (2.67) | 20.5 (2.67) |
| **Uttar Pradesh** | Economically Reasoned, All, sectorwide model | Urban | 18.5 (2.59) | 18.3 (2.47) | 16.8 (2.40) | 16.3 (2.36) | 16.6 (2.36) | 16.6 (2.37) |
| **Uttaranchal** | LASSO All, sectorwide model | Rural | 10.5 (4.04) | 13.0 (3.81) | 13.0 (3.88) | 12.5 (3.77) | 10.1 (3.48) | 9.9 (3.37) |
| **Uttaranchal** | LASSO All, statewide model | Rural | 10.4 (4.05) | 11.5 (3.50) | 11.0 (3.37) | 12.0 (3.38) | 9.8 (3.10) | 10.7 (3.31) |
| **Uttaranchal** | LASSO Demographics, sectorwide model | Rural | 10.5 (3.82) | 12.5 (3.63) | 12.2 (3.60) | 12.1 (3.60) | 10.3 (3.43) | 9.8 (3.31) |
| **Uttaranchal** | Economically Reasoned, All, sectorwide model | Rural | 11.4 (4.19) | 13.8 (3.81) | 13.4 (3.74) | 13.7 (3.83) | 11.0 (3.57) | 10.7 (3.39) |
| **Uttaranchal** | LASSO All, sectorwide model | Total | 10.1 (2.99) | 12.4 (2.84) | 12.3 (2.94) | 11.2 (2.83) | 9.9 (2.69) | 10.2 (2.72) |
| **Uttaranchal** | LASSO All, statewide model | Total | 10.1 (2.99) | 11.5 (2.64) | 10.9 (2.58) | 10.9 (2.56) | 9.7 (2.41) | 10.9 (2.67) |
| **Uttaranchal** | LASSO Demographics, sectorwide model | Total | 10.2 (2.84) | 12.1 (2.72) | 11.8 (2.73) | 10.9 (2.71) | 10.0 (2.65) | 10.2 (2.66) |
| **Uttaranchal** | Economically Reasoned, All, sectorwide model | Total | 10.8 (3.09) | 13.0 (2.84) | 12.6 (2.84) | 12.1 (2.87) | 10.6 (2.76) | 10.9 (2.73) |
| **Uttaranchal** | LASSO All, sectorwide model | Urban | 9.1 (2.52) | 10.8 (2.60) | 10.6 (2.97) | 8.2 (3.13) | 9.2 (2.70) | 11.3 (4.16) |
| **Uttaranchal** | LASSO All, statewide model | Urban | 9.5 (2.50) | 11.4 (2.70) | 10.6 (2.98) | 8.1 (3.02) | 9.4 (2.61) | 11.7 (4.15) |
| **Uttaranchal** | LASSO Demographics, sectorwide model | Urban | 9.7 (2.64) | 10.9 (2.66) | 10.7 (2.81) | 8.0 (3.08) | 9.1 (2.46) | 11.3 (3.98) |
| **Uttaranchal** | Economically Reasoned, All, sectorwide model | Urban | 9.1 (2.52) | 10.8 (2.60) | 10.6 (2.97) | 8.2 (3.13) | 9.2 (2.70) | 11.3 (4.16) |
| **West Bengal** | LASSO All, sectorwide model | Rural | 15.4 (2.47) | 14.5 (2.39) | 13.1 (2.30) | 12.9 (2.22) | 12.6 (2.24) | 13.0 (2.35) |
| **West Bengal** | LASSO All, statewide model | Rural | 20.4 (2.98) | 19.9 (2.93) | 19.4 (2.80) | 19.2 (2.92) | 19.1 (2.85) | 18.7 (2.71) |
| **West Bengal** | LASSO Demographics, sectorwide model | Rural | 15.8 (2.45) | 15.2 (2.40) | 13.8 (2.18) | 13.4 (2.31) | 13.7 (2.28) | 13.6 (2.23) |
| **West Bengal** | Economically Reasoned, All, sectorwide model | Rural | 15.8 (2.47) | 14.8 (2.44) | 13.5 (2.28) | 13.5 (2.31) | 12.9 (2.33) | 13.1 (2.28) |
| **West Bengal** | LASSO All, sectorwide model | Total | 15.4 (2.02) | 14.6 (1.93) | 13.0 (1.82) | 12.9 (1.79) | 12.9 (1.81) | 13.3 (1.90) |
| **West Bengal** | LASSO All, statewide model | Total | 18.9 (2.33) | 18.2 (2.26) | 17.3 (2.13) | 17.4 (2.25) | 17.6 (2.23) | 17.3 (2.12) |
| **West Bengal** | LASSO Demographics, sectorwide model | Total | 16.2 (2.00) | 15.5 (1.93) | 13.8 (1.76) | 13.5 (1.83) | 13.9 (1.85) | 14.0 (1.82) |

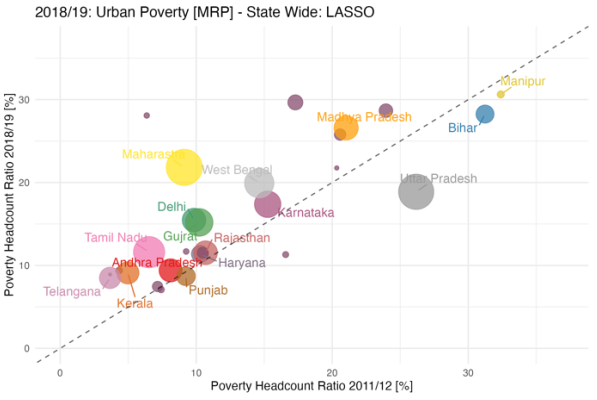
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **West Bengal** | Economically Reasoned, All, sectorwide model | Total | 15.7 (2.02) | 14.8 (1.95) | 13.2 (1.81) | 13.3 (1.84) | 13.1 (1.87) | 13.3 (1.85) |
| **West Bengal** | LASSO All, sectorwide model | Urban | 15.5 (3.49) | 14.8 (3.23) | 12.6 (2.87) | 12.7 (2.91) | 13.6 (2.92) | 14.0 (3.07) |
| **West Bengal** | LASSO All, statewide model | Urban | 15.5 (3.51) | 14.5 (3.33) | 12.6 (2.88) | 12.8 (2.97) | 13.6 (3.10) | 13.9 (3.03) |
| **West Bengal** | LASSO Demographics, sectorwide model | Urban | 17.2 (3.42) | 16.2 (3.23) | 13.8 (2.93) | 13.8 (2.76) | 14.4 (2.99) | 14.8 (3.10) |
| **West Bengal** | Economically Reasoned, All, sectorwide model | Urban | 15.5 (3.49) | 14.8 (3.23) | 12.6 (2.87) | 12.7 (2.91) | 13.6 (2.92) | 14.0 (3.07) |

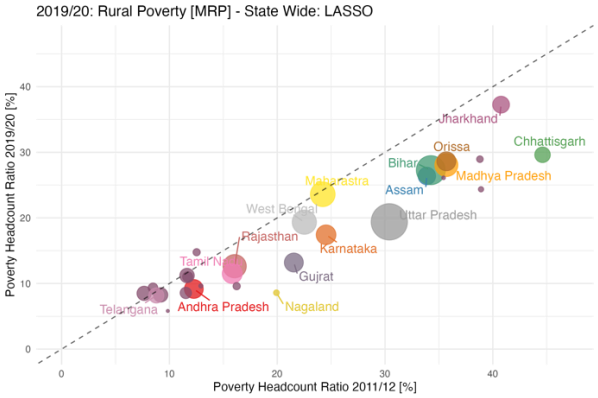
**Appendix Table 46** State estimates of poverty rate (in percentages) for 2017/18-2022/23 based on the imputation out of EUS 2011/12 into PLFS at the state-level. The EUS-poverty lines corresponding to the CES MRP measure are used to determine poverty status. Different approaches are either LASSO using all variables (including wage data) or only demographics as well as an economically reasoned model that includes wage data as well, these models have the same variables in all states, however, the covariates may differ between states. State Model describes models that have different variables per state. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

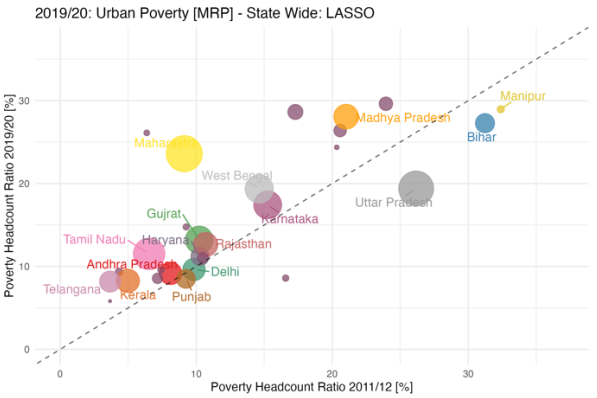

2017/18: Rural Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Chhattisgarh
Orissa
Bihar
Madhya Pradesh
Maharastra
Assam
West Bengal
Uttar Pradesh
Karnataka
Rajasthan
Gujrat
Telangana
Tamil Nadu
Nagaland
Andhra Pradesh

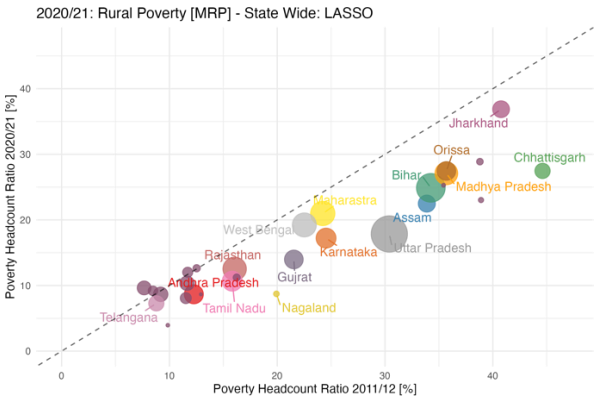

2017/18: Urban Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Madhya Pradesh
Bihar
Maharastra
West Bengal
Uttar Pradesh
Karnataka
Gujrat
Tamil Nadu
Delhi
Rajasthan
Kerala
Andhra Pradesh
Haryana
Telangana
Punjab

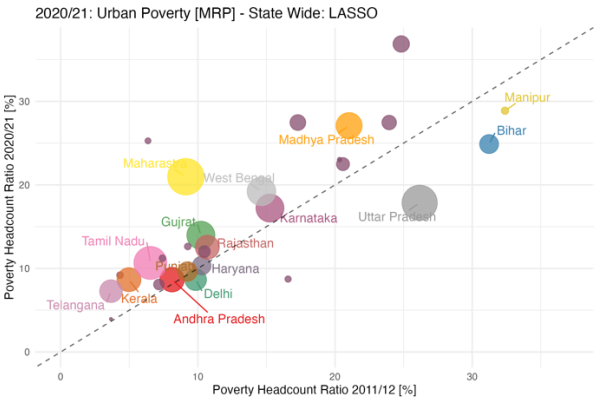

2018/19: Rural Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Chhattisgarh
Bihar
Madhya Pradesh
Maharastra
Assam
West Bengal
Uttar Pradesh
Karnataka
Tamil Nadu
Gujrat
Andhra Pradesh
Nagaland
Telangana
Rajasthan

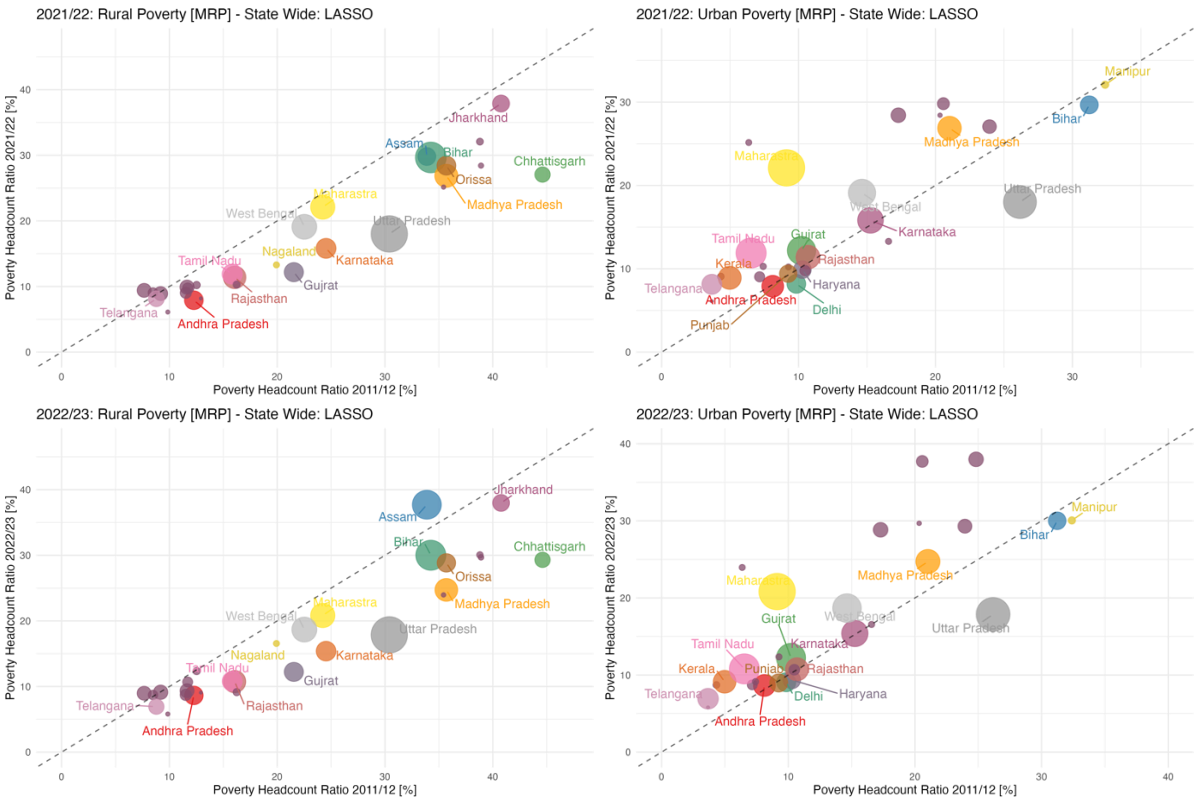

2018/19: Urban Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Madhya Pradesh
Bihar
Maharastra
West Bengal
Uttar Pradesh
Delhi
Karnataka
Tamil Nadu
Gujrat
Rajasthan
Andhra Pradesh
Haryana
Telangana
Punjab
Kerala


2019/20: Rural Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Chhattisgarh
Bihar
Madhya Pradesh
Maharastra
Assam
West Bengal
Uttar Pradesh
Rajasthan
Karnataka
Gujrat
Telangana
Andhra Pradesh
Nagaland

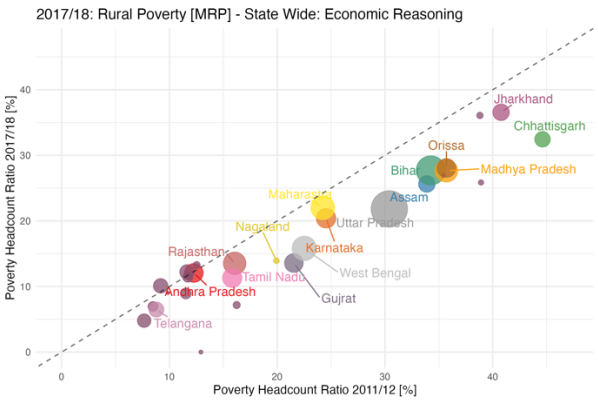

2019/20: Urban Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Madhya Pradesh
Bihar
Maharastra
West Bengal
Uttar Pradesh
Karnataka
Gujrat
Tamil Nadu
Haryana
Rajasthan
Andhra Pradesh
Delhi
Telangana
Kerala
Punjab

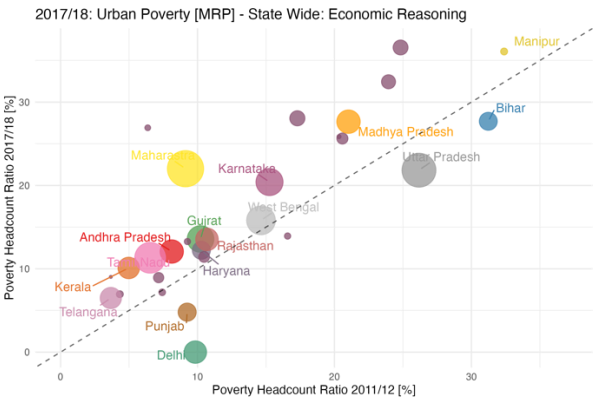

2020/21: Rural Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2020/21 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Chhattisgarh
Bihar
Madhya Pradesh
Maharastra
Assam
West Bengal
Uttar Pradesh
Karnataka
Rajasthan
Andhra Pradesh
Gujrat
Telangana
Tamil Nadu
Nagaland

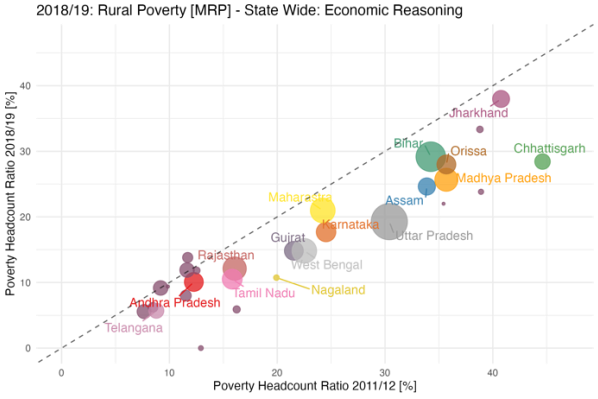

2020/21: Urban Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2020/21 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Madhya Pradesh
Bihar
Maharastra
West Bengal
Karnataka
Uttar Pradesh
Gujrat
Rajasthan
Tamil Nadu
Haryana
Delhi
Telangana
Kerala
Andhra Pradesh

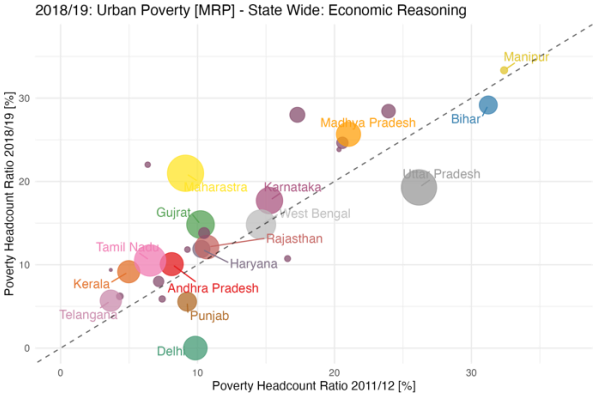


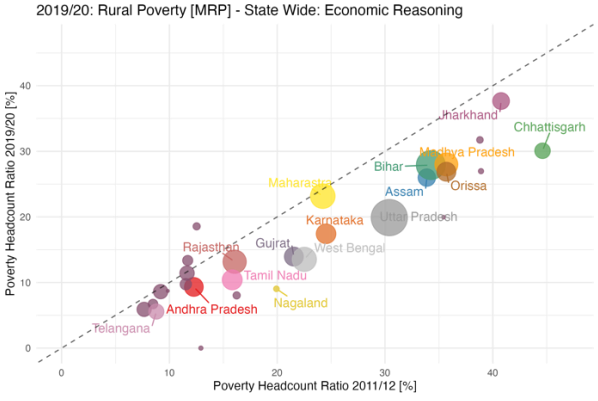

**Appendix Figure 20** Bubble plots depicting state-level estimates of poverty between 2017/2018-2022/23 (rural – left, urban – right), based on imputations out of EUS 2011/12 into different rounds of PLFS. Poverty lines are the MRP-corresponding poverty lines for the EUS-measure. The x-axis shows the official poverty rates of 2011/12 at the state-level, while the y-axis depicts estimates for differing years. The model underlying these results is a state-wide LASSO approach including demographics and labour market variables like wages. These were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

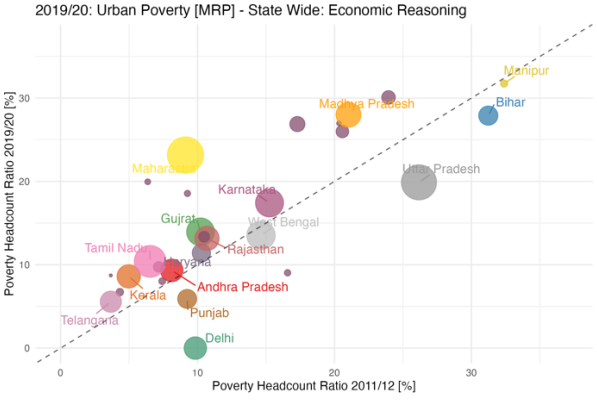

2017/18: Rural Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Chhattisgarh
Orissa
Bihar
Madhya Pradesh
Assam
Maharashtra
Uttar Pradesh
Nagaland
Karnataka
Rajasthan
West Bengal
Tamil Nadu
Gujrat
Andhra Pradesh
Telangana

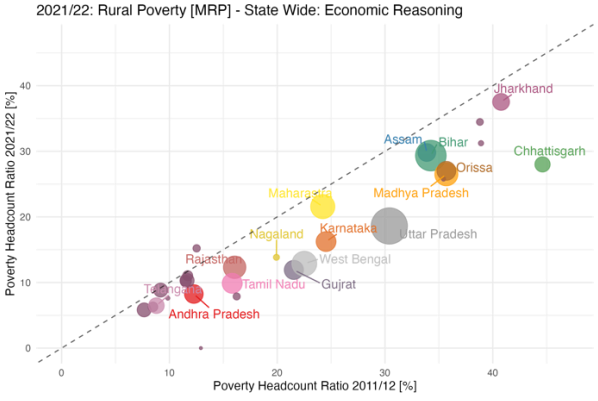

2017/18: Urban Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Madhya Pradesh
Maharashtra
Karnataka
Uttar Pradesh
West Bengal
Gujrat
Andhra Pradesh
Rajasthan
Tamil Nadu
Haryana
Kerala
Telangana
Punjab
Delhi

