

Debosree Banerjee

POVERTY AND DEPRIVATION IN INDIA

DIVERGENCE BETWEEN CONSUMPTION AND ASSET BASED ESTIMATES



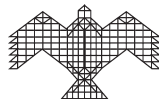
NATIONAL INSTITUTE OF ADVANCED STUDIES
Bengaluru, India

NIAS Working Paper: NIAS/SSc/IHD/U/WP/10/2021

POVERTY AND DEPRIVATION IN INDIA

Divergence between consumption and
asset based estimates

Debosree Banerjee



Inequality and Human Development Programme
NATIONAL INSTITUTE OF ADVANCED STUDIES
Indian Institute of Science Campus, Bengaluru 560012, India

© National Institute of Advanced Studies, 2021

Published by

National Institute of Advanced Studies

Indian Institute of Science Campus

Bengaluru - 560 012

Tel: 2218 5000, Fax: 2218 5028

E-mail: publications@nias.res.in

NIAS Working Paper: NIAS/SSc/IHD/U/WP/10/2021

Cover photo: Arjun Swaminathan

Typeset & Printed by

Aditi Enterprises

aditiprints@yahoo.com

POVERTY AND DEPRIVATION IN INDIA

Divergence between consumption and asset based estimates

Abstract

Consumption expenditure has been widely used in India to estimate poverty. It has recently been argued that these estimates have several weaknesses and an asset based index is a better indicator of deprivation. Building on the asset based indicator developed earlier, this paper estimates deprivation in India. It looks at two specific aspects of deprivation: (i) region and time-wise variations in deprivation in terms of absolute and relative deprivation, (ii) difference between deprivation and consumption-based poverty. The results suggest that there is a difference in the regional ranking of poverty depending on whether to consider the immediate consumption expenditure or the longer term picture of vulnerability provided by the asset based indicator of deprivation.

Introduction

Poverty in India has been widely measured in terms of the headcount below a poverty line based on consumption expenditure. The method has been the subject of considerable debate since Dandekar and Rath, 1971 first defined the poverty line in terms of the expenditure levels that ensured standard per capita calorie consumption per day. Much of this debate has been on the quality of the estimates of the poverty

line, without challenging the use of consumption expenditure as the basis for estimating poverty. This has ensured that a question that has found mention in the larger theoretical literature on poverty does not have a prominent place in the Indian debate: How would our assessment of the extent of poverty in India, and its regional variation, change if we used a measure based on assets instead of consumption?

This paper seeks to address these questions by first summarising the theoretical arguments that have been made against consumption-based estimates of poverty and in particular the headcount ratio in these estimates; arguments that have contributed to the development of an asset-based measure of deprivation. It then measures poverty across states in India using this asset based index of the distance from absolute deprivation. This allows the next section of the paper to identify specific differences that emerge between consumption based estimates of the proportion below the poverty line and the estimates of the distance from absolute deprivation. The paper concludes by pointing to some aspects of the relationship between consumption and deprivation in India.

Consumption and assets as routes to estimating poverty

The dominant approaches to poverty estimation in India are based on targeting consumption insufficiencies. This was particularly important in the 1960s when India was still facing near-famine conditions. The need to avoid starvation was also a primary concern of Dandekar and Rath when, in their seminal work in 1971, they designed a methodology that defined poverty in terms of consumption expenditure levels that would ensure consumption of a minimum number

of calories. Dandekar and Rath(1971) defined poverty lines separately for rural and urban areas based on minimum calorie requirements. Their calculations generated poverty lines to be Rs. 170 per capita per annum for rural households and Rs. 271 per capita per annum for urban households which comes down after some rounding off to Rs. 15 per capita per month for rural households and Rs. 22.5 per capita per month for urban households at 1960-61 prices. They recognised that the cost of the minimum level of calories varies not only across rural and urban areas but also across states. However, they assumed that despite differences in the cost of living across states and between rural and urban areas, the minimum calorie requirement remains the same, which was 2,250 Kcal per capita per day. While the need to avoid starvation may have become less of a priority over the years, the focus on consumption as the basis for estimating poverty has continued. There have been several debates on the poverty line and the headcount below it since then, but the line itself continues to be estimated in terms of consumption. For example, the Y K Alagh committee in 1977 fixed poverty lines at 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day in urban areas, which required a per capita income of Rs. 49.09 and Rs.56.64 per month, respectively. The