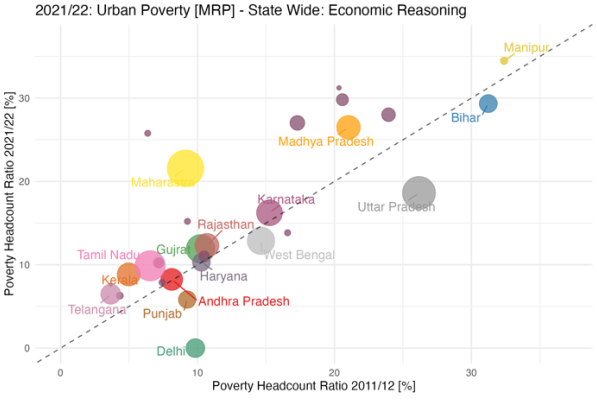

2018/19: Rural Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Bihar
Orissa
Chhattisgarh
Madhya Pradesh
Maharashtra
Assam
Karnataka
Gujrat
Uttar Pradesh
Rajasthan
West Bengal
Tamil Nadu
Nagaland
Andhra Pradesh
Telangana

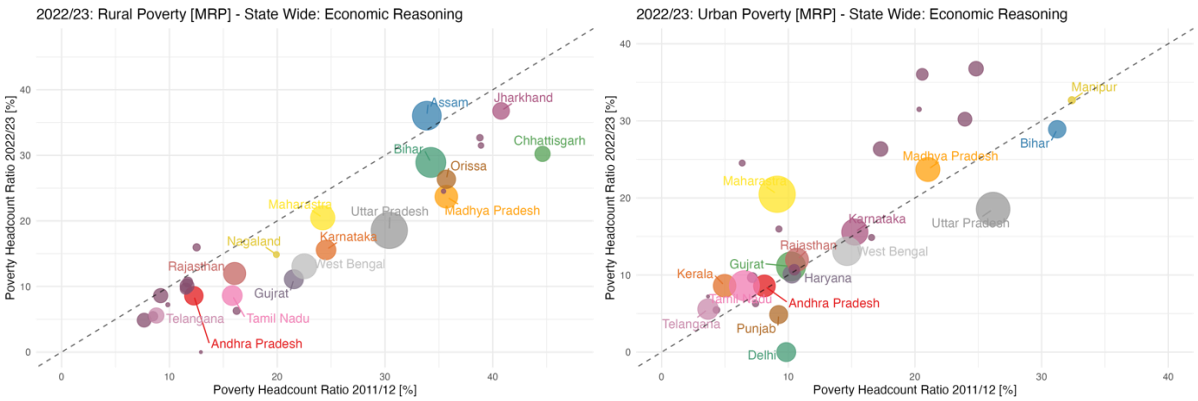

2018/19: Urban Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Madhya Pradesh
Bihar
Uttar Pradesh
Maharashtra
Karnataka
Gujrat
West Bengal
Rajasthan
Tamil Nadu
Haryana
Kerala
Andhra Pradesh
Telangana
Punjab
Delhi


2019/20: Rural Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Chhattisgarh
Madhya Pradesh
Bihar
Orissa
Maharashtra
Assam
Karnataka
Uttar Pradesh
Rajasthan
Gujrat
West Bengal
Tamil Nadu
Nagaland
Andhra Pradesh
Telangana

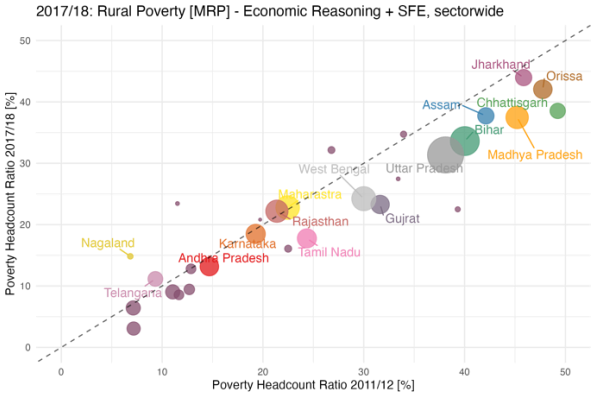

2019/20: Urban Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Madhya Pradesh
Bihar
Maharashtra
Uttar Pradesh
Karnataka
Gujrat
West Bengal
Rajasthan
Tamil Nadu
Haryana
Kerala
Andhra Pradesh
Telangana
Punjab
Delhi

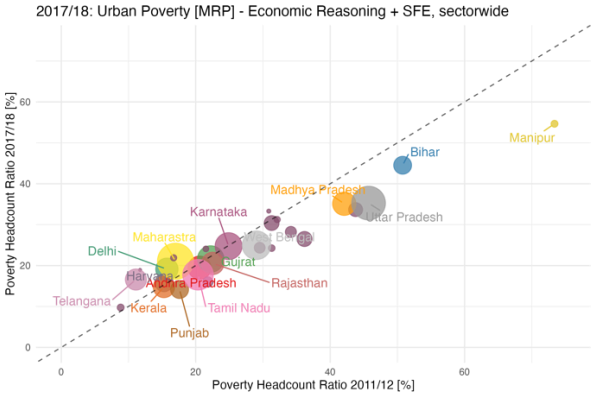

2021/22: Rural Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2021/22 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Assam
Bihar
Chhattisgarh
Orissa
Maharashtra
Madhya Pradesh
Nagaland
Karnataka
Uttar Pradesh
Rajasthan
West Bengal
Tamil Nadu
Gujrat
Andhra Pradesh

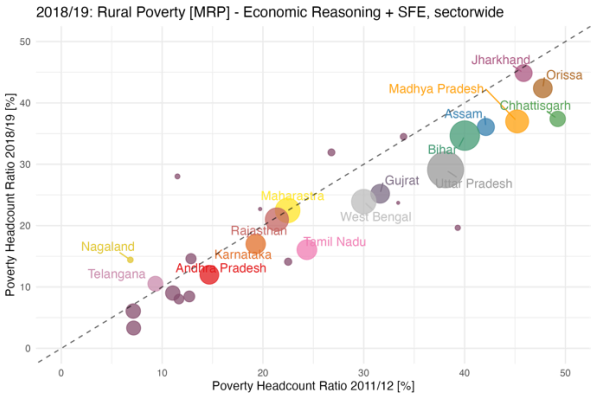

2021/22: Urban Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2021/22 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Madhya Pradesh
Maharashtra
Karnataka
Uttar Pradesh
Rajasthan
Tamil Nadu
Gujrat
West Bengal
Haryana
Kerala
Andhra Pradesh
Telangana
Punjab
Delhi

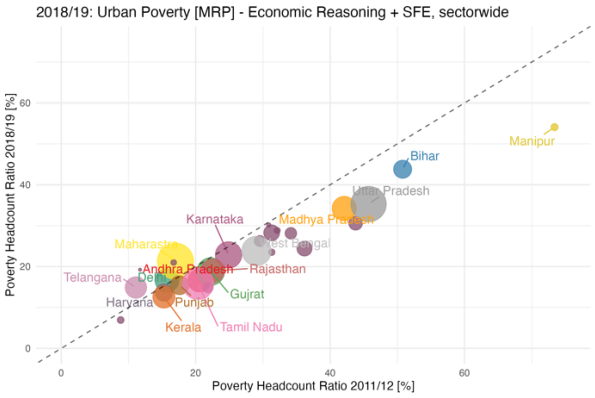


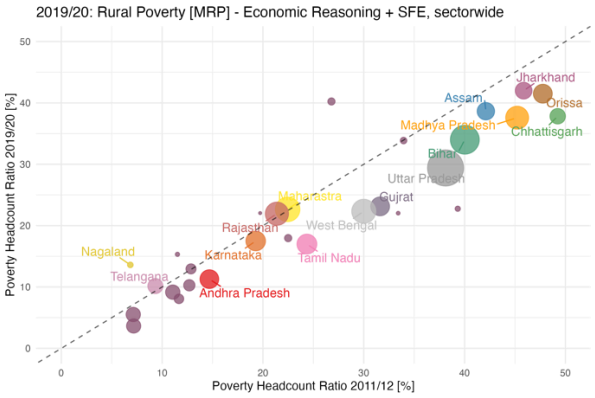

**Appendix Figure 21** Bubble plots depicting state-level estimates of poverty between 2017/2018-2022/23 (rural – left, urban – right), based on imputations out of EUS 2011/12 into different rounds of PLFS. Poverty lines are the MRP-corresponding poverty lines for the EUS-measure. The x-axis shows the official poverty rates of 2011/12 at the state-level, while the y-axis depicts estimates for differing years. The model underlying these results is the economically reasoned model that was also used for the full sector, but now employed at the state-level. This allows the individual regressor's coefficient to vary between states, this allows for additional flexibility that was emulated by the SFE in the sectorwide models. Wage variables were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

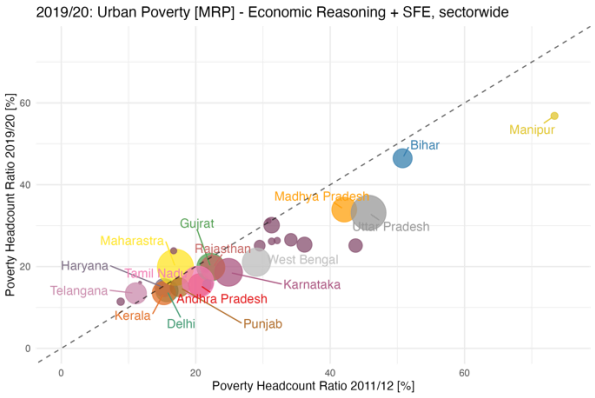

2017/18: Rural Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Assam
Chhattisgarh
Bihar
Madhya Pradesh
West Bengal
Uttar Pradesh
Maharastra
Rajasthan
Gujrat
Nagaland
Karnataka
Andhra Pradesh
Tamil Nadu
Telangana

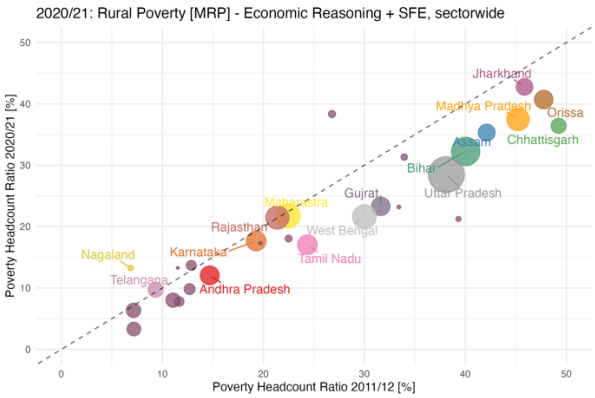

2017/18: Urban Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Madhya Pradesh
Uttar Pradesh
Karnataka
Maharastra
Delhi
Gujrat
Haryana
Andhra Pradesh
Rajasthan
Telangana
Kerala
Tamil Nadu
Punjab

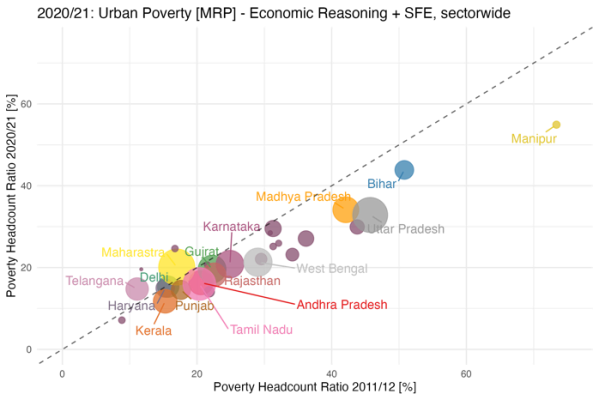

2018/19: Rural Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Madhya Pradesh
Chhattisgarh
Assam
Bihar
Gujrat
Uttar Pradesh
Maharastra
West Bengal
Rajasthan
Tamil Nadu
Nagaland
Karnataka
Telangana
Andhra Pradesh

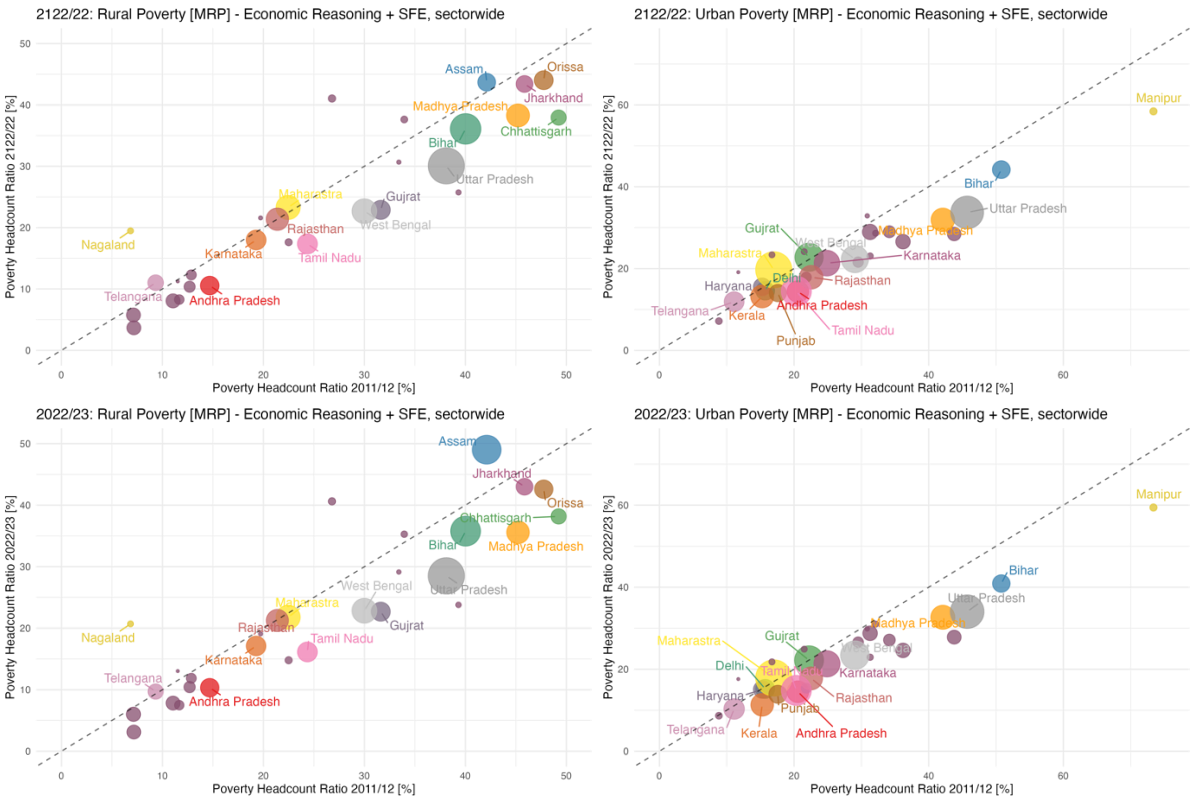

2018/19: Urban Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Uttar Pradesh
Karnataka
Madhya Pradesh
Maharastra
Andhra Pradesh
Rajasthan
Telangana
Delhi
Gujrat
Haryana
Punjab
Kerala
Tamil Nadu


2019/20: Rural Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Assam
Orissa
Madhya Pradesh
Chhattisgarh
Bihar
Uttar Pradesh
Gujrat
Maharastra
West Bengal
Rajasthan
Nagaland
Karnataka
Tamil Nadu
Telangana
Andhra Pradesh

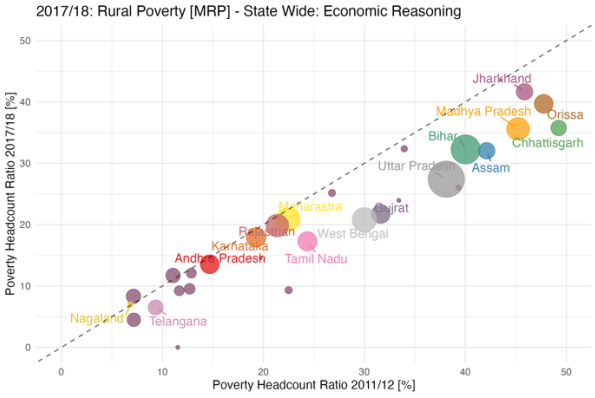

2019/20: Urban Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Madhya Pradesh
Uttar Pradesh
Gujrat
Maharastra
Rajasthan
West Bengal
Haryana
Karnataka
Telangana
Andhra Pradesh
Kerala
Delhi
Punjab

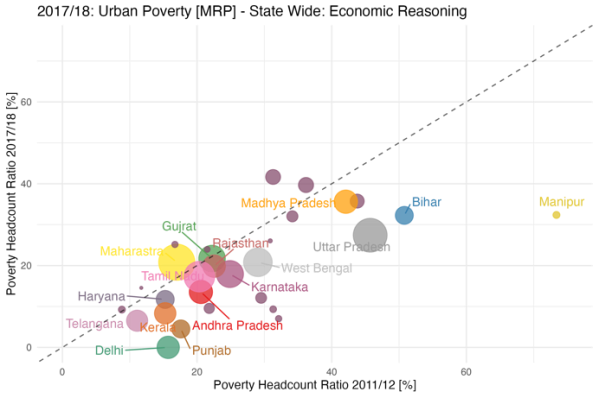

2020/21: Rural Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2020/21 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Madhya Pradesh
Orissa
Assam
Chhattisgarh
Bihar
Uttar Pradesh
Gujrat
Maharastra
Rajasthan
West Bengal
Karnataka
Nagaland
Tamil Nadu
Telangana
Andhra Pradesh

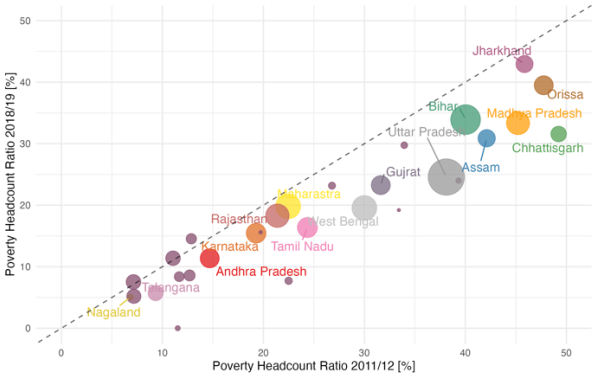

2020/21: Urban Poverty [MRP] - Economic Reasoning + SFE, sectorwide
Poverty Headcount Ratio 2020/21 [%]
Poverty Headcount Ratio 2011/12 [%]
Manipur
Bihar
Madhya Pradesh
Uttar Pradesh
Karnataka
Maharastra
Gujrat
West Bengal
Telangana
Delhi
Rajasthan
Andhra Pradesh
Haryana
Punjab
Kerala
Tamil Nadu

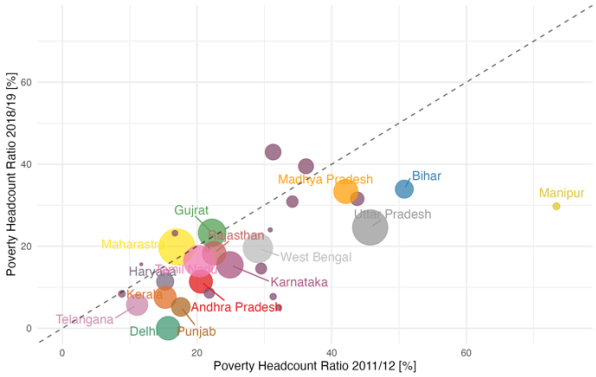


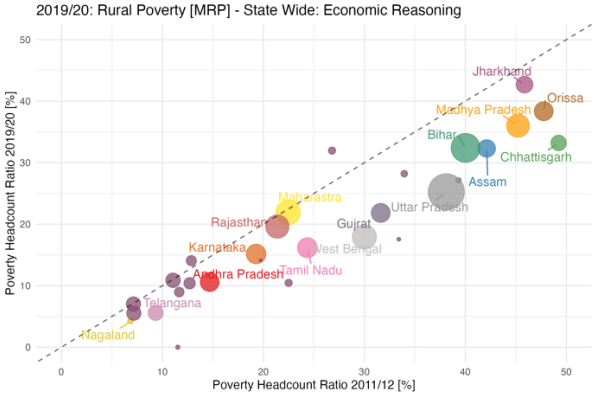

**Appendix Figure 22** Bubble plots depicting state-level estimates of poverty between 2017/2018-2022/23 (rural – left, urban – right), based on imputations out of EUS 2011/12 into different rounds of PLFS. Poverty lines are the MMRP-corresponding poverty lines for the EUS-measure. The x-axis shows the official poverty rates of 2011/12 at the state-level, while the y-axis depicts estimates for differing years. The model underlying these results is the economically reasoned model plus state-fixed effects. Wage variables were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.


2017/18: Rural Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Madhya Pradesh
Bihar
Chhattisgarh
Assam
Uttar Pradesh
Gujrat
Maharastra
Rajasthan
West Bengal
Karnataka
Andhra Pradesh
Tamil Nadu
Nagaland
Telangana


2017/18: Urban Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Madhya Pradesh
Bihar
Manipur
Gujrat
Maharastra
Rajasthan
Uttar Pradesh
West Bengal
Tamil Nadu
Karnataka
Haryana
Telangana
Kerala
Andhra Pradesh
Delhi
Punjab


2018/19: Rural Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Bihar
Madhya Pradesh
Uttar Pradesh
Chhattisgarh
Assam
Gujrat
Maharastra
Rajasthan
West Bengal
Karnataka
Tamil Nadu
Andhra Pradesh
Telangana
Nagaland


2018/19: Urban Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Madhya Pradesh
Bihar
Manipur
Gujrat
Uttar Pradesh
Maharastra
Rajasthan
West Bengal
Haryana
Tamil Nadu
Karnataka
Kerala
Andhra Pradesh
Telangana
Delhi
Punjab


2019/20: Rural Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Madhya Pradesh
Bihar
Chhattisgarh
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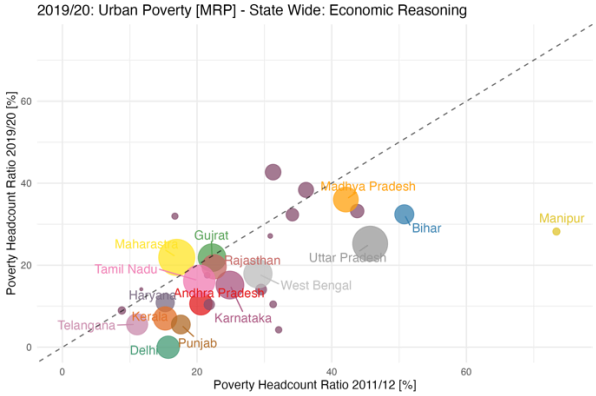
Maharastra
Uttar Pradesh
Rajasthan
Gujrat
Karnataka
West Bengal
Andhra Pradesh
Tamil Nadu
Telangana
Nagaland


2019/20: Urban Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Madhya Pradesh
Bihar
Manipur
Gujrat
Maharastra
Rajasthan
Uttar Pradesh
Tamil Nadu
West Bengal
Haryana
Andhra Pradesh
Karnataka
Kerala
Telangana
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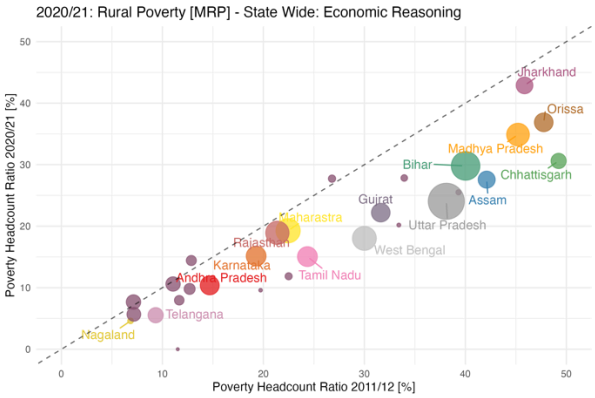
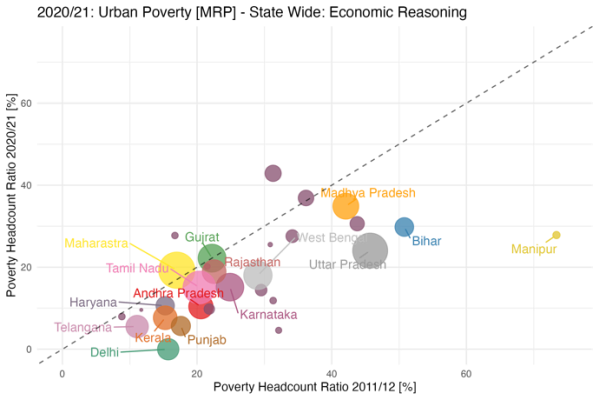
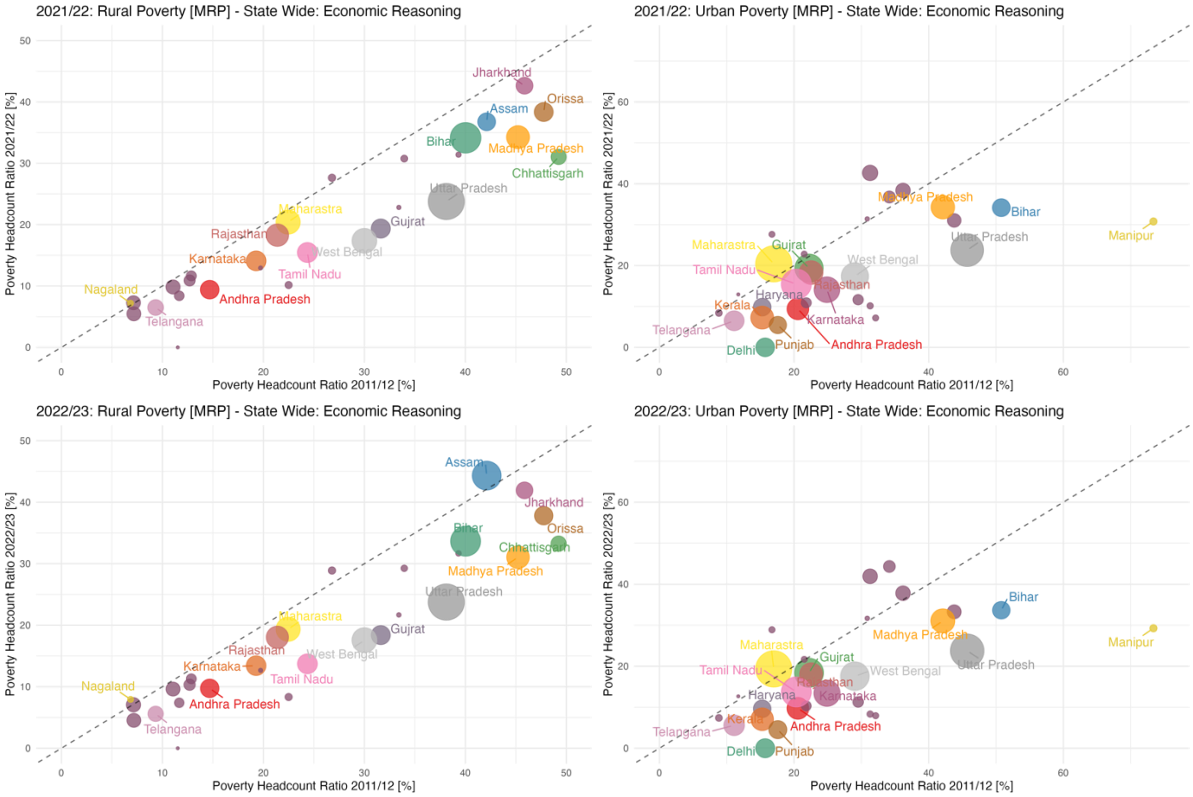
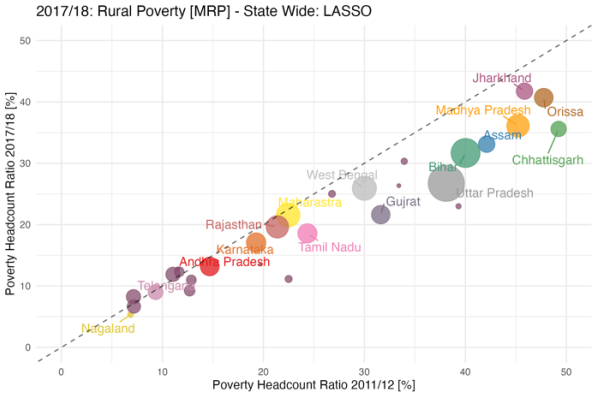
Punjab

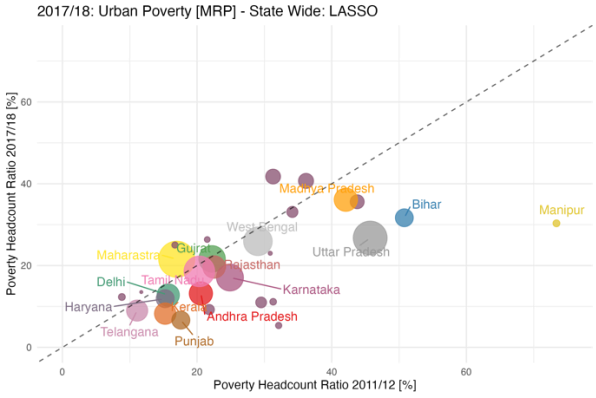

2020/21: Rural Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2020/21 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Madhya Pradesh
Bihar
Chhattisgarh
Gujrat
Assam
Maharastra
Uttar Pradesh
Rajasthan
West Bengal
Karnataka
Andhra Pradesh
Tamil Nadu
Telangana
Nagaland

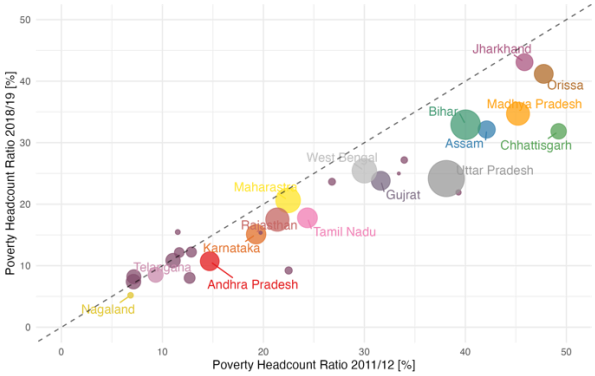

2020/21: Urban Poverty [MRP] - State Wide: Economic Reasoning
Poverty Headcount Ratio 2020/21 [%]
Poverty Headcount Ratio 2011/12 [%]
Madhya Pradesh
Bihar
Manipur
Maharastra
Gujrat
Tamil Nadu
Rajasthan
Uttar Pradesh
Andhra Pradesh
Haryana
Karnataka
Telangana
Kerala
Punjab
Delhi

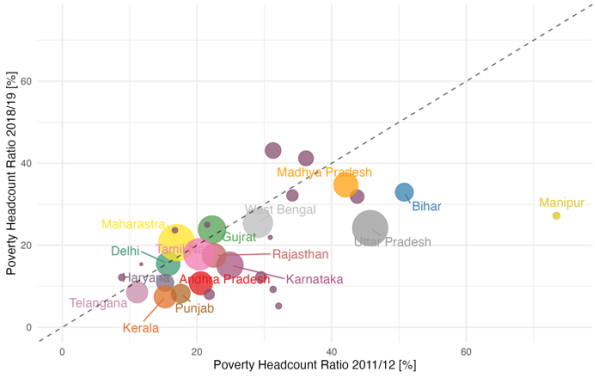



**Appendix Figure 23** Bubble plots depicting state-level estimates of poverty between 2017/2018-2022/23 (rural – left, urban – right), based on imputations out of EUS 2011/12 into different rounds of PLFS. Poverty lines are the MMRP-corresponding poverty lines for the EUS-measure. The x-axis shows the official poverty rates of 2011/12 at the state-level, while the y-axis depicts estimates for differing years. The model underlying these results is the economically reasoned model that was also used for the full sector, but now employed at the state-level. This allows the individual regressor's coefficient to vary between states, this allows for additional flexibility that was emulated by the SFE in the sectorwide models.Wage variables were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.


2017/18: Rural Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Madhya Pradesh
Orissa
Assam
Chhattisgarh
Bihar
West Bengal
Uttar Pradesh
Gujrat
Maharastra
Rajasthan
Tamil Nadu
Karnataka
Andhra Pradesh
Telangana
Nagaland


2017/18: Urban Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2017/18 [%]
Poverty Headcount Ratio 2011/12 [%]
Madhya Pradesh
Bihar
Manipur
West Bengal
Uttar Pradesh
Maharastra
Gujrat
Rajasthan
Delhi
Tamil Nadu
Karnataka
Haryana
Kerala
Andhra Pradesh
Telangana
Punjab


2018/19: Rural Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Orissa
Madhya Pradesh
Bihar
Assam
Chhattisgarh
West Bengal
Uttar Pradesh
Maharastra
Gujrat
Rajasthan
Tamil Nadu
Karnataka
Telangana
Andhra Pradesh
Nagaland


2018/19: Urban Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2018/19 [%]
Poverty Headcount Ratio 2011/12 [%]
Madhya Pradesh
Bihar
Manipur
West Bengal
Uttar Pradesh
Maharastra
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Delhi
Tamil Nadu
Rajasthan
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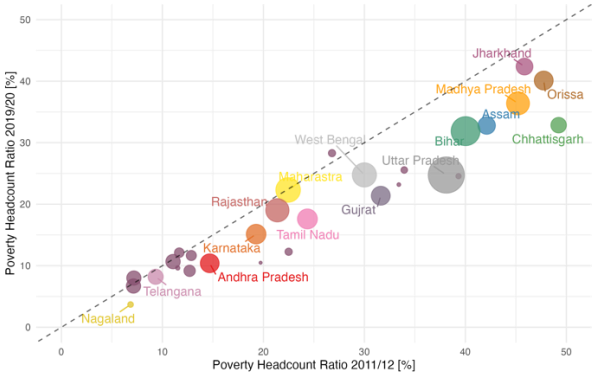
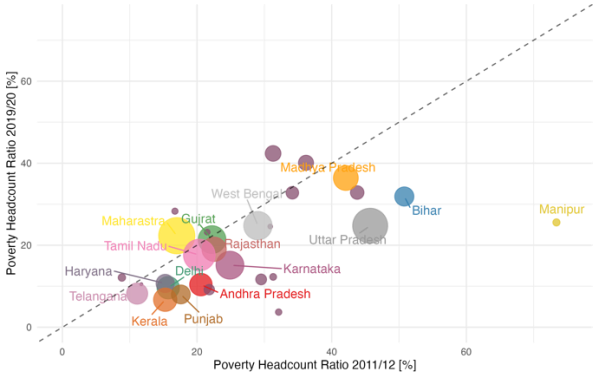
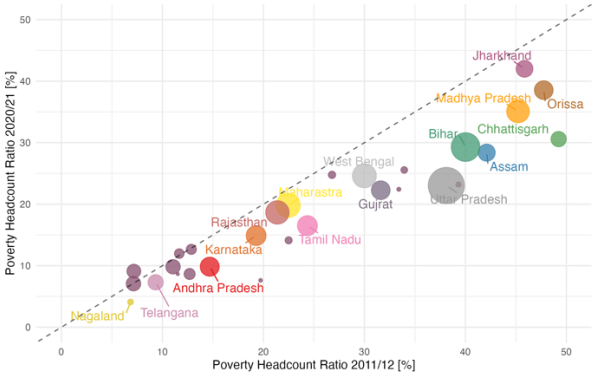
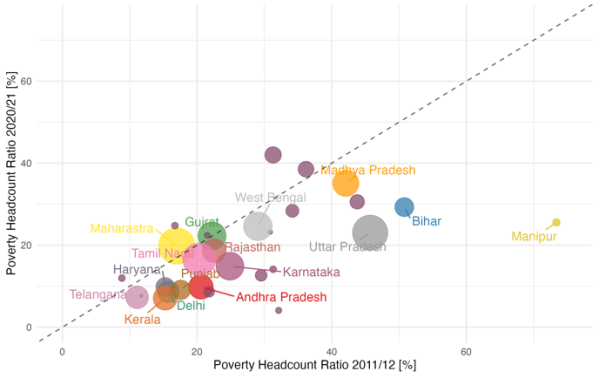
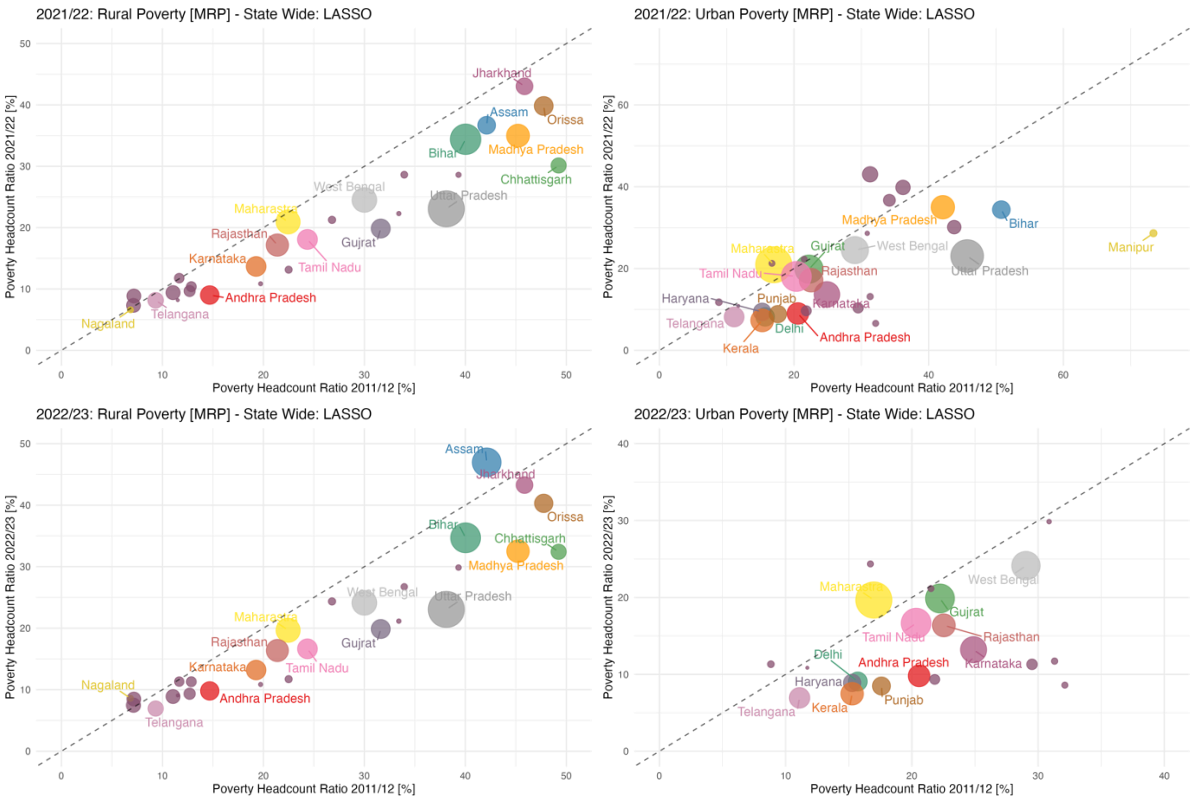
Kerala


2019/20: Rural Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Madhya Pradesh
Orissa
Assam
Bihar
Chhattisgarh
West Bengal
Uttar Pradesh
Maharastra
Rajasthan
Gujrat
Tamil Nadu
Karnataka
Andhra Pradesh
Telangana
Nagaland

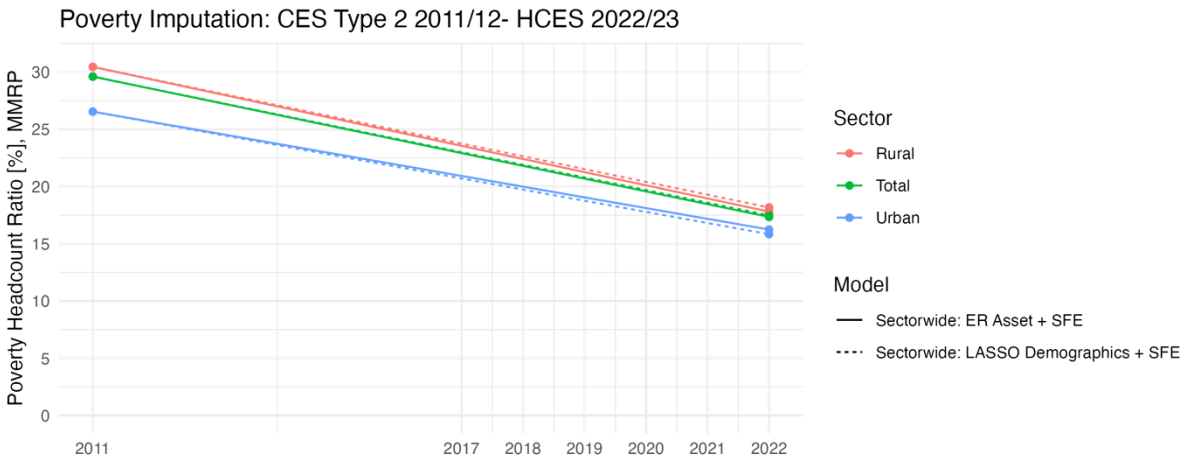

2019/20: Urban Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2019/20 [%]
Poverty Headcount Ratio 2011/12 [%]
Madhya Pradesh
Bihar
Manipur
West Bengal
Uttar Pradesh
Maharastra
Gujrat
Tamil Nadu
Rajasthan
Haryana
Delhi
Karnataka
Telangana
Andhra Pradesh
Kerala
Punjab


2020/21: Rural Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2020/21 [%]
Poverty Headcount Ratio 2011/12 [%]
Jharkhand
Madhya Pradesh
Orissa
Bihar
Chhattisgarh
Assam
West Bengal
Uttar Pradesh
Maharastra
Gujrat
Rajasthan
Tamil Nadu
Karnataka
Andhra Pradesh
Nagaland
Telangana

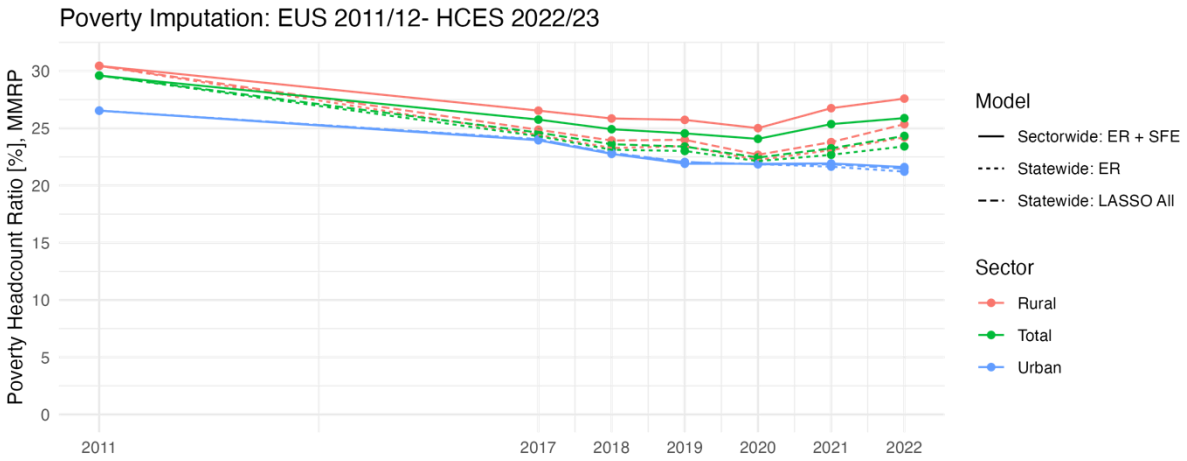

2020/21: Urban Poverty [MRP] - State Wide: LASSO
Poverty Headcount Ratio 2020/21 [%]
Poverty Headcount Ratio 2011/12 [%]
Madhya Pradesh
Bihar
Manipur
West Bengal
Uttar Pradesh
Maharastra
Gujrat
Tamil Nadu
Rajasthan
Haryana
Karnataka
Telangana
Andhra Pradesh
Delhi
Kerala



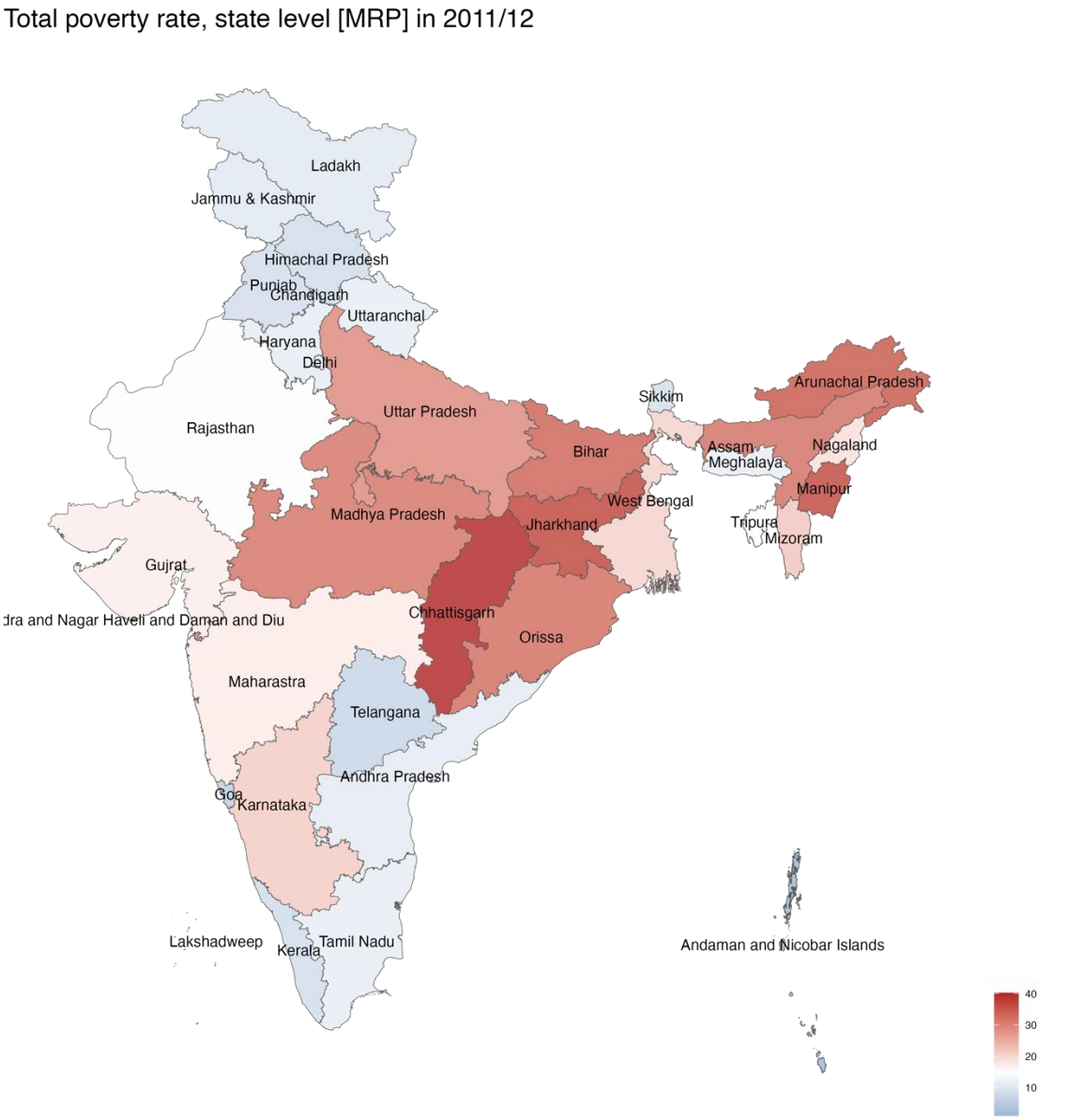

**Appendix Figure 24** Bubble plots depicting state-level estimates of poverty between 2017/2018-2022/23 (rural – left, urban – right), based on imputations out of EUS 2011/12 into different rounds of PLFS. Poverty lines are the MMRP-corresponding poverty lines for the EUS-measure. The x-axis shows the official poverty rates of 2011/12 at the state-level, while the y-axis depicts estimates for differing years. The model underlying a state-level LASSO approach. This allows the individual regressor's coefficient to vary between states. Wage variables were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.



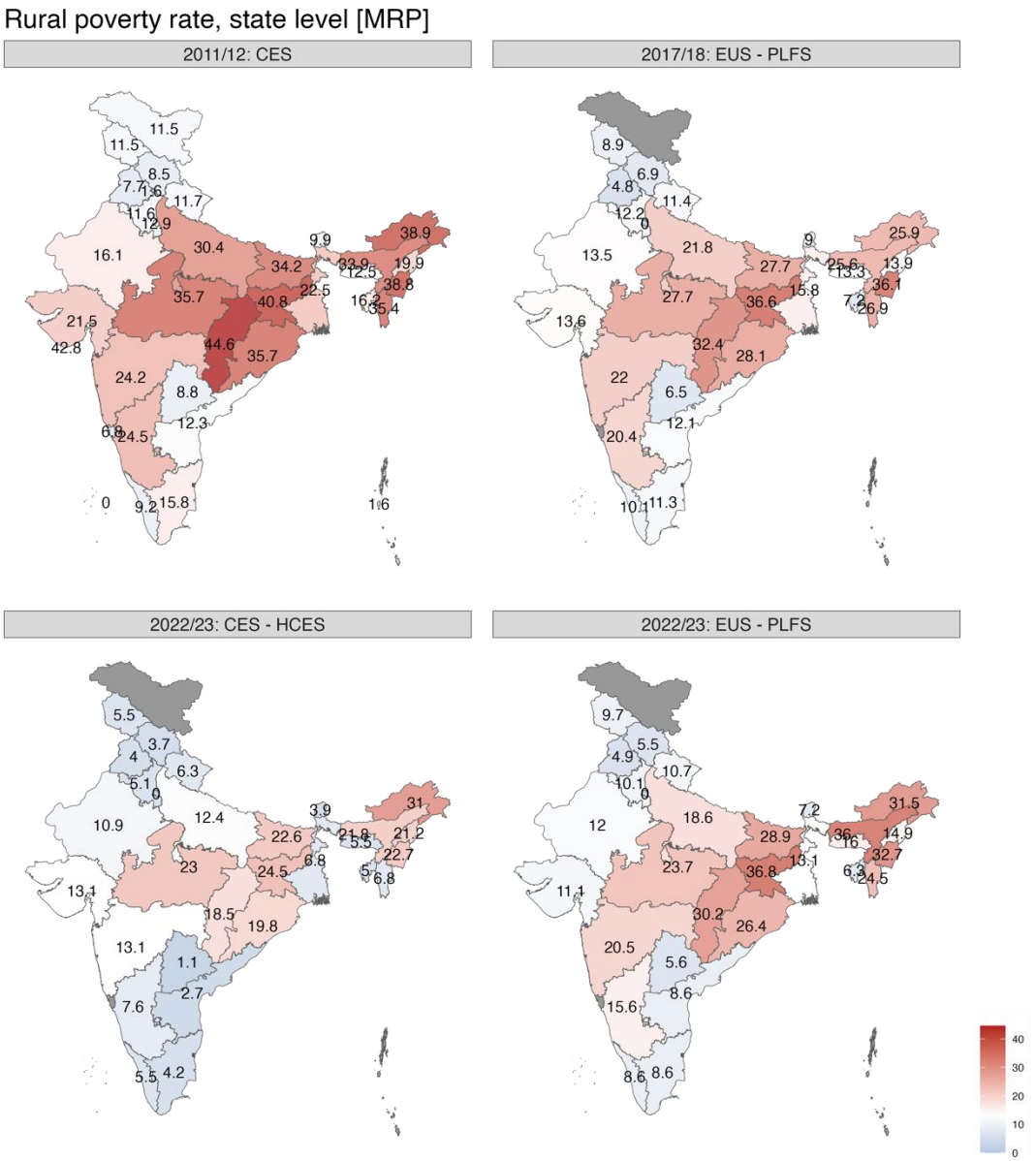

**Appendix Figure 25** Overview of estimation results based on imputations using CES Type 2 [MMRP] and HCES 2022/23. Poverty status is determined with the MMRP corresponding poverty lines of the Rangajaran committee. ER stands for Economically Reasoned Model, SFE for state-fixed effects. Wage variables were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.



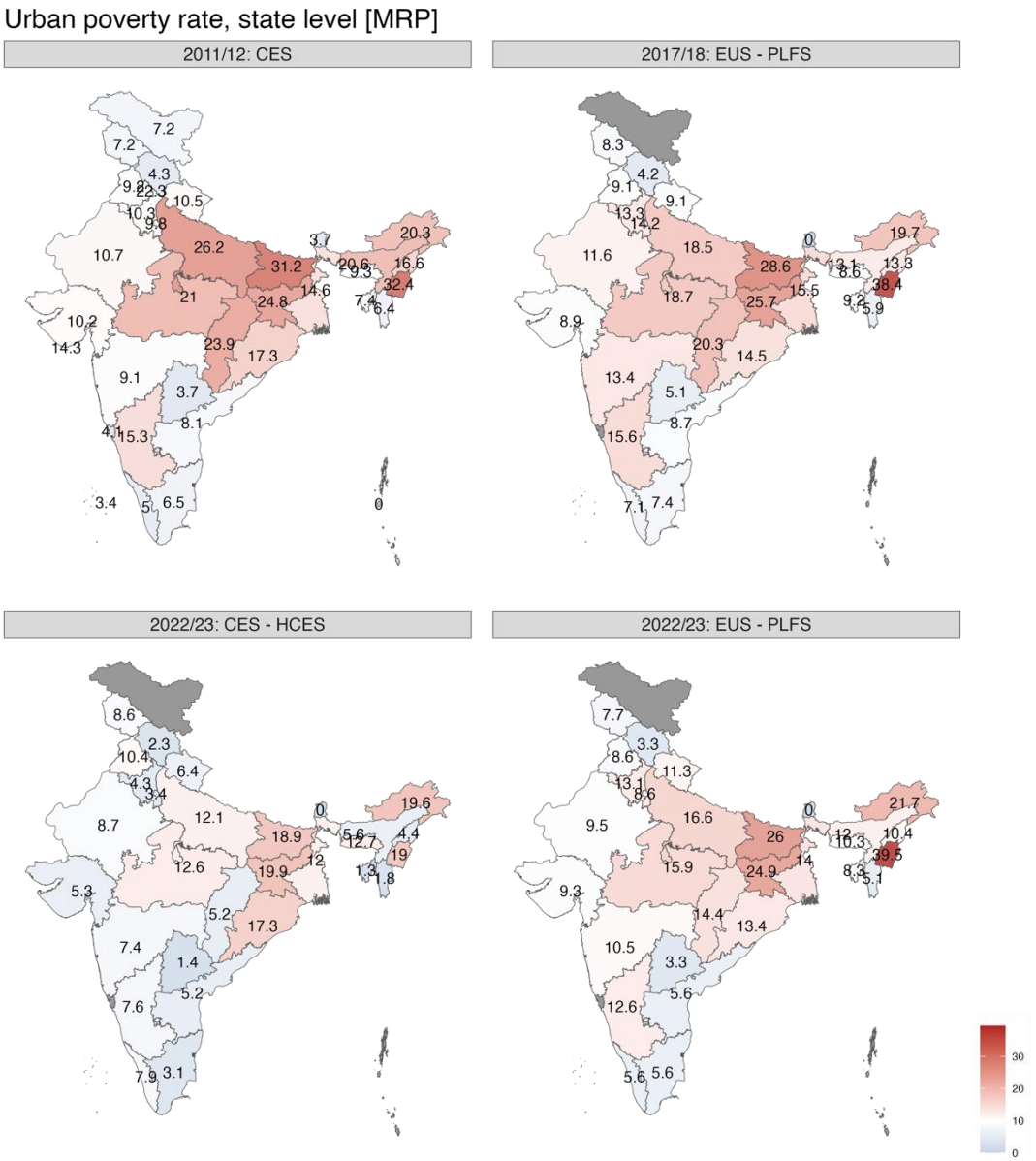

**Appendix Figure 26** Overview of estimation results based on imputations using EUS 2011/12 and HCES 2022/23. Poverty status is determined with the MMRP corresponding poverty lines for the EUS measure. ER stands for Economically Reasoned Model, SFE for state-fixed effects. Wage variables were deflated using the CPI. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.



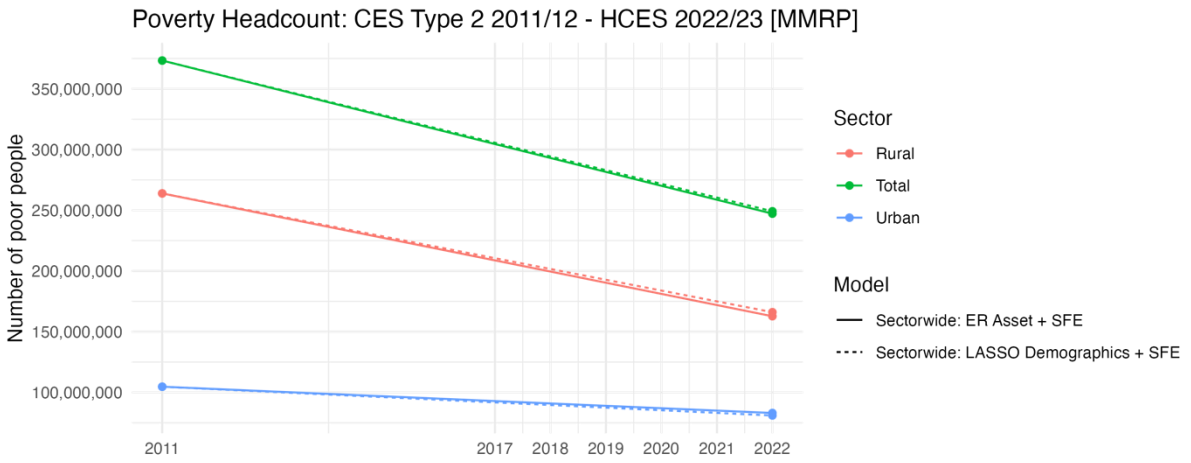

**Appendix Figure 27** Heatmap of total state-level poverty rates in 2011/12 using the MRP measure of the 2011/12 Consumer Expenditure Survey. This is nearly the same picture as visible in **Figure 12** (top-left). The only difference to that plot is that in this version the states' names are listed instead of the total poverty rates.



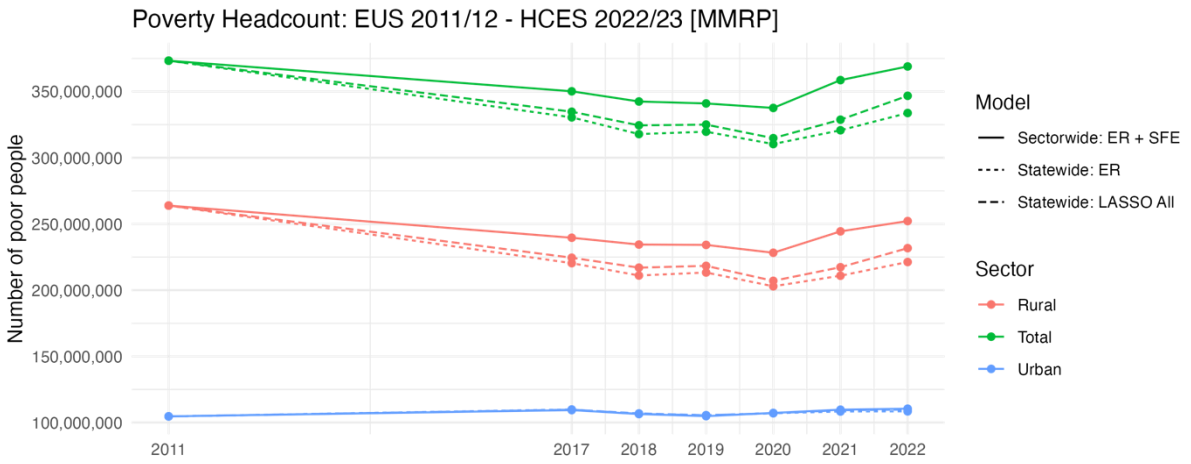

**Appendix Figure 28** Estimates of rural state-level poverty rates [MRP], for 2011/12 based on the CES Type 1 2011/12 measures as well as imputed values. The EUS-PLFS numbers are based on sectorwide imputations using an economically reasoned model that includes labour market and wage variables (deflated using the CPI), the CES-HCES map is based on an imputation using an economically reasoned model that also includes some asset ownership variables. As imputation took place at the state-level, no state-fixed effects were included. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.




**Appendix Figure 29** Estimates of urban state-level poverty rates [MRP], for 2011/12 based on the CES Type 1 2011/12 measures as well as imputed values. The EUS-PLFS numbers are based on sectorwide imputations using an economically reasoned model that includes labour market and wage variables (deflated using the CPI), the CES-HCES map is based on an imputation using an economically reasoned model that also includes some asset ownership variables. As imputation took place at the state-level, no state-fixed effects were included. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.




**Appendix Figure 30** Number of poor people, based on imputation out of CES Type 2 2011/12 into HCES 2022/23, the consumption measure and poverty lines correspond to the MMRP measure that were decided on by the Rangajaran committee. The resulting poverty shares are then multiplied with the population sizes of rural, urban and total India. ER stands for Economically Reasoned Model, SFE for state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.




**Appendix Figure 31** Number of poor people, based on imputation out of EUS 2011/12 into different rounds of PLFS, the poverty lines are those that correspond to the MMRP lines of the Rangajaran committee. The resulting poverty shares are then multiplied with the population sizes of rural, urban and total India. ER stands for Economically Reasoned Model, SFE for state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

| State | ER All + SFE | ER All | ER only demographics + SFE | ER only demographics | LASSO for PLFS + SFE | LASSO for PLFS | LASSO All + SFE | LASSO All | LASSO only demographics + SFE | LASSO only demographics |
|---|---|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 11.6 (3.58) | 17.7 (4.19) | 11.9 (3.55) | 20.2 (4.47) | 12.4 (3.63) | 20.5 (4.57) | 11.3 (3.51) | 19.1 (4.22) | 12.0 (3.69) | 20.4 (4.64) |
| **Arunachal Pradesh** | 31.9 (6.35) | 27.5 (5.64) | 29.2 (6.37) | 24.6 (5.69) | 28.1 (6.04) | 31.9 (6.31) | 26.0 (5.72) | 36.5 (5.96) | 26.2 (5.87) | 29.5 (6.06) |
| **Assam** | 35.9 (4.73) | 22.2 (3.89) | 35.5 (4.86) | 20.8 (3.87) | 34.8 (4.77) | 21.7 (3.92) | 35.9 (4.89) | 27.0 (4.10) | 35.3 (4.77) | 20.9 (3.87) |
| **Bihar** | 36.8 (4.57) | 33.4 (4.29) | 36.6 (4.50) | 32.1 (4.28) | 36.2 (4.63) | 31.0 (4.36) | 36.8 (4.55) | 32.4 (4.03) | 36.7 (4.55) | 31.8 (4.35) |
| **Chhattisgarh** | 44.4 (7.03) | 22.0 (5.69) | 43.4 (7.18) | 21.5 (5.67) | 43.7 (7.05) | 24.1 (5.96) | 44.5 (6.66) | 25.3 (5.80) | 44.1 (7.17) | 21.8 (5.76) |
| **Delhi** | 5.2 (10.63) | 16.4 (17.47) | 3.2 (8.57) | 18.7 (18.73) | 4.3 (9.74) | 16.9 (17.78) | 4.7 (10.63) | 13.8 (17.00) | 3.6 (9.03) | 19.0 (18.61) |
| **Gujrat** | 25.5 (5.46) | 37.1 (5.33) | 23.6 (5.30) | 35.3 (5.50) | 24.0 (5.39) | 32.9 (5.56) | 25.2 (5.22) | 34.1 (5.18) | 23.8 (5.40) | 34.4 (5.47) |
| **Haryana** | 11.0 (3.46) | 32.1 (4.95) | 10.3 (3.39) | 34.8 (5.29) | 9.9 (3.43) | 33.3 (5.42) | 13.1 (3.73) | 26.4 (4.42) | 10.4 (3.43) | 34.9 (5.30) |
| **Himachal Pradesh** | 7.9 (3.04) | 17.3 (4.50) | 8.1 (3.15) | 19.5 (4.84) | 8.3 (3.15) | 21.0 (5.09) | 8.0 (3.13) | 17.6 (4.25) | 8.3 (3.17) | 19.9 (5.19) |
| **Jammu & Kashmir** | 18.6 (4.35) | 25.0 (4.63) | 15.5 (4.12) | 24.0 (4.96) | 11.4 (3.28) | 25.0 (5.22) | 12.0 (3.26) | 26.2 (4.50) | 11.0 (3.37) | 23.4 (4.97) |
| **Jharkhand** | 38.8 (5.98) | 25.2 (4.89) | 38.9 (6.12) | 23.9 (5.02) | 39.1 (6.13) | 25.0 (5.07) | 39.4 (5.96) | 26.6 (4.71) | 39.2 (6.03) | 24.8 (5.02) |
| **Karnataka** | 20.5 (4.68) | 24.3 (4.71) | 20.9 (4.67) | 25.7 (4.84) | 21.2 (4.67) | 26.7 (5.08) | 20.3 (4.51) | 24.3 (4.55) | 21.4 (4.70) | 25.7 (4.97) |
| **Kerala** | 10.8 (2.92) | 23.0 (4.26) | 10.4 (2.96) | 25.7 (4.67) | 10.5 (2.88) | 26.1 (4.74) | 11.0 (2.88) | 21.4 (3.89) | 10.5 (2.88) | 26.3 (4.78) |
| **Madhya Pradesh** | 34.0 (4.14) | 25.2 (3.60) | 33.7 (4.35) | 24.1 (3.59) | 34.3 (4.38) | 24.7 (3.68) | 34.4 (4.06) | 25.4 (3.48) | 34.2 (4.32) | 24.2 (3.58) |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Maharashtra** | 25.7 (3.59) | 31.0 (3.49) | 25.8 (3.78) | 30.3 (3.75) | 25.7 (3.62) | 30.4 (3.82) | 25.6 (3.54) | 30.7 (3.35) | 25.7 (3.64) | 30.5 (3.73) |
| **Manipur** | 44.3 (7.54) | 38.9 (6.73) | 41.0 (7.65) | 36.4 (7.26) | 41.2 (7.69) | 42.0 (7.21) | 44.7 (7.22) | 46.7 (6.51) | 41.2 (7.85) | 40.7 (7.38) |
| **Meghalaya** | 20.0 (7.06) | 29.7 (8.13) | 19.8 (7.05) | 27.6 (8.40) | 19.3 (6.77) | 34.5 (9.37) | 18.7 (6.56) | 35.8 (7.93) | 20.1 (7.02) | 33.6 (9.30) |
| **Mizoram** | 33.2 (9.37) | 35.9 (8.79) | 34.5 (9.77) | 31.8 (9.26) | 34.2 (9.90) | 36.3 (9.65) | 33.8 (8.94) | 41.5 (8.40) | 34.5 (9.73) | 36.6 (9.90) |
| **Nagaland** | 39.7 (8.30) | 46.5 (8.07) | 36.0 (8.51) | 42.1 (8.55) | 30.7 (8.19) | 54.2 (8.83) | 35.4 (8.04) | 60.0 (7.41) | 31.9 (8.21) | 49.6 (8.80) |
| **Orissa** | 35.3 (4.41) | 14.2 (3.00) | 34.9 (4.34) | 13.7 (2.90) | 34.6 (4.36) | 14.8 (3.11) | 35.1 (4.30) | 16.1 (2.99) | 34.4 (4.54) | 14.4 (3.01) |
| **Punjab** | 7.3 (2.67) | 29.6 (4.82) | 7.0 (2.63) | 33.2 (5.32) | 6.6 (2.56) | 36.3 (5.54) | 9.3 (2.88) | 24.4 (3.98) | 6.9 (2.60) | 37.7 (5.44) |
| **Rajasthan** | 21.2 (3.83) | 38.1 (4.19) | 20.2 (3.70) | 35.7 (4.09) | 20.4 (3.59) | 38.2 (4.17) | 21.2 (3.56) | 35.2 (3.80) | 20.4 (3.61) | 36.0 (4.30) |
| **Sikkim** | 15.4 (7.51) | 14.2 (7.03) | 15.8 (7.87) | 12.9 (6.70) | 16.2 (8.04) | 16.7 (7.75) | 16.6 (7.98) | 23.3 (8.51) | 16.5 (8.07) | 15.7 (7.60) |
| **Tamil Nadu** | 12.6 (2.98) | 16.0 (3.27) | 13.6 (3.16) | 19.9 (3.63) | 13.4 (3.12) | 19.3 (3.55) | 12.8 (3.00) | 15.5 (3.10) | 13.5 (3.11) | 19.9 (3.77) |
| **Telangana** | 11.3 (4.17) | 16.3 (5.03) | 12.3 (4.55) | 19.3 (5.68) | 14.2 (5.04) | 19.9 (5.64) | 12.1 (4.65) | 15.6 (4.88) | 13.8 (4.99) | 19.2 (5.65) |
| **Tripura** | 17.1 (7.08) | 18.8 (6.78) | 17.8 (7.23) | 19.5 (7.33) | 17.5 (6.98) | 20.6 (7.60) | 16.3 (6.68) | 21.3 (6.91) | 17.5 (6.97) | 20.3 (7.89) |
| **Uttar Pradesh** | 29.6 (2.93) | 28.7 (2.88) | 29.5 (2.96) | 28.3 (2.94) | 29.6 (2.94) | 28.6 (2.93) | 28.9 (2.96) | 27.5 (2.73) | 29.7 (3.01) | 28.6 (2.88) |
| **Uttaranchal** | 13.0 (4.83) | 18.5 (4.87) | 12.6 (5.03) | 19.6 (5.38) | 13.0 (4.84) | 19.3 (5.41) | 15.1 (5.15) | 19.3 (4.86) | 12.5 (4.87) | 20.1 (5.40) |
| **West Bengal** | 23.6 (4.31) | 22.1 (3.94) | 23.3 (4.31) | 21.5 (4.12) | 24.2 (4.49) | 20.9 (3.99) | 22.6 (4.18) | 24.3 (3.99) | 23.4 (4.40) | 21.1 (4.07) |

**Appendix Table 47** Rural State-level poverty estimates for 2011/12, based on sectorwide imputations out of CES 2011/12 Type 1 into CES 2011/12 Type 1, poverty line corresponds to MRP. ER stands for Economically Reasoned Model, SFE for state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

| State | Economic Reasoning All + SFE | Economic Reasoning All | Economic Reasoning only demographics + SFE | Economic Reasoning only demographics | LASSO for PLFS + SFE | LASSO for PLFS | LASSO All + SFE | LASSO All | LASSO only demographics + SFE | LASSO only demographics |
|---|---|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 10.1 (2.74) | 12.2 (2.81) | 11.7 (3.13) | 13.0 (3.14) | 11.3 (3.19) | 12.9 (3.11) | 9.0 (2.64) | 12.0 (2.81) | 11.4 (3.12) | 13.1 (3.21) |
| **Arunachal Pradesh** | 18.2 (5.52) | 15.1 (4.90) | 17.5 (5.84) | 11.9 (4.51) | 17.7 (5.61) | 14.2 (4.70) | 18.3 (5.51) | 18.5 (5.13) | 18.5 (5.91) | 12.1 (4.50) |
| **Assam** | 17.7 (5.54) | 13.5 (4.71) | 16.1 (5.45) | 10.8 (4.39) | 16.1 (5.49) | 12.2 (4.56) | 15.9 (5.23) | 15.3 (4.71) | 16.0 (5.40) | 10.9 (4.30) |
| **Bihar** | 31.2 (5.25) | 24.4 (4.36) | 32.3 (5.43) | 22.0 (4.36) | 31.4 (5.55) | 22.3 (4.46) | 31.5 (5.26) | 26.0 (4.54) | 32.3 (5.46) | 22.0 (4.22) |
| **Chhattisgarh** | 21.5 (6.01) | 13.9 (4.92) | 21.9 (6.35) | 14.7 (5.25) | 22.1 (6.49) | 16.1 (5.53) | 22.7 (5.79) | 14.1 (4.77) | 22.4 (6.68) | 14.8 (5.28) |
| **Delhi** | 9.4 (5.30) | 12.2 (5.59) | 10.8 (6.11) | 17.3 (7.43) | 10.5 (5.99) | 15.5 (6.92) | 10.0 (5.25) | 11.9 (5.35) | 10.9 (6.25) | 17.5 (7.41) |
| **Gujrat** | 13.4 (3.69) | 19.0 (3.89) | 14.7 (4.15) | 19.8 (4.31) | 14.5 (4.03) | 17.8 (4.05) | 11.8 (3.38) | 18.6 (3.83) | 14.7 (4.13) | 19.5 (4.27) |
| **Haryana** | 10.0 (3.31) | 13.5 (3.48) | 8.8 (3.22) | 17.6 (4.17) | 8.7 (3.24) | 17.1 (4.23) | 10.8 (3.26) | 13.0 (3.46) | 8.8 (3.20) | 17.6 (4.22) |
| **Himachal Pradesh** | 8.3 (4.36) | 9.6 (4.32) | 7.2 (4.14) | 10.8 (4.73) | 7.0 (4.10) | 11.1 (4.69) | 6.6 (3.95) | 10.2 (4.59) | 7.1 (4.15) | 10.8 (4.87) |
| **Jammu & Kashmir** | 11.9 (3.80) | 13.7 (3.68) | 12.7 (4.41) | 14.7 (4.42) | 15.0 (4.73) | 16.0 (4.46) | 13.9 (4.00) | 14.4 (3.72) | 15.2 (4.71) | 15.6 (4.52) |
| **Jharkhand** | 22.6 (5.28) | 22.0 (5.10) | 25.0 (5.92) | 22.0 (5.29) | 24.4 (6.01) | 23.2 (5.40) | 22.0 (5.35) | 21.5 (4.91) | 24.8 (6.00) | 21.9 (5.40) |
| **Karnataka** | 16.2 (3.30) | 17.9 (3.31) | 17.2 (3.84) | 18.0 (3.92) | 17.2 (3.86) | 18.4 (4.20) | 14.9 (3.19) | 16.9 (3.21) | 17.1 (3.96) | 18.0 (3.90) |
| **Kerala** | 8.7 (2.61) | 11.8 (2.91) | 8.5 (2.75) | 15.0 (3.68) | 8.4 (2.83) | 16.5 (3.77) | 8.5 (2.51) | 12.7 (3.06) | 8.5 (2.93) | 15.1 (3.78) |
| **Madhya Pradesh** | 21.3 (3.51) | 15.1 (2.90) | 21.2 (3.51) | 14.9 (2.93) | 21.5 (3.56) | 15.2 (2.99) | 21.2 (3.33) | 13.9 (2.66) | 21.2 (3.55) | 14.9 (2.93) |
| **Maharashtra** | 13.4 (2.58) | 18.4 (2.99) | 14.5 (3.02) | 18.7 (3.64) | 13.7 (3.00) | 17.1 (3.22) | 13.4 (2.66) | 19.2 (3.16) | 14.5 (3.14) | 19.0 (3.59) |
| **Manipur** | 39.6 (7.53) | 26.3 (6.04) | 40.0 (9.32) | 20.5 (6.04) | 40.2 (9.10) | 25.4 (6.70) | 39.0 (7.72) | 28.5 (6.21) | 40.7 (8.96) | 20.5 (6.23) |
| **Meghalaya** | 17.3 (6.66) | 16.4 (5.89) | 16.3 (7.37) | 16.6 (7.12) | 15.4 (7.14) | 17.4 (7.06) | 14.4 (6.00) | 17.4 (6.19) | 16.2 (7.51) | 16.6 (7.29) |
| **Mizoram** | 11.2 (4.40) | 11.9 (4.15) | 13.8 (5.81) | 15.6 (5.99) | 13.1 (5.46) | 15.4 (6.09) | 10.6 (3.95) | 14.0 (4.59) | 14.0 (5.89) | 14.1 (5.95) |
| **Nagaland** | 18.8 (7.03) | 21.7 (7.05) | 21.5 (8.38) | 14.1 (6.39) | 22.3 (8.58) | 20.7 (7.38) | 18.5 (7.21) | 26.7 (8.05) | 21.3 (8.51) | 13.3 (6.05) |
| **Orissa** | 18.9 (5.75) | 12.1 (4.57) | 20.5 (6.11) | 12.8 (4.88) | 20.8 (6.20) | 13.2 (4.81) | 18.3 (5.47) | 11.8 (4.28) | 20.1 (5.88) | 12.5 (4.79) |
| **Punjab** | 9.7 (2.63) | 12.7 (2.92) | 10.0 (2.81) | 18.5 (3.82) | 10.3 (2.80) | 19.1 (3.78) | 10.7 (2.69) | 13.1 (2.87) | 10.2 (2.86) | 19.0 (3.84) |
| **Rajasthan** | 14.2 (3.59) | 18.3 (3.79) | 14.3 (3.97) | 20.9 (4.54) | 13.9 (3.81) | 20.4 (4.42) | 14.1 (3.56) | 16.5 (3.56) | 13.9 (3.93) | 20.7 (4.44) |
| **Sikkim** | 10.2 (9.28) | 10.5 (8.80) | 9.3 (9.43) | 11.3 (9.64) | 9.9 (9.46) | 9.4 (8.86) | 8.6 (8.64) | 12.1 (9.86) | 9.7 (9.45) | 11.1 (9.81) |
| **Tamil Nadu** | 7.9 (2.03) | 9.0 (2.05) | 8.4 (2.17) | 10.5 (2.44) | 8.7 (2.23) | 10.1 (2.33) | 7.3 (1.92) | 8.2 (1.90) | 8.6 (2.29) | 10.4 (2.42) |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Telangana** | 8.5 (3.99) | 10.1 (4.52) | 9.3 (4.56) | 10.9 (5.07) | 8.8 (4.55) | 10.4 (5.01) | 7.5 (3.79) | 9.1 (4.13) | 8.7 (4.50) | 10.9 (5.05) |
| **Tripura** | 15.1 (6.60) | 14.3 (6.23) | 16.3 (7.14) | 13.4 (6.31) | 16.6 (7.15) | 13.9 (6.43) | 11.9 (6.17) | 15.6 (6.49) | 16.3 (7.26) | 13.3 (6.39) |
| **Uttar Pradesh** | 26.1 (3.00) | 23.2 (2.71) | 25.0 (3.17) | 23.3 (2.91) | 24.7 (3.18) | 23.2 (2.93) | 26.7 (2.91) | 23.2 (2.62) | 25.1 (3.13) | 23.3 (2.89) |
| **Uttaranchal** | 15.4 (6.30) | 16.3 (5.91) | 15.7 (6.81) | 19.5 (6.78) | 16.1 (6.87) | 18.2 (6.52) | 14.9 (5.79) | 16.7 (5.86) | 15.6 (6.65) | 18.8 (6.39) |
| **West Bengal** | 15.3 (3.19) | 16.4 (3.06) | 16.4 (3.58) | 14.5 (3.16) | 16.4 (3.44) | 13.7 (3.03) | 13.3 (3.03) | 17.8 (3.26) | 16.2 (3.49) | 14.0 (3.10) |

**Appendix Table 48** Rural State-level poverty estimates for 2011/12, based on sectorwide imputations out of CES 2011/12 Type 1 into CES 2011/12 Type 1, poverty line corresponds to MRP. SFE stands for state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

| State | Economic Reasoning All + SFE | Economic Reasoning All | LASSO All + SFE | LASSO All | LASSO only demographics + SFE | LASSO only demographics | LASSO for CES + SFE | LASSO for CES |
|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 11.1 (3.38) | 14.7 (3.61) | 11.1 (3.35) | 39.7 (5.71) | 11.4 (3.47) | 15.1 (3.90) | 11.4 (3.47) | 15.1 (3.90) |
| **Arunachal Pradesh** | 16.0 (5.50) | 13.7 (4.57) | 16.7 (5.51) | 42.0 (6.57) | 16.5 (5.66) | 15.9 (5.10) | 16.5 (5.66) | 15.9 (5.10) |
| **Assam** | 19.2 (6.42) | 13.2 (5.06) | 19.0 (6.30) | 38.4 (4.51) | 18.4 (6.39) | 13.7 (5.31) | 18.4 (6.39) | 13.7 (5.31) |
| **Bihar** | 30.8 (5.62) | 19.7 (4.35) | 30.9 (5.56) | 45.2 (4.45) | 31.3 (5.92) | 20.6 (4.61) | 31.3 (5.92) | 20.6 (4.61) |
| **Chhattisgarh** | 21.0 (6.71) | 14.7 (5.68) | 21.4 (6.78) | 37.5 (6.38) | 21.0 (7.12) | 12.6 (5.48) | 21.0 (7.12) | 12.6 (5.48) |
| **Delhi** | 12.6 (5.94) | 20.4 (7.78) | 12.2 (6.33) | 28.1 (21.15) | 11.9 (6.18) | 23.0 (9.24) | 11.9 (6.18) | 23.0 (9.24) |
| **Gujrat** | 12.1 (3.70) | 21.7 (4.63) | 12.0 (3.64) | 61.3 (5.45) | 12.5 (3.97) | 22.0 (5.01) | 12.5 (3.97) | 22.0 (5.01) |
| **Haryana** | 10.4 (3.63) | 22.1 (4.80) | 10.1 (3.61) | 53.0 (5.74) | 10.4 (3.57) | 24.1 (5.03) | 10.4 (3.57) | 24.1 (5.03) |
| **Himachal Pradesh** | 5.2 (3.95) | 8.0 (4.91) | 5.1 (4.02) | 21.7 (4.88) | 5.0 (3.82) | 7.7 (4.83) | 5.0 (3.82) | 7.7 (4.83) |
| **Jammu & Kashmir** | 9.1 (4.02) | 15.1 (5.07) | 8.7 (3.98) | 33.4 (5.79) | 9.8 (4.41) | 16.4 (5.79) | 9.8 (4.41) | 16.4 (5.79) |
| **Jharkhand** | 23.5 (7.21) | 17.8 (5.61) | 23.7 (7.06) | 54.5 (5.64) | 25.9 (7.53) | 20.4 (6.38) | 25.9 (7.53) | 20.4 (6.38) |
| **Karnataka** | 16.8 (3.92) | 17.0 (3.77) | 17.1 (3.98) | 49.6 (5.29) | 17.5 (4.31) | 19.5 (4.46) | 17.5 (4.31) | 19.5 (4.46) |
| **Kerala** | 6.0 (2.16) | 7.5 (2.53) | 6.0 (2.20) | 14.7 (3.56) | 6.9 (2.42) | 10.3 (3.19) | 6.9 (2.42) | 10.3 (3.19) |
| **Madhya Pradesh** | 18.3 (3.30) | 12.8 (2.60) | 18.2 (3.29) | 39.1 (3.86) | 19.4 (3.57) | 13.5 (2.83) | 19.4 (3.57) | 13.5 (2.83) |
| **Maharashtra** | 14.8 (3.13) | 18.5 (3.67) | 14.8 (3.24) | 49.4 (3.95) | 15.5 (3.40) | 19.5 (4.16) | 15.5 (3.40) | 19.5 (4.16) |
| **Manipur** | 42.7 (9.00) | 27.2 (7.06) | 42.7 (8.92) | 54.8 (6.85) | 42.9 (9.49) | 26.2 (7.74) | 42.9 (9.49) | 26.2 (7.74) |
| **Meghalaya** | 16.0 (7.09) | 21.1 (8.13) | 16.0 (7.25) | 58.3 (8.51) | 15.9 (7.45) | 22.8 (9.09) | 15.9 (7.45) | 22.8 (9.09) |
| **Mizoram** | 13.2 (5.47) | 22.2 (7.26) | 13.3 (5.34) | 42.5 (9.12) | 11.1 (5.22) | 22.6 (8.07) | 11.1 (5.22) | 22.6 (8.07) |
| **Nagaland** | 13.6 (6.71) | 25.4 (8.50) | 13.5 (6.90) | 57.1 (8.82) | 15.1 (7.60) | 25.6 (9.13) | 15.1 (7.60) | 25.6 (9.13) |
| **Orissa** | 17.3 (5.55) | 11.0 (4.13) | 17.3 (5.54) | 30.5 (4.21) | 18.5 (5.95) | 11.4 (4.58) | 18.5 (5.95) | 11.4 (4.58) |
| **Punjab** | 9.1 (2.88) | 19.2 (4.22) | 9.3 (3.02) | 29.0 (5.10) | 9.4 (3.15) | 18.1 (4.02) | 9.4 (3.15) | 18.1 (4.02) |
| **Rajasthan** | 15.0 (4.33) | 19.0 (4.26) | 14.9 (4.15) | 42.0 (4.35) | 15.5 (4.55) | 19.4 (4.77) | 15.5 (4.55) | 19.4 (4.77) |
| **Sikkim** | 11.5 (9.53) | 14.6 (9.88) | 11.7 (9.62) | 46.9 (10.78) | 12.7 (10.56) | 18.5 (12.12) | 12.7 (10.56) | 18.5 (12.12) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Tamil Nadu** | 10.7 (2.59) | 12.5 (2.60) | 10.7 (2.50) | 33.2 (4.15) | 10.8 (2.64) | 13.5 (2.94) | 10.8 (2.64) | 13.5 (2.94) |
| **Telangana** | 7.9 (4.47) | 13.6 (6.16) | 7.8 (4.32) | 38.0 (7.11) | 8.4 (4.90) | 14.1 (7.08) | 8.4 (4.90) | 14.1 (7.08) |
| **Tripura** | 11.0 (6.64) | 11.1 (6.34) | 11.1 (6.77) | 41.8 (9.26) | 11.5 (7.19) | 13.4 (7.79) | 11.5 (7.19) | 13.4 (7.79) |
| **Uttar Pradesh** | 25.2 (3.48) | 21.5 (3.19) | 25.6 (3.55) | 43.1 (3.20) | 26.3 (3.60) | 21.5 (3.21) | 26.3 (3.60) | 21.5 (3.21) |
| **Uttaranchal** | 8.6 (5.00) | 9.1 (4.83) | 8.3 (4.89) | 23.5 (6.88) | 9.8 (5.62) | 11.4 (6.04) | 9.8 (5.62) | 11.4 (6.04) |
| **West Bengal** | 17.3 (4.42) | 15.1 (4.11) | 17.1 (4.44) | 43.0 (4.86) | 16.5 (4.60) | 14.1 (4.19) | 16.5 (4.60) | 14.1 (4.19) |

**Appendix Table 49** Urban state-level poverty estimates for 2011/12 [MRP], based on sectorwide imputations out of EUS 2011/12 into EUS 2011/12, poverty line corresponds to MRP consumption measures. SFE stands for state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

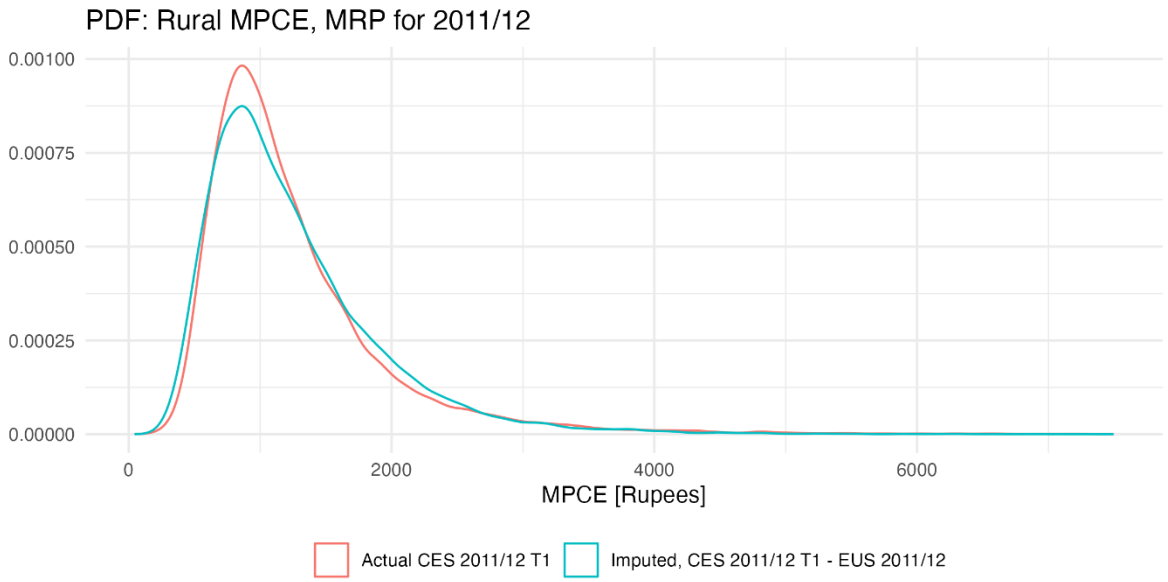
| State | Economic Reasoning All + SFE | Economic Reasoning All | LASSO All + SFE | LASSO All | LASSO only demographics + SFE | LASSO only demographics | LASSO for CES + SFE | LASSO for CES |
|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 13.8 (4.20) | 22.5 (4.76) | 13.8 (4.20) | 22.7 (4.85) | 14.1 (4.24) | 23.4 (5.38) | 14.2 (4.40) | 23.7 (5.27) |
| **Arunachal Pradesh** | 29.5 (6.51) | 26.3 (6.03) | 29.4 (6.57) | 31.9 (6.21) | 29.7 (6.94) | 37.6 (7.13) | 30.3 (6.74) | 37.4 (7.18) |
| **Assam** | 34.4 (5.01) | 23.3 (3.90) | 34.9 (5.16) | 23.9 (3.83) | 34.0 (5.12) | 23.9 (4.16) | 34.3 (5.11) | 23.5 (4.08) |
| **Bihar** | 32.7 (4.61) | 27.9 (4.08) | 33.0 (4.47) | 28.3 (4.12) | 33.2 (4.77) | 28.3 (4.28) | 33.2 (4.69) | 28.7 (4.34) |
| **Chhattisgarh** | 45.1 (7.17) | 27.5 (6.04) | 45.1 (6.90) | 27.6 (5.91) | 45.3 (7.23) | 25.8 (6.05) | 45.6 (7.14) | 24.4 (5.98) |
| **Delhi** | 11.0 (14.67) | 30.5 (21.28) | 11.0 (14.76) | 31.8 (22.07) | 10.1 (13.97) | 36.2 (24.45) | 11.0 (15.26) | 41.6 (26.00) |
| **Gujrat** | 19.9 (5.34) | 33.9 (5.90) | 19.8 (5.50) | 33.8 (5.85) | 19.5 (5.52) | 32.9 (5.89) | 19.7 (5.59) | 34.0 (6.00) |
| **Haryana** | 10.3 (3.75) | 31.5 (5.49) | 10.6 (3.81) | 31.1 (5.55) | 10.7 (3.82) | 35.3 (5.75) | 10.9 (3.81) | 35.9 (5.96) |
| **Himachal Pradesh** | 7.6 (3.02) | 17.6 (4.27) | 7.4 (3.00) | 17.0 (4.34) | 7.6 (3.09) | 18.7 (4.79) | 7.6 (3.14) | 18.4 (4.94) |
| **Jammu & Kashmir** | 11.0 (3.53) | 20.8 (4.57) | 11.0 (3.57) | 20.5 (4.77) | 12.3 (3.94) | 24.4 (5.57) | 11.9 (3.88) | 23.0 (5.57) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Jharkhand** | 43.6 (6.09) | 30.0 (5.57) | 43.0 (5.89) | 30.4 (5.43) | 43.1 (6.44) | 30.1 (5.83) | 42.9 (6.23) | 30.3 (5.81) |
| **Karnataka** | 25.5 (4.92) | 31.9 (5.10) | 25.2 (4.79) | 31.8 (5.08) | 24.4 (4.97) | 32.4 (5.26) | 24.5 (5.01) | 32.0 (5.36) |
| **Kerala** | 7.7 (2.58) | 15.2 (3.73) | 7.4 (2.43) | 15.4 (3.62) | 7.5 (2.57) | 22.1 (4.68) | 7.5 (2.55) | 22.0 (4.60) |
| **Madhya Pradesh** | 33.9 (4.29) | 26.9 (3.58) | 34.2 (4.26) | 26.6 (3.54) | 34.3 (4.31) | 25.8 (3.86) | 34.5 (4.25) | 25.9 (3.66) |
| **Maharashtra** | 25.3 (3.81) | 30.8 (3.74) | 25.3 (3.82) | 31.1 (3.69) | 25.5 (3.84) | 31.1 (4.03) | 25.7 (4.00) | 31.1 (3.94) |
| **Manipur** | 40.6 (7.63) | 43.2 (7.06) | 41.5 (7.75) | 46.0 (7.00) | 39.9 (8.29) | 46.6 (7.83) | 40.3 (8.35) | 47.8 (7.75) |
| **Meghalaya** | 22.5 (7.75) | 33.4 (8.37) | 22.9 (7.70) | 40.0 (8.80) | 22.1 (8.00) | 43.5 (9.76) | 21.8 (8.05) | 41.7 (10.01) |
| **Mizoram** | 32.9 (9.86) | 38.0 (9.47) | 33.4 (10.21) | 42.7 (9.13) | 31.8 (9.82) | 48.6 (10.44) | 33.2 (10.67) | 50.3 (10.26) |
| **Nagaland** | 26.1 (8.33) | 51.3 (9.14) | 25.6 (8.17) | 59.7 (8.71) | 26.8 (8.73) | 64.2 (9.07) | 27.0 (8.42) | 61.6 (9.21) |
| **Orissa** | 38.8 (4.62) | 19.5 (3.63) | 38.6 (4.61) | 19.2 (3.56) | 39.1 (4.89) | 19.0 (3.90) | 38.7 (4.72) | 18.3 (3.73) |
| **Punjab** | 5.1 (2.33) | 26.9 (4.78) | 5.6 (2.37) | 18.2 (4.20) | 5.5 (2.39) | 21.6 (4.82) | 5.6 (2.44) | 22.4 (4.90) |
| **Rajasthan** | 16.1 (3.47) | 27.8 (4.07) | 16.1 (3.57) | 27.6 (3.97) | 16.2 (3.59) | 29.3 (4.34) | 16.0 (3.53) | 27.9 (4.22) |
| **Sikkim** | 21.8 (9.98) | 26.2 (9.73) | 22.4 (9.71) | 26.7 (9.57) | 20.8 (9.72) | 31.7 (11.19) | 20.9 (9.58) | 30.4 (10.81) |
| **Tamil Nadu** | 15.8 (3.42) | 20.4 (3.56) | 15.8 (3.35) | 20.1 (3.47) | 15.4 (3.42) | 21.7 (3.90) | 15.5 (3.44) | 22.4 (3.93) |
| **Telangana** | 15.4 (5.28) | 27.8 (6.42) | 15.0 (5.10) | 27.5 (6.43) | 14.8 (5.10) | 27.3 (6.85) | 14.5 (5.19) | 27.2 (6.80) |
| **Tripura** | 20.6 (7.93) | 26.2 (8.16) | 21.0 (8.19) | 26.3 (8.02) | 20.2 (7.94) | 26.0 (8.90) | 20.3 (8.36) | 25.6 (8.89) |
| **Uttar Pradesh** | 29.2 (3.02) | 25.1 (2.79) | 29.3 (3.03) | 24.9 (2.79) | 29.8 (3.23) | 25.3 (2.96) | 30.0 (3.13) | 25.3 (2.99) |
| **Uttaranchal** | 17.8 (6.29) | 24.2 (6.79) | 18.2 (6.34) | 23.8 (6.88) | 18.2 (6.59) | 27.1 (7.28) | 18.3 (6.59) | 27.6 (7.57) |
| **West Bengal** | 25.6 (4.42) | 22.0 (4.03) | 25.4 (4.71) | 22.7 (3.98) | 25.5 (4.80) | 22.1 (4.32) | 25.4 (4.75) | 22.5 (4.22) |

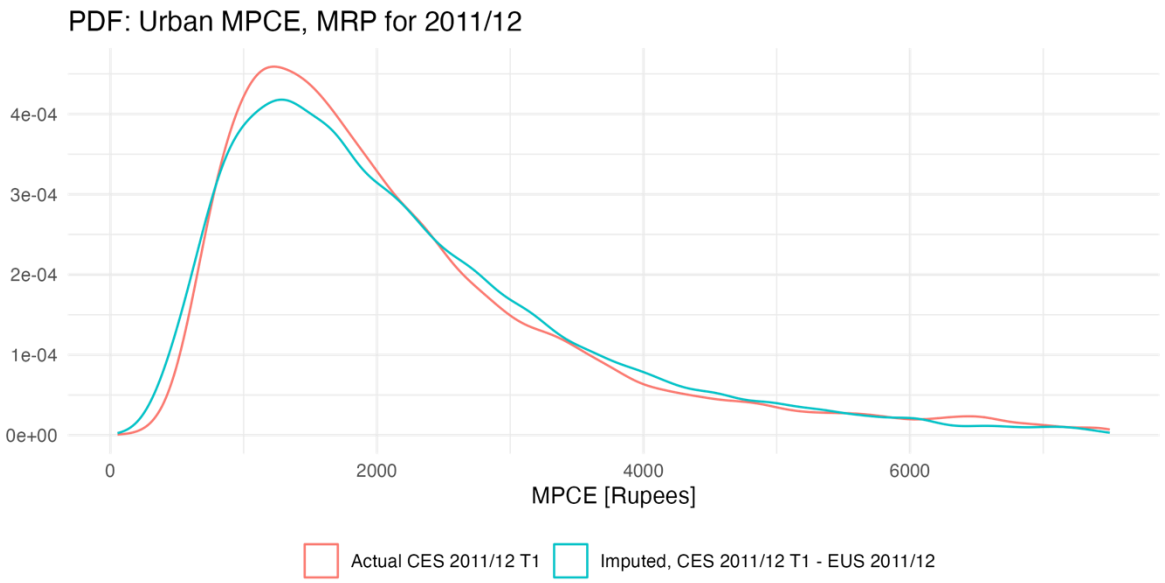
**Appendix Table 50** Rural state-level poverty estimates for 2011/12 [MRP], based on sectorwide imputations out of EUS 2011/12 into EUS 2011/12, poverty line corresponds to MRP consumption measures. SFE stands for state-fixed effects. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

| | Weighted Quantiles | | | | | | Weighted Mean |
|---|---|---|---|---|---|---|---|
| | 1% | 10% | 15% | 25% | 50% | 75% | |
| **Rural** | | | | | | | |
| **Actual** | 424 | 639 | 701 | 808 | 1072 | 1493 | 1.285 |
| **Imputed** | 377 | 599 | 670 | 791 | 1089 | 1535 | 1251 |
| **Urban** | | | | | | | |
| **Actual** | 577 | 908 | 1030 | 1252 | 1861 | 2864 | 2473 |
| **Imputed** | 459 | 853 | 984 | 1233 | 1878 | 2859 | 2268 |

**Appendix Table 51** Summary statistics of actual MPCE in CES 2011/12 next to their counterparts from the sectorwide imputation out of CES 2011/12 Type 1 into EUS 2011/12, the observations are weighted by weights that reflect household size and survey weights.




**Appendix Figure 32** Comparison of MPCE values, rural. Actual values come from the CES 2011/12 Type 1, while imputed arise out of a sectorwide imputation out of CES 2011/12 Type 1 into EUS 2011/12. The observations are weighted by weights that reflect household size and survey weights.




**Appendix Figure 33** Comparison of MPCE values, urban. Actual values come from the CES 2011/12 Type 1, while imputed arise out of a sectorwide imputation out of CES 2011/12 Type 1 into EUS 2011/12. The observations are weighted by weights that reflect household size and survey weights.

| State | Rural | Urban | Total |
|---|---|---|---|
| **Andhra Pradesh** | 12.5 (3.38) | 11.2 (2.86) | 12.1 (2.49) |
| **Arunachal Pradesh** | 29.7 (5.62) | 20.7 (5.28) | 28.0 (4.68) |
| **Assam** | 32.3 (4.33) | 17.0 (4.98) | 30.7 (3.90) |
| **Bihar** | 36.8 (3.93) | 32.6 (5.52) | 36.5 (3.64) |
| **Chhattisgarh** | 40.0 (5.93) | 21.3 (5.87) | 36.4 (4.91) |
| **Delhi** | 4.5 (6.75) | 10.4 (5.39) | 10.3 (5.29) |
| **Gujrat** | 25.5 (4.67) | 13.4 (3.52) | 20.7 (3.14) |
| **Haryana** | 10.4 (2.89) | 9.6 (2.72) | 10.1 (2.08) |
| **Himachal Pradesh** | 6.6 (2.48) | 6.6 (3.41) | 6.6 (2.25) |
| **Jammu & Kashmir** | 10.9 (2.98) | 10.7 (3.86) | 10.8 (2.47) |
| **Jharkhand** | 38.5 (5.35) | 24.3 (6.10) | 35.9 (4.50) |
| **Karnataka** | 22.3 (3.84) | 14.5 (3.46) | 19.5 (2.75) |
| **Kerala** | 10.2 (2.60) | 8.1 (2.29) | 9.3 (1.75) |
| **Madhya Pradesh** | 33.7 (3.61) | 21.8 (3.12) | 30.7 (2.81) |
| **Maharashtra** | 26.9 (3.36) | 14.4 (2.98) | 21.6 (2.31) |
| **Manipur** | 45.4 (7.22) | 41.4 (8.59) | 44.3 (5.76) |
| **Meghalaya** | 18.3 (6.58) | 15.3 (6.54) | 17.9 (5.70) |
| **Mizoram** | 35.0 (8.81) | 12.8 (5.30) | 25.2 (5.45) |
| **Nagaland** | 29.8 (7.29) | 18.6 (6.67) | 26.9 (5.66) |
| **Orissa** | 36.5 (4.06) | 18.9 (4.78) | 34.0 (3.54) |
| **Punjab** | 7.2 (2.19) | 10.6 (2.80) | 8.4 (1.73) |
| **Rajasthan** | 18.2 (2.88) | 15.3 (3.69) | 17.5 (2.36) |
| **Sikkim** | 17.9 (7.97) | 14.2 (9.70) | 16.9 (6.37) |
| **Tamil Nadu** | 13.4 (2.75) | 9.4 (2.15) | 11.6 (1.79) |
| **Telangana** | 11.8 (3.99) | 10.9 (4.95) | 11.4 (3.12) |
| **Tripura** | 17.7 (6.90) | 12.8 (6.34) | 16.7 (5.63) |
| **Uttar Pradesh** | 30.8 (2.63) | 27.7 (2.90) | 30.2 (2.18) |
| **Uttaranchal** | 13.1 (4.39) | 16.8 (5.58) | 13.9 (3.67) |
| **West Bengal** | 24.7 (4.14) | 15.5 (3.65) | 22.1 (3.16) |

**Appendix Table 52** Sector-level estimates of poverty for 2011/12, based on an imputation at the sector-level out of CES 2011/12 Type 1 into EUS 2011/12. The underlying model uses a LASSO to determine the included variables as well as state-fixed effects. The Tendulkar poverty lines for the MRP measure are used to determine poverty status. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights.

| State | Model | Urban | Rural | Total |
|---|---|---|---|---|
| **Andhra Pradesh** | LASSO for CES, sectorwide model | 10.6 (2.01) | 13.4 (3.29) | 12.5 (2.35) |
| **Andhra Pradesh** | LASSO for CES, statewide model | 10.2 (2.04) | 13.6 (3.29) | 12.5 (2.36) |
| **Arunachal Pradesh** | LASSO for CES, sectorwide model | 19.8 (6.68) | 37.1 (8.88) | 33.9 (7.34) |
| **Arunachal Pradesh** | LASSO for CES, statewide model | 20.7 (7.71) | 35.6 (8.93) | 32.9 (7.41) |
| **Assam** | LASSO for CES, sectorwide model | 18.1 (4.87) | 31.4 (3.29) | 30.0 (2.98) |
| **Assam** | LASSO for CES, statewide model | 18.9 (5.80) | 31.8 (3.41) | 30.4 (3.11) |
| **Bihar** | LASSO for CES, sectorwide model | 30.6 (4.60) | 34.5 (3.55) | 34.2 (3.29) |
| **Bihar** | LASSO for CES, statewide model | 30.2 (5.13) | 34.5 (3.76) | 34.1 (3.49) |
| **Chhattisgarh** | LASSO for CES, sectorwide model | 24.7 (4.53) | 39.4 (4.25) | 36.5 (3.54) |
| **Chhattisgarh** | LASSO for CES, statewide model | 24.5 (4.51) | 39.4 (4.72) | 36.5 (3.90) |
| **Delhi** | LASSO for CES, sectorwide model | 12.3 (4.21) | NaN (NA) | NaN (NA) |
| **Delhi** | LASSO for CES, statewide model | 12.5 (5.22) | 8.8 (14.25) | 12.4 (5.14) |
| **Gujrat** | LASSO for CES, sectorwide model | 10.8 (2.88) | 25.5 (5.05) | 19.6 (3.24) |
| **Gujrat** | LASSO for CES, statewide model | 11.1 (3.03) | 25.1 (5.04) | 19.5 (3.26) |
| **Haryana** | LASSO for CES, sectorwide model | 11.5 (2.86) | 10.9 (2.49) | 11.1 (1.89) |
| **Haryana** | LASSO for CES, statewide model | 11.1 (2.86) | 11.7 (2.76) | 11.5 (2.04) |
| **Himachal Pradesh** | LASSO for CES, sectorwide model | 7.7 (3.39) | 10.1 (2.85) | 9.8 (2.58) |
| **Himachal Pradesh** | LASSO for CES, statewide model | 7.6 (3.34) | 9.9 (3.02) | 9.7 (2.73) |
| **Jammu & Kashmir** | LASSO for CES, sectorwide model | 10.4 (3.03) | 11.8 (3.69) | 11.5 (2.95) |
| **Jammu & Kashmir** | LASSO for CES, statewide model | 10.3 (3.47) | 11.5 (3.80) | 11.2 (3.05) |
| **Jharkhand** | LASSO for CES, sectorwide model | 24.2 (4.56) | 36.3 (3.38) | 34.1 (2.88) |
| **Jharkhand** | LASSO for CES, statewide model | 23.1 (4.70) | 36.8 (3.50) | 34.3 (2.98) |
| **Karnataka** | LASSO for CES, sectorwide model | 15.9 (4.65) | 22.1 (4.31) | 19.9 (3.22) |
| **Karnataka** | LASSO for CES, statewide model | 15.8 (4.59) | 21.5 (4.25) | 19.4 (3.18) |
| **Kerala** | LASSO for CES, sectorwide model | 8.3 (2.16) | 13.9 (2.74) | 11.4 (1.78) |
| **Kerala** | LASSO for CES, statewide model | 8.8 (2.46) | 13.9 (2.69) | 11.5 (1.84) |
| **Madhya Pradesh** | LASSO for CES, sectorwide model | 21.9 (3.49) | 34.7 (4.48) | 31.5 (3.47) |
| **Madhya Pradesh** | LASSO for CES, statewide model | 21.9 (3.39) | 34.7 (4.36) | 31.5 (3.38) |
| **Maharashtra** | LASSO for CES, sectorwide model | 15.0 (3.58) | 26.8 (2.74) | 21.9 (2.19) |
| **Maharashtra** | LASSO for CES, statewide model | 16.3 (3.52) | 26.4 (3.07) | 22.1 (2.31) |
| **Manipur** | LASSO for CES, sectorwide model | 36.3 (6.66) | 43.4 (6.90) | 41.5 (5.35) |
| **Manipur** | LASSO for CES, statewide model | 38.6 (7.03) | 40.8 (7.24) | 40.2 (5.62) |
| **Meghalaya** | LASSO for CES, sectorwide model | 10.4 (5.53) | 11.7 (4.30) | 11.5 (3.77) |
| **Meghalaya** | LASSO for CES, statewide model | 12.1 (7.20) | 11.7 (5.13) | 11.8 (4.51) |
| **Mizoram** | LASSO for CES, sectorwide model | 8.8 (3.01) | 34.6 (5.27) | 23.2 (3.23) |
| **Mizoram** | LASSO for CES, statewide model | 9.0 (3.05) | 37.3 (5.69) | 24.8 (3.45) |
| **Nagaland** | LASSO for CES, sectorwide model | 11.0 (5.59) | 28.1 (6.36) | 23.6 (4.92) |
| **Nagaland** | LASSO for CES, statewide model | 13.0 (6.63) | 28.0 (6.50) | 24.1 (5.11) |
| **Orissa** | LASSO for CES, sectorwide model | 18.6 (4.56) | 35.0 (3.37) | 32.6 (2.96) |
| **Orissa** | LASSO for CES, statewide model | 17.9 (4.79) | 35.2 (3.46) | 32.7 (3.04) |
| **Punjab** | LASSO for CES, sectorwide model | 10.8 (2.19) | 11.1 (2.05) | 11.0 (1.53) |
| **Punjab** | LASSO for CES, statewide model | 11.0 (2.16) | 11.0 (2.09) | 11.0 (1.55) |
| **Rajasthan** | LASSO for CES, sectorwide model | 12.3 (3.09) | 17.7 (2.35) | 16.4 (1.93) |
| **Rajasthan** | LASSO for CES, statewide model | 12.5 (3.12) | 17.9 (2.39) | 16.6 (1.96) |
| **Sikkim** | LASSO for CES, sectorwide model | 11.3 (5.59) | NaN (NA) | NaN (NA) |
| **Sikkim** | LASSO for CES, statewide model | 3.8 (6.56) | NaN (NA) | NaN (NA) |
| **Tamil Nadu** | LASSO for CES, sectorwide model | 9.6 (1.98) | 16.1 (3.10) | 13.1 (1.92) |
| **Tamil Nadu** | LASSO for CES, statewide model | 9.5 (2.22) | 15.7 (3.16) | 12.9 (2.00) |
| **Telangana** | LASSO for CES, sectorwide model | 8.5 (5.47) | 9.8 (3.08) | 9.2 (2.97) |

| | | | | |
|---|---|---|---|---|
| **Telangana** | LASSO for CES, statewide model | 8.7 (5.95) | 10.7 (3.32) | 9.8 (3.22) |
| **Tripura** | LASSO for CES, sectorwide model | 10.2 (4.25) | 14.3 (8.30) | 13.4 (6.64) |
| **Tripura** | LASSO for CES, statewide model | 10.7 (5.21) | 14.0 (8.49) | 13.3 (6.82) |
| **Uttar Pradesh** | LASSO for CES, sectorwide model | 28.2 (3.33) | 31.6 (2.77) | 30.9 (2.31) |
| **Uttar Pradesh** | LASSO for CES, statewide model | 28.5 (3.35) | 31.6 (2.63) | 31.0 (2.20) |
| **Uttaranchal** | LASSO for CES, sectorwide model | 15.8 (4.23) | 14.3 (3.94) | 14.6 (3.24) |
| **Uttaranchal** | LASSO for CES, statewide model | 15.6 (4.48) | 14.3 (3.78) | 14.6 (3.14) |
| **West Bengal** | LASSO for CES, sectorwide model | 17.1 (3.69) | 23.8 (3.18) | 21.9 (2.52) |
| **West Bengal** | LASSO for CES, statewide model | 17.7 (4.20) | 22.9 (3.27) | 21.4 (2.63) |

**Appendix Table 53** State-level estimates of poverty for 2011/12, based on state-level imputations out of CES 2011/12 Type 1 into EUS 2011/12. The Tendulkar poverty lines for the MRP measure of CES 2011/12 type 1 are used to determine poverty status. LASSO, for CES refers to using the same model as was found at the sector-wide imputation, the state-level LASSO refers to a state-specific model that arises out of a LASSO. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| State | Rural | Urban | Total |
|---|---|---|---|
| **Andhra Pradesh** | 12.8 (3.44) | 11.8 (2.88) | 12.6 (2.62) |
| **Arunachal Pradesh** | 27.0 (5.67) | 17.6 (4.98) | 25.2 (4.66) |
| **Assam** | 39.7 (4.69) | 19.2 (4.83) | 37.6 (4.23) |
| **Bihar** | 35.0 (4.01) | 32.9 (5.42) | 34.8 (3.66) |
| **Chhattisgarh** | 44.2 (6.04) | 22.6 (6.03) | 39.6 (4.92) |
| **Delhi** | 14.6 (12.73) | 11.9 (6.02) | 12.1 (5.63) |
| **Gujrat** | 18.3 (3.94) | 14.2 (3.63) | 16.6 (2.77) |
| **Haryana** | 10.4 (2.95) | 10.4 (2.95) | 10.4 (2.25) |
| **Himachal Pradesh** | 8.3 (2.90) | 4.2 (2.45) | 7.9 (2.60) |
| **Jammu & Kashmir** | 12.0 (3.12) | 12.7 (4.12) | 12.2 (2.59) |
| **Jharkhand** | 43.4 (5.58) | 26.3 (5.97) | 39.9 (4.60) |
| **Karnataka** | 23.2 (4.13) | 18.0 (3.72) | 21.3 (2.96) |
| **Kerala** | 10.5 (2.67) | 8.7 (2.45) | 10.0 (2.07) |
| **Madhya Pradesh** | 34.4 (3.55) | 20.4 (3.10) | 30.8 (2.76) |
| **Maharashtra** | 26.4 (3.44) | 17.9 (3.33) | 22.5 (2.41) |
| **Manipur** | 37.6 (7.17) | 42.4 (8.91) | 38.9 (5.77) |
| **Meghalaya** | 22.5 (7.14) | 15.1 (6.53) | 21.0 (5.80) |
| **Mizoram** | 35.9 (9.25) | 11.9 (5.06) | 24.8 (5.50) |
| **Nagaland** | 30.1 (7.19) | 19.5 (6.86) | 26.4 (5.25) |
| **Orissa** | 36.7 (4.11) | 16.3 (4.51) | 33.6 (3.56) |
| **Punjab** | 5.6 (1.89) | 9.2 (2.44) | 6.9 (1.50) |
| **Rajasthan** | 17.7 (2.92) | 15.9 (3.77) | 17.3 (2.40) |
| **Sikkim** | 21.8 (8.59) | 9.4 (7.50) | 19.7 (7.22) |
| **Tamil Nadu** | 14.4 (2.94) | 11.1 (2.40) | 12.9 (1.95) |
| **Telangana** | 14.1 (4.27) | 8.6 (4.39) | 11.9 (3.11) |
| **Tripura** | 20.9 (7.42) | 14.1 (6.57) | 19.8 (6.36) |
| **Uttar Pradesh** | 30.1 (2.62) | 26.4 (2.86) | 29.4 (2.15) |
| **Uttaranchal** | 16.3 (5.01) | 10.4 (4.56) | 14.8 (3.92) |
| **West Bengal** | 25.4 (4.16) | 15.8 (3.62) | 22.9 (3.20) |

**Appendix Table 54** Sector-level estimates of poverty for 2011/12, based on an imputation at the sector-level out of EUS 2011/12 into CES 2011/12 Type 1. The Tendulkar-corresponding poverty lines for the EUS measure are used to determine poverty status. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| State | Model | Urban | Rural | Total |
|---|---|---|---|---|
| **Andhra Pradesh** | LASSO for CES, sectorwide model | 11.0 (2.13) | 13.6 (3.11) | 12.9 (2.34) |
| **Andhra Pradesh** | LASSO for CES, statewide model | 11.0 (2.14) | 12.9 (2.78) | 12.4 (2.10) |
| **Arunachal Pradesh** | LASSO for CES, sectorwide model | 22.1 (7.30) | 33.6 (8.18) | 31.3 (6.73) |
| **Arunachal Pradesh** | LASSO for CES, statewide model | 21.1 (7.54) | 33.0 (8.06) | 30.7 (6.64) |
| **Assam** | LASSO for CES, sectorwide model | 18.8 (4.80) | 38.6 (3.21) | 36.5 (2.92) |
| **Assam** | LASSO for CES, statewide model | 18.2 (5.37) | 36.7 (3.21) | 34.8 (2.93) |
| **Bihar** | LASSO for CES, sectorwide model | 30.9 (4.08) | 34.3 (3.76) | 33.9 (3.42) |
| **Bihar** | LASSO for CES, statewide model | 30.1 (3.96) | 33.5 (3.85) | 33.1 (3.50) |
| **Chhattisgarh** | LASSO for CES, sectorwide model | 26.2 (4.89) | 44.6 (4.39) | 40.7 (3.61) |
| **Chhattisgarh** | LASSO for CES, statewide model | 26.6 (4.76) | 44.5 (4.41) | 40.7 (3.61) |

| | | | | |
|---|---|---|---|---|
| **Delhi** | LASSO for CES, sectorwide model | 13.8 (3.92) | NaN (NA) | NaN (NA) |
| **Delhi** | LASSO for CES, statewide model | 13.9 (5.03) | 10.6 (13.34) | 13.6 (4.75) |
| **Gujrat** | LASSO for CES, sectorwide model | 12.0 (3.17) | 18.6 (4.27) | 16.0 (2.85) |
| **Gujrat** | LASSO for CES, statewide model | 11.7 (3.15) | 18.4 (4.45) | 15.7 (2.94) |
| **Haryana** | LASSO for CES, sectorwide model | 11.9 (3.13) | 11.9 (2.79) | 11.9 (2.16) |
| **Haryana** | LASSO for CES, statewide model | 11.8 (3.05) | 10.4 (2.50) | 10.8 (1.97) |
| **Himachal Pradesh** | LASSO for CES, sectorwide model | 4.6 (2.87) | 10.1 (2.59) | 9.5 (2.33) |
| **Himachal Pradesh** | LASSO for CES, statewide model | 2.7 (2.06) | 9.8 (2.72) | 9.0 (2.43) |
| **Jammu & Kashmir** | LASSO for CES, sectorwide model | 12.7 (3.06) | 13.2 (4.21) | 13.1 (3.33) |
| **Jammu & Kashmir** | LASSO for CES, statewide model | 12.4 (3.05) | 13.1 (4.00) | 13.0 (3.18) |
| **Jharkhand** | LASSO for CES, sectorwide model | 25.3 (4.70) | 42.3 (3.97) | 38.8 (3.29) |
| **Jharkhand** | LASSO for CES, statewide model | 25.2 (4.62) | 42.0 (4.08) | 38.5 (3.38) |
| **Karnataka** | LASSO for CES, sectorwide model | 19.2 (4.93) | 23.3 (4.19) | 21.9 (3.21) |
| **Karnataka** | LASSO for CES, statewide model | 19.2 (5.13) | 22.9 (4.30) | 21.6 (3.31) |
| **Kerala** | LASSO for CES, sectorwide model | 9.3 (2.26) | 13.5 (2.75) | 12.4 (2.11) |
| **Kerala** | LASSO for CES, statewide model | 9.0 (2.37) | 13.0 (2.95) | 12.0 (2.26) |
| **Madhya Pradesh** | LASSO for CES, sectorwide model | 21.8 (3.22) | 35.9 (4.14) | 32.3 (3.19) |
| **Madhya Pradesh** | LASSO for CES, statewide model | 21.9 (3.06) | 35.4 (3.98) | 32.0 (3.06) |
| **Maharashtra** | LASSO for CES, sectorwide model | 19.1 (4.43) | 26.8 (2.99) | 23.3 (2.60) |
| **Maharashtra** | LASSO for CES, statewide model | 19.1 (4.00) | 26.4 (3.19) | 23.1 (2.52) |
| **Manipur** | LASSO for CES, sectorwide model | 41.4 (8.70) | 36.0 (6.74) | 37.4 (5.46) |
| **Manipur** | LASSO for CES, statewide model | 40.7 (8.45) | 37.6 (7.11) | 38.4 (5.68) |
| **Meghalaya** | LASSO for CES, sectorwide model | 9.6 (5.13) | 15.2 (4.88) | 14.0 (4.00) |
| **Meghalaya** | LASSO for CES, statewide model | 9.6 (7.64) | 14.6 (4.95) | 13.6 (4.23) |
| **Mizoram** | LASSO for CES, sectorwide model | 7.6 (2.94) | 38.4 (6.59) | 24.2 (3.80) |
| **Mizoram** | LASSO for CES, statewide model | 6.8 (2.73) | 34.8 (7.08) | 21.9 (4.01) |
| **Nagaland** | LASSO for CES, sectorwide model | 17.1 (5.52) | 20.9 (5.33) | 19.6 (3.96) |
| **Nagaland** | LASSO for CES, statewide model | 13.9 (5.22) | 21.7 (5.64) | 19.0 (4.09) |
| **Orissa** | LASSO for CES, sectorwide model | 16.7 (4.10) | 35.6 (3.93) | 32.8 (3.40) |
| **Orissa** | LASSO for CES, statewide model | 16.5 (4.32) | 35.2 (3.91) | 32.4 (3.38) |
| **Punjab** | LASSO for CES, sectorwide model | 10.0 (1.95) | 8.5 (1.88) | 9.0 (1.39) |
| **Punjab** | LASSO for CES, statewide model | 10.1 (2.02) | 8.5 (1.82) | 9.1 (1.37) |
| **Rajasthan** | LASSO for CES, sectorwide model | 15.7 (3.72) | 18.5 (3.04) | 17.8 (2.48) |
| **Rajasthan** | LASSO for CES, statewide model | 15.7 (3.81) | 18.4 (2.93) | 17.8 (2.41) |
| **Sikkim** | LASSO for CES, sectorwide model | 4.2 (3.49) | 14.2 (6.10) | 12.4 (5.08) |
| **Sikkim** | LASSO for CES, statewide model | 2.3 (2.43) | 13.5 (5.96) | 11.5 (4.95) |
| **Tamil Nadu** | LASSO for CES, sectorwide model | 11.2 (2.30) | 17.2 (2.86) | 14.6 (1.89) |
| **Tamil Nadu** | LASSO for CES, statewide model | 10.9 (2.43) | 17.6 (2.73) | 14.6 (1.86) |
| **Telangana** | LASSO for CES, sectorwide model | 5.7 (4.25) | 11.1 (3.00) | 8.9 (2.48) |
| **Telangana** | LASSO for CES, statewide model | 5.5 (3.54) | 9.7 (2.99) | 8.0 (2.28) |
| **Tripura** | LASSO for CES, sectorwide model | 12.0 (5.31) | 15.8 (9.44) | 15.2 (8.03) |
| **Tripura** | LASSO for CES, statewide model | 11.8 (4.51) | 15.2 (9.15) | 14.6 (7.77) |
| **Uttar Pradesh** | LASSO for CES, sectorwide model | 26.8 (3.21) | 31.0 (2.79) | 30.1 (2.30) |
| **Uttar Pradesh** | LASSO for CES, statewide model | 26.8 (3.29) | 30.9 (2.64) | 30.0 (2.19) |
| **Uttaranchal** | LASSO for CES, sectorwide model | 11.3 (3.82) | 16.2 (4.72) | 15.0 (3.66) |
| **Uttaranchal** | LASSO for CES, statewide model | 11.2 (3.65) | 14.5 (4.02) | 13.7 (3.14) |
| **West Bengal** | LASSO for CES, sectorwide model | 17.5 (3.70) | 23.2 (3.20) | 21.7 (2.55) |
| **West Bengal** | LASSO for CES, statewide model | 16.2 (3.72) | 23.2 (3.23) | 21.3 (2.57) |

**Appendix Table 55** State-level estimates of poverty for 2011/12, based on state-level imputations out of EUS 2011/12 into CES 2011/12 Type 1. LASSO, for CES refers to using the same model as was found at the sector-wide imputation,

the state-level LASSO refers to a state-specific model that arises out of a LASSO. The Tendulkar-corresponding poverty lines for the EUS measure are used to determine poverty status. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

**Beta-models CES 04/05**

**CES Rural 2004/05 - Economic reasoning incl. assets**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE MRP | |
| | (1) | (2) |
| HH Type: Self-employed in Agriculture | 0.100*** | 0.117*** |
| | (0.004) | (0.004) |
| HH Type: Self-employed in Non-Agriculture | 0.129*** | 0.144*** |
| | (0.004) | (0.004) |
| HH Type: Other | 0.155*** | 0.166*** |
| | (0.005) | (0.006) |
| Regular Salary present | 0.103*** | 0.122*** |
| | (0.004) | (0.005) |
| Possess rationcard | -0.020*** | 0.025*** |
| | (0.003) | (0.004) |
| Social group: Scheduled Tribes | -0.178*** | -0.236*** |
| | (0.005) | (0.005) |
| Social group: Scheduled Castes | -0.102*** | -0.099*** |
| | (0.004) | (0.004) |
| Social group: Other | -0.049*** | -0.060*** |
| | (0.003) | (0.003) |
| Mean Age | 0.006*** | 0.006*** |
| | (0.0002) | (0.0002) |
| Male head of household | 0.023*** | 0.005 |
| | (0.005) | (0.005) |
| Religion: Hindu | -0.052*** | -0.202*** |
| | (0.007) | (0.006) |
| Religion: Islam | -0.071*** | -0.180*** |
| | (0.008) | (0.007) |
| Cooking energy: Coke/ Coal | 0.084*** | 0.027* |
| | (0.014) | (0.014) |
| Cooking energy: LPG | 0.318*** | 0.342*** |
| | (0.005) | (0.005) |
| Cooking energy: Dung cake | 0.045*** | 0.078*** |
| | (0.004) | (0.004) |

| | | |
|---|---|---|
| Cooking energy: no arrangement | -0.256*** | -0.267*** |
| | (0.026) | (0.028) |
| Lighting energy: Gas | 0.171** | 0.233*** |
| | (0.074) | (0.078) |
| Lighting energy: Electricity | 0.137*** | 0.136*** |
| | (0.003) | (0.003) |
| Share 14-25 | 0.254*** | 0.249*** |
| | (0.007) | (0.007) |
| Share 25-34 | 0.348*** | 0.333*** |
| | (0.011) | (0.012) |
| Share 34-49 | 0.252*** | 0.223*** |
| | (0.010) | (0.011) |
| Share 49-60 | 0.119*** | 0.100*** |
| | (0.011) | (0.011) |
| Share not literate | -0.256*** | -0.268*** |
| | (0.005) | (0.005) |
| Share males | 0.040*** | 0.059*** |
| | (0.008) | (0.008) |
| Share grandchildren | -0.063*** | -0.041*** |
| | (0.008) | (0.009) |
| HH size: 1 | 0.463*** | 0.476*** |
| | (0.015) | (0.016) |
| HH size: 2 | 0.326*** | 0.329*** |
| | (0.007) | (0.008) |
| HH size: 3 | 0.260*** | 0.258*** |
| | (0.005) | (0.005) |
| HH size: 4 | 0.190*** | 0.188*** |
| | (0.004) | (0.004) |
| HH size: 5 | 0.107*** | 0.104*** |
| | (0.003) | (0.004) |
| Log land possessed (ha) | 0.026*** | 0.024*** |
| | (0.001) | (0.001) |
| Owns land | 0.060*** | 0.058*** |
| | (0.006) | (0.007) |
| Owns Bicycle | 0.030*** | 0.019*** |
| | (0.005) | (0.005) |
| Owns TV | 0.078*** | 0.086*** |
| | (0.007) | (0.008) |

| | | |
|---|---|---|
| Owns Electric fan | 0.037*** | 0.047*** |
| | (0.006) | (0.007) |
| Constant | 5.804*** | 5.788*** |
| | (0.059) | (0.014) |
| State-fixed effects | Yes | No |
| Observations | 78,639 | 78,639 |
| $R^2$ | 0.504 | 0.442 |
| Adjusted $R^2$ | 0.504 | 0.441 |
| Residual Std. Error | 32.133 (df = 78574) | 34.093 (df = 78603) |
| F Statistic | 1,248.271*** (df = 64; 78574) | 1,776.235*** (df = 35; 78603) |
| *Note:* | | *p**p***p<0.01 |

**Appendix Table 56** Beta-models for rural imputations out of CES 2004/05, economically reasoned incl. assets

**CES Urban 2004/05 - Economic reasoning incl. assets**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE MRP | |
| | (1) | (2) |
| HH Type: Casual labour | -0.122*** | -0.110*** |
| | (0.007) | (0.007) |
| Regular Salary present | 0.044*** | 0.048*** |
| | (0.004) | (0.004) |
| Possess rationcard | -0.032*** | -0.004 |
| | (0.005) | (0.005) |
| Social group: Scheduled Tribes | -0.136*** | -0.149*** |
| | (0.012) | (0.012) |
| Social group: Scheduled Castes | -0.144*** | -0.141*** |
| | (0.006) | (0.006) |
| Social group: Other | -0.123*** | -0.135*** |
| | (0.005) | (0.005) |
| Female has highest education | 0.025*** | 0.029*** |
| | (0.004) | (0.004) |
| Children's generation has highest education | 0.056*** | 0.052*** |
| | (0.004) | (0.004) |

| | | |
|---|---|---|
| Non-relatives/ servants present | 0.451*** | 0.453*** |
| | (0.018) | (0.019) |
| Religion: Hindu | -0.097*** | -0.128*** |
| | (0.009) | (0.008) |
| Religion: Islam | -0.143*** | -0.178*** |
| | (0.010) | (0.010) |
| Dwelling owned | 0.146*** | 0.135*** |
| | (0.007) | (0.007) |
| Cooking energy: Coke/ Coal | -0.109*** | -0.112*** |
| | (0.015) | (0.014) |
| Cooking energy: Firewood/ chips | -0.130*** | -0.114*** |
| | (0.010) | (0.010) |
| Cooking energy: LPG | 0.229*** | 0.252*** |
| | (0.010) | (0.010) |
| Cooking energy: Kerosene | -0.037*** | 0.0003 |
| | (0.011) | (0.011) |
| Cooking energy: Electricity | 0.142*** | 0.095** |
| | (0.046) | (0.046) |
| Lighting energy: Cnadle | 0.150*** | 0.214*** |
| | (0.053) | (0.054) |
| Lighting energy: Electricity | 0.094*** | 0.122*** |
| | (0.008) | (0.008) |
| Share < 14 | -0.121*** | -0.120*** |
| | (0.012) | (0.012) |
| Share not literate | -0.145*** | -0.164*** |
| | (0.010) | (0.010) |
| Share formally educated, literate | 0.405*** | 0.402*** |
| | (0.010) | (0.010) |
| Share males | 0.030** | 0.029** |
| | (0.012) | (0.012) |
| Share married | 0.170*** | 0.189*** |
| | (0.010) | (0.010) |
| HH size: 1 | 0.618*** | 0.650*** |
| | (0.015) | (0.015) |
| HH size: 2 | 0.479*** | 0.484*** |
| | (0.011) | (0.011) |
| HH size: 3 | 0.357*** | 0.362*** |
| | (0.007) | (0.007) |

| | | |
|---|---|---|
| HH size: 4 | 0.258*** | 0.264*** |
| | (0.005) | (0.005) |
| HH size: 5 | 0.156*** | 0.163*** |
| | (0.005) | (0.005) |
| Log land possessed (ha) | 0.022*** | 0.019*** |
| | (0.001) | (0.001) |
| Owns land | -0.065*** | -0.058*** |
| | (0.007) | (0.007) |
| Owns TV | 0.019*** | 0.024*** |
| | (0.007) | (0.007) |
| Owns Refrigerator | 0.180*** | 0.195*** |
| | (0.010) | (0.010) |
| Owns AC | 0.668*** | 0.688*** |
| | (0.032) | (0.033) |
| Constant | 6.395*** | 6.318*** |
| | (0.045) | (0.021) |
| State-fixed effects | Yes | No |
| Observations | 44,397 | 44,397 |
| $R^2$ | 0.585 | 0.570 |
| Adjusted $R^2$ | 0.584 | 0.570 |
| Residual Std. Error | 29.841 (df = 44333) | 30.338 (df = 44362) |
| F Statistic | 990.029*** (df = 63; 44333) | 1,731.562*** (df = 34; 44362) |
| *Note:* | | *p**p***p<0.01 |

**Appendix Table 57** Beta-models for urban imputation out of CES 2004/05, economically reasoned including assets

| State | Economic Reasoning All + SFE | Economic Reasoning All | Economic Reasoning only Demographics + SFE | Economic Reasoning only Demographics | LASSO All + SFE | LASSO All | LASSO only Demographics + SFE | LASSO only Demographics |
|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 17.8 (2.96) | 21.6 (3.10) | 23.8 (3.38) | 21.6 (3.10) | 14.0 (2.46) | 13.2 (2.42) | 19.1 (3.04) | 18.0 (2.87) |
| **Arunachal Pradesh** | 17.0 (4.25) | 42.6 (5.56) | 19.8 (4.55) | 42.6 (5.56) | 12.2 (3.39) | 35.1 (4.81) | 14.5 (3.85) | 38.0 (5.20) |
| **Assam** | 25.9 (3.84) | 33.0 (3.82) | 29.2 (3.86) | 33.0 (3.82) | 19.6 (3.25) | 25.9 (3.47) | 21.7 (3.42) | 28.2 (3.71) |
| **Bihar** | 42.8 (3.72) | 43.8 (3.67) | 46.3 (3.62) | 43.8 (3.67) | 37.3 (3.53) | 33.7 (3.39) | 39.8 (3.68) | 36.1 (3.51) |
| **Chhattisgarh** | 38.1 (5.50) | 27.3 (4.98) | 45.2 (6.03) | 27.3 (4.98) | 29.9 (5.03) | 18.7 (4.27) | 36.5 (5.71) | 23.0 (4.68) |
| **Delhi** | 8.7 (8.79) | 21.8 (14.00) | 12.0 (10.51) | 21.8 (14.00) | 0.9 (2.06) | 2.3 (4.15) | 9.7 (9.79) | 17.8 (13.23) |
| **Gujrat** | 27.2 (4.23) | 42.2 (4.66) | 33.0 (4.44) | 42.2 (4.66) | 20.0 (3.57) | 27.3 (4.04) | 26.1 (4.16) | 34.6 (4.46) |
| **Haryana** | 11.8 (2.92) | 40.3 (4.61) | 16.4 (3.47) | 40.3 (4.61) | 7.7 (2.17) | 19.3 (3.05) | 12.5 (2.98) | 34.5 (4.35) |
| **Himachal Pradesh** | 15.1 (3.89) | 33.5 (5.20) | 19.7 (4.51) | 33.5 (5.20) | 8.9 (2.62) | 19.4 (4.00) | 13.9 (3.60) | 29.0 (5.13) |
| **Jammu & Kashmir** | 17.4 (4.22) | 38.6 (5.02) | 20.7 (4.88) | 38.6 (5.02) | 12.6 (3.32) | 25.7 (3.79) | 17.0 (4.34) | 32.9 (4.76) |
| **Jharkhand** | 38.7 (4.86) | 32.4 (4.39) | 43.8 (4.86) | 32.4 (4.39) | 32.5 (4.65) | 24.7 (3.92) | 36.0 (4.80) | 27.0 (4.10) |
| **Karnataka** | 22.1 (3.73) | 21.4 (3.45) | 28.0 (4.14) | 21.4 (3.45) | 17.1 (3.13) | 13.1 (2.63) | 22.2 (3.71) | 17.3 (3.15) |
| **Kerala** | 9.6 (2.38) | 33.2 (4.52) | 13.5 (2.94) | 33.2 (4.52) | 5.8 (1.69) | 16.7 (3.17) | 9.6 (2.35) | 26.3 (4.26) |
| **Madhya Pradesh** | 37.2 (3.40) | 29.9 (3.02) | 42.6 (3.39) | 29.9 (3.02) | 28.0 (2.97) | 19.3 (2.40) | 33.9 (3.22) | 23.2 (2.67) |
| **Maharashtra** | 31.8 (3.24) | 31.4 (3.06) | 37.2 (3.24) | 31.4 (3.06) | 24.4 (2.61) | 21.0 (2.47) | 30.8 (3.31) | 25.9 (2.86) |
| **Manipur** | 34.5 (6.04) | 39.8 (6.15) | 39.9 (6.62) | 39.8 (6.15) | 26.8 (5.53) | 31.2 (5.40) | 33.6 (6.53) | 37.2 (6.12) |
| **Meghalaya** | 17.8 (5.36) | 40.9 (7.27) | 20.5 (5.95) | 40.9 (7.27) | 9.8 (3.81) | 29.7 (6.68) | 11.8 (4.36) | 34.0 (7.30) |
| **Mizoram** | 27.2 (6.74) | 51.9 (7.02) | 30.1 (7.36) | 51.9 (7.02) | 19.7 (5.70) | 43.6 (6.70) | 23.8 (6.60) | 50.2 (7.15) |
| **Nagaland** | 11.6 (4.31) | 45.8 (6.72) | 12.9 (4.60) | 45.8 (6.72) | 8.0 (3.54) | 36.2 (6.15) | 9.0 (3.88) | 40.5 (6.70) |
| **Orissa** | 43.4 (3.78) | 25.4 (3.11) | 49.4 (3.87) | 25.4 (3.11) | 37.9 (3.68) | 19.2 (2.73) | 42.5 (3.90) | 21.7 (3.06) |
| **Punjab** | 11.1 (2.60) | 39.6 (4.40) | 16.2 (3.12) | 39.6 (4.40) | 5.9 (1.71) | 18.8 (2.78) | 12.1 (2.63) | 36.5 (4.06) |
| **Rajasthan** | 25.3 (3.11) | 42.2 (3.69) | 29.1 (3.36) | 42.2 (3.69) | 18.0 (2.50) | 28.0 (2.96) | 23.0 (3.11) | 36.0 (3.42) |
| **Sikkim** | 19.0 (6.93) | 23.9 (7.74) | 22.2 (7.74) | 23.9 (7.74) | 15.9 (6.41) | 21.1 (7.49) | 19.3 (7.01) | 22.3 (7.54) |
| **Tamil Nadu** | 17.5 (2.81) | 21.4 (2.95) | 24.1 (3.21) | 21.4 (2.95) | 12.1 (2.37) | 10.9 (2.15) | 18.2 (2.88) | 16.5 (2.78) |
| **Tripura** | 38.5 (9.41) | 30.9 (8.11) | 45.8 (9.92) | 30.9 (8.11) | 30.6 (8.52) | 21.3 (6.94) | 35.0 (9.05) | 25.0 (7.70) |
| **Uttar Pradesh** | 32.0 (2.51) | 42.6 (2.57) | 36.0 (2.55) | 42.6 (2.57) | 26.5 (2.23) | 30.3 (2.28) | 30.0 (2.45) | 34.5 (2.53) |
| **Uttaranchal** | 20.7 (5.00) | 32.5 (5.74) | 26.2 (5.47) | 32.5 (5.74) | 14.1 (3.97) | 19.2 (4.53) | 19.5 (4.91) | 26.0 (5.43) |
| **West Bengal** | 27.4 (3.95) | 33.4 (4.16) | 31.4 (4.41) | 33.4 (4.16) | 21.5 (3.59) | 25.0 (3.75) | 23.8 (3.87) | 27.3 (3.86) |

**Appendix Table 58** State-level estimates of rural poverty, based on imputations out of CES 2004/05 into CES 2011/12 Type 1. Poverty lines are the 2004/05 MRP poverty lines. SFE stands for the inclusion of state-fixed effects. The Tendulkar-corresponding poverty lines for the EUS measure are used to determine poverty status. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

| State | Economic Reasoning All + SFE | Economic Reasoning All | Economic Reasoning only Demographics + SFE | Economic Reasoning only Demographics | LASSO All + SFE | LASSO All | LASSO only Demographics + SFE | LASSO only Demographics |
|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | 6.5 (1.45) | 6.5 (1.35) | 8.5 (1.96) | 8.7 (1.84) | 7.3 (1.49) | 7.3 (1.43) | 8.8 (2.02) | 8.7 (1.86) |
| **Arunachal Pradesh** | 11.8 (4.14) | 5.5 (2.19) | 14.9 (4.89) | 7.5 (2.68) | 13.7 (4.45) | 7.2 (2.60) | 16.0 (5.05) | 7.9 (2.72) |
| **Assam** | 9.3 (2.85) | 8.6 (2.61) | 10.7 (3.23) | 9.3 (2.77) | 10.2 (3.01) | 9.0 (2.75) | 10.6 (3.16) | 8.9 (2.66) |
| **Bihar** | 26.6 (4.16) | 19.2 (3.15) | 28.2 (4.54) | 20.3 (3.44) | 28.1 (4.29) | 21.0 (3.48) | 28.0 (4.46) | 20.4 (3.46) |
| **Chhattisgarh** | 13.7 (3.92) | 12.4 (3.59) | 17.2 (4.84) | 15.4 (4.10) | 16.2 (4.14) | 14.8 (3.72) | 17.3 (4.73) | 15.7 (4.19) |
| **Delhi** | 3.0 (2.54) | 5.2 (3.15) | 6.9 (4.30) | 13.4 (5.76) | 3.9 (2.88) | 6.4 (3.47) | 6.9 (4.23) | 13.9 (5.91) |
| **Gujrat** | 10.8 (2.60) | 15.1 (2.85) | 13.1 (3.06) | 18.5 (3.37) | 11.7 (2.73) | 15.9 (2.87) | 13.6 (3.06) | 19.3 (3.47) |
| **Haryana** | 3.8 (1.33) | 5.7 (1.61) | 7.4 (2.11) | 11.9 (2.54) | 4.5 (1.44) | 6.9 (1.77) | 7.1 (2.14) | 11.7 (2.54) |
| **Himachal Pradesh** | 3.0 (1.94) | 5.3 (2.31) | 3.7 (2.26) | 7.6 (2.96) | 2.8 (1.77) | 5.4 (2.35) | 3.7 (2.22) | 7.6 (3.02) |
| **Jammu & Kashmir** | 6.9 (2.69) | 9.1 (2.51) | 10.6 (3.98) | 14.2 (3.61) | 7.0 (2.69) | 8.7 (2.36) | 11.0 (4.11) | 13.7 (3.41) |
| **Jharkhand** | 12.4 (3.51) | 14.4 (3.53) | 13.3 (3.72) | 15.5 (3.77) | 13.4 (3.63) | 15.5 (3.66) | 13.0 (3.63) | 15.0 (3.63) |
| **Karnataka** | 14.3 (2.53) | 11.6 (1.93) | 16.4 (2.91) | 13.1 (2.28) | 14.5 (2.34) | 11.9 (1.91) | 16.6 (2.91) | 13.5 (2.39) |
| **Kerala** | 5.1 (1.61) | 9.8 (2.25) | 6.8 (2.05) | 12.5 (2.57) | 5.4 (1.63) | 9.4 (2.10) | 6.8 (1.96) | 12.5 (2.62) |
| **Madhya Pradesh** | 12.4 (2.02) | 10.7 (1.78) | 16.8 (2.53) | 14.6 (2.24) | 14.2 (2.09) | 12.6 (1.87) | 16.8 (2.57) | 14.8 (2.22) |
| **Maharashtra** | 12.0 (2.20) | 10.8 (2.03) | 16.8 (3.00) | 14.7 (2.62) | 13.3 (2.24) | 12.0 (2.18) | 17.1 (3.03) | 15.4 (2.86) |
| **Manipur** | 27.9 (6.89) | 14.5 (4.05) | 31.3 (7.93) | 15.7 (4.49) | 26.9 (6.08) | 14.4 (4.05) | 30.0 (7.15) | 15.3 (4.56) |
| **Meghalaya** | 10.5 (4.54) | 13.1 (4.60) | 13.1 (5.56) | 16.5 (5.76) | 10.0 (4.13) | 12.2 (4.11) | 13.5 (5.40) | 17.7 (5.82) |
| **Mizoram** | 4.3 (2.27) | 6.1 (2.65) | 7.9 (3.50) | 10.7 (4.00) | 4.2 (2.06) | 6.7 (2.56) | 7.8 (3.45) | 12.9 (4.69) |
| **Nagaland** | 4.4 (2.57) | 8.7 (3.50) | 5.2 (2.96) | 10.2 (4.03) | 5.1 (2.78) | 8.9 (3.52) | 5.7 (3.17) | 11.3 (4.21) |
| **Orissa** | 13.7 (3.47) | 8.8 (2.72) | 16.6 (3.93) | 10.1 (2.91) | 15.8 (3.77) | 10.0 (2.86) | 16.5 (3.99) | 10.2 (2.99) |
| **Punjab** | 4.2 (1.22) | 6.3 (1.43) | 8.3 (1.96) | 13.5 (2.58) | 5.1 (1.34) | 7.7 (1.56) | 8.0 (1.92) | 13.2 (2.51) |
| **Rajasthan** | 8.9 (1.93) | 10.9 (2.02) | 15.1 (3.37) | 19.7 (3.51) | 9.7 (2.01) | 12.2 (2.19) | 15.4 (3.32) | 19.8 (3.66) |
| **Sikkim** | 6.1 (5.16) | 5.3 (4.33) | 9.4 (7.08) | 8.4 (6.08) | 7.3 (6.16) | 5.9 (4.59) | 10.5 (7.66) | 8.1 (5.78) |
| **Tamil Nadu** | 6.4 (1.39) | 7.0 (1.33) | 7.9 (1.63) | 8.4 (1.61) | 7.2 (1.44) | 7.2 (1.34) | 8.0 (1.68) | 8.1 (1.57) |
| **Tripura** | 15.1 (5.76) | 10.3 (4.21) | 16.8 (6.03) | 11.1 (4.32) | 16.6 (5.85) | 11.1 (4.36) | 16.5 (6.32) | 10.3 (4.34) |
| **Uttar Pradesh** | 18.5 (1.98) | 17.8 (1.80) | 22.5 (2.42) | 21.8 (2.14) | 21.1 (2.12) | 20.6 (1.98) | 22.7 (2.36) | 22.1 (2.21) |
| **Uttaranchal** | 11.8 (4.14) | 12.1 (4.01) | 15.2 (5.03) | 16.2 (4.84) | 12.5 (4.28) | 13.0 (4.08) | 15.2 (5.00) | 16.0 (4.72) |
| **West Bengal** | 11.6 (2.37) | 12.0 (2.12) | 12.9 (2.59) | 12.8 (2.34) | 13.7 (2.56) | 13.6 (2.33) | 13.0 (2.67) | 12.6 (2.40) |

**Appendix Table 59** State-level estimates of urban poverty, based on imputations out of CES 2004/05 into CES 2011/12 Type 1. Poverty lines are the 2004/05 MRP poverty lines. SFE stands for the inclusion of state-fixed effects. The Tendulkar-corresponding poverty lines for the EUS measure are used to determine poverty status. The imputation takes place at the household level and relies on 1000 rounds of simulation using the ELL method, poverty rates are computed using population-weights. Standard errors are given in parentheses.

**Beta-models EUS-HCES 22/23**

**EUS Rural 2011/12 - Lasso excl. wage/ labour**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE | |
| | (1) | (2) |
| HH Type: Self-employed in Non-Agriculture | 0.041*** | 0.036*** |
| | (0.005) | (0.005) |
| HH Type: Regular Wage | 0.112*** | 0.147*** |
| | (0.006) | (0.007) |
| HH Type: Casual labour in Agriculture | -0.117*** | -0.115*** |
| | (0.005) | (0.005) |
| HH Type: Casual labour in Non-Agriculture | -0.073*** | -0.054*** |
| | (0.005) | (0.006) |
| Religion: Hindu | -0.031*** | -0.047*** |
| | (0.005) | (0.005) |
| Religion: Sikhism | 0.153*** | 0.487*** |
| | (0.019) | (0.013) |
| Religion: Jainism | 0.220*** | 0.226*** |
| | (0.051) | (0.055) |
| Scheduled Tribes | -0.231*** | -0.245*** |
| | (0.006) | (0.006) |
| Scheduled Castes | -0.106*** | -0.110*** |
| | (0.005) | (0.005) |
| Other backward classes | -0.060*** | -0.058*** |
| | (0.004) | (0.004) |
| Age head of household | -0.001*** | -0.001*** |
| | (0.0002) | (0.0002) |
| Children's generation has highest education | 0.019*** | 0.001 |
| | (0.004) | (0.004) |
| Non-relatives/ servants present | 0.175*** | 0.180*** |
| | (0.031) | (0.034) |
| Education: Graduate+ present | 0.220*** | 0.248*** |
| | (0.005) | (0.006) |
| Share education middle school+ | 0.174*** | 0.219*** |
| | (0.008) | (0.009) |

| | | |
|---|---|---|
| HH size: 1 | 0.695*** | 0.772*** |
| | (0.016) | (0.017) |
| HH size: 2 | 0.397*** | 0.429*** |
| | (0.009) | (0.010) |
| HH size: 3 | 0.336*** | 0.356*** |
| | (0.006) | (0.007) |
| HH size: 4 | 0.225*** | 0.248*** |
| | (0.005) | (0.005) |
| HH size: 5 | 0.118*** | 0.129*** |
| | (0.004) | (0.005) |
| Share <14 | -0.160*** | -0.180*** |
| | (0.010) | (0.011) |
| Share 34-49 | 0.031*** | 0.021** |
| | (0.009) | (0.010) |
| Share 25-60 | 0.089*** | 0.141*** |
| | (0.014) | (0.015) |
| Share literate, formally educated | 0.165*** | 0.178*** |
| | (0.007) | (0.007) |
| Log land possessed (m2) | 0.021*** | 0.016*** |
| | (0.001) | (0.001) |
| Share married children | 0.152*** | 0.175*** |
| | (0.010) | (0.011) |
| Share siblings/other | -0.124*** | -0.030 |
| | (0.025) | (0.027) |
| share_siblings_other | -0.060*** | -0.056*** |
| | (0.016) | (0.017) |
| Constant | 6.754*** | 6.611*** |
| | (0.021) | (0.015) |
| State-fixed effects | Yes | No |
| Observations | 58,773 | 58,773 |
| $R^2$ | 0.449 | 0.355 |
| Adjusted $R^2$ | 0.448 | 0.354 |
| Residual Std. Error | 41.998 (df = 58716) | 45.433 (df = 58744) |
| F Statistic | 854.134*** (df = 56; 58716) | 1,153.545*** (df = 28; 58744) |
| *Note:* | | *p **p ***p<0.01 |

**Appendix Table 60** Beta-Model for rural imputation out of EUS 2011/12 into HCES 2022/23

**EUS Urban 2011/12 - Lasso excl. wage/ labour**

| | *Dependent variable:* | |
|---|---|---|
| | Log MPCE | |
| | (1) | (2) |
| HH Type: Self-employed | -0.046*** | -0.070*** |
| | (0.005) | (0.005) |
| HH Type: Regular wage | -0.238*** | -0.261*** |
| | (0.008) | (0.008) |
| Religion: Islam | -0.050*** | -0.050*** |
| | (0.007) | (0.007) |
| Religion: Christianity | 0.098*** | 0.135*** |
| | (0.016) | (0.015) |
| Religion: Sikhism | 0.128*** | 0.212*** |
| | (0.020) | (0.019) |
| Religion: Buddhism | -0.137*** | -0.015 |
| | (0.026) | (0.026) |
| Religion: Zoroastrianism | 0.546*** | 0.641*** |
| | (0.189) | (0.197) |
| Scheduled Tribes | -0.203*** | -0.229*** |
| | (0.013) | (0.013) |
| Scheduled Castes | -0.202*** | -0.210*** |
| | (0.007) | (0.008) |
| Other backward classes | -0.127*** | -0.135*** |
| | (0.005) | (0.005) |
| Female has highest education | 0.080*** | 0.086*** |
| | (0.005) | (0.005) |
| Children's generation has highest education | 0.094*** | 0.089*** |
| | (0.005) | (0.005) |
| Grandchildren's generation has highest education | -0.042*** | -0.054*** |
| | (0.014) | (0.014) |
| Non-relatives/ servants present | 0.443*** | 0.432*** |
| | (0.025) | (0.026) |
| Four generations present | 0.098*** | 0.105*** |
| | (0.023) | (0.024) |
| Graduate+ education present | 0.375*** | 0.376*** |
| | (0.006) | (0.006) |

| | | |
|---|---|---|
| Share education middle school+ | 0.093*** | 0.115*** |
| | (0.013) | (0.014) |
| Middle school+ education present | -0.048*** | -0.047*** |
| | (0.008) | (0.009) |
| HH size: 1 | 0.547*** | 0.555*** |
| | (0.019) | (0.020) |
| HH size: 2 | 0.384*** | 0.381*** |
| | (0.014) | (0.015) |
| HH size: 3 | 0.357*** | 0.368*** |
| | (0.009) | (0.009) |
| HH size: 4 | 0.273*** | 0.302*** |
| | (0.007) | (0.007) |
| HH size: 5 | 0.150*** | 0.169*** |
| | (0.007) | (0.007) |
| Dependency share | -0.068*** | -0.095*** |
| | (0.026) | (0.027) |
| Share <14 | -0.195*** | -0.169*** |
| | (0.028) | (0.029) |
| Share 34-49 | 0.051*** | 0.044*** |
| | (0.012) | (0.012) |
| Share female 14-25 | -0.089*** | -0.093*** |
| | (0.017) | (0.018) |
| Share literate, formally educated | 0.373*** | 0.403*** |
| | (0.012) | (0.012) |
| Share married | 0.100*** | 0.113*** |
| | (0.014) | (0.014) |
| Share married children | -0.281*** | -0.324*** |
| | (0.045) | (0.047) |
| Share unmarried children | -0.185*** | -0.235*** |
| | (0.020) | (0.020) |
| Share siblings/ other | -0.137*** | -0.152*** |
| | (0.024) | (0.025) |
| Constant | 7.080*** | 7.054*** |
| | (0.032) | (0.020) |
| State-fixed effects | Yes | No |
| Observations | 40,398 | 40,398 |
| $R^2$ | 0.512 | 0.467 |
| Adjusted $R^2$ | 0.511 | 0.466 |

| | | |
|---|---|---|
| Residual Std. Error | 38.707 (df = 40337) | 40.444 (df = 40365) |
| F Statistic | 705.061*** (df = 60; 40337) | 1,104.095*** (df = 32; 40365) |

*Note:* *p**p***p<0.01

**Appendix Table 61** Beta-Model for urban imputation out of EUS 2011/12 into HCES 2022/23