Lakdawala committee in 1993 did not redefine the poverty line and retained the separate rural and urban poverty lines recommended by the Alagh Committee, but it disaggregated the poverty line at the state level. This was done using the consumer price index for the Industrial workers in urban areas and Consumer Price Index for the agricultural labour in rural areas for inflation adjustment. The Tendulkar committee in 2009 moved from basing the poverty lines on calorie norms to goods and services. It also used mixed reference period-based estimates, as opposed to the uniform reference period. Previous committees took social goods like health and education were to be provided by the government, whereas NSSO's consumption expenditure survey showed significant private investments were made by households in health and education, the Tendulkar committee, therefore, decided to include private expenditure on health and education in poverty estimation. Poverty lines were then estimated at Rs. 816 per capita per month for rural areas and Rs. 1,000 per capita per month for urban areas. The Rangarajan Committee in 2014 separated consumption baskets for rural and urban areas, which included food (calorie, protein & fat) and non-food items like clothing, education, health, housing, and transport and raised the daily per capita expenditure to Rs 47 for urban areas

and Rs 32 for rural areas from Rs 32 and Rs 26. At the national level monthly per capita consumption was fixed at an expenditure of Rs. 972 in rural areas and Rs. 1407 in urban areas.

The resilience of consumption data as the basis for estimating poverty has been strengthened by the weaknesses of income based estimates of poverty. Consumption-based poverty estimates are often preferred as they avoid some of the more serious measurement errors of over income-based estimates (Meyer & Sullivan, 2003; Cutler & Katz, 1992; Mayer & Jencks, 1993; Jencks & Mayer, 1996). Measurement errors are of particular concern in countries where a significant number of people are employed in the informal sector, and their income accounting, in most cases, does not provide reliable information on their true economic position. Consumption thus provides a more effective basis than income for estimating the severity of poverty at any given point in time.

When seen over the longer term, though, questions begin to arise about the use of consumption to estimate poverty. There is the concern that consumption at a particular point of time would include borrowing and hence not reflect the actual economic status of a household. It could be argued that the ability to borrow is itself a reflection of the longer-term economic health of

the household. Following the life-cycle hypothesis of (Modigliani & Brumberg, 1954), one can expect individuals to smooth their consumption stream over their lifetime by borrowing when their income is low and saving when their income is high i.e., even though their income stream may not be smooth. This argument, along with the implications of the permanent income hypothesis of (Friedman, 1957), would suggest that consumption at a point of time is not completely unconnected with the longer-term picture. But it must be remembered that these hypotheses are a reflection of consumer expectations. They work best when consumers have perfect knowledge about the future. As mentioned by (Atkinson, 1998) by taking consumption as our indicator of poverty, we implicitly believe households form expectations about future income and borrowing capacity. Imperfect knowledge of the future could result in households, restraining their consumption to very low levels or keeping it at unsustainably high levels. Consumers are likely to find it more difficult to plan their expenditure at times of unexpected economic adversity, such as that brought about by the Covid 19 pandemic. Furthermore, if borrowing capacities are limited (which is often the case with poor) consumption smoothing, as implied by the life cycle hypothesis, might be impeded intertemporally, if

a household is liquidity constrained (Deaton & Muellbauer, 1980). And even if the poor do manage to borrow, it could come at a huge social cost. The indebtedness of the poor to ensure a basic minimum level of consumption could involve forms of extreme social exploitation. Consumption levels propped up by such borrowing would be a misleading indicator of the economic conditions of the household, and would be better seen as a transfer of a person's poverty from the economic to the social domain.

In general, consumption expenditure is not the best indicator of vulnerability as it is concerned with current wellbeing rather than the possibility of poverty in a future period (Corbacho, Garcia-Escribano, & Inchauste, 2007). Consumption expenditure does not capture the household's ability to deal with uncertain conditions and to ride out shock effects. Households with similar consumption might experience different vulnerabilities depending on the availability of appropriate coping strategies. Some might belong to more supportive communities and have access to community kitchens while others may not. The extent of effective state support would affect the ability of the poor to cope with poverty. A household with lower levels of consumption expenditure but with effective access to food grain

in the public distribution system would be less vulnerable than a household with similar levels of consumption expenditure but without similar access to PDS. Households with access to appropriate coping strategies would be less vulnerable to uncertain conditions than otherwise similar households without a fall-back option.

The incidence of chronic poverty is thus not easily identifiable by consumption-based poverty estimates and is often not sufficient to generate effective interventions to address poor economic conditions over the long term (Carter & May, 2001) (Naschold & Barrett, 2011)). It is also not adequate to capture the extent of deprivation. While calorie insufficiency is an extremely useful indicator of nutrition deprivation among the poor, it is not the only indicator of deprivation. Even within the realm of nutrition, it has been pointed out that the consumption of vitamins, minerals and fat are equally important but have been ignored in economic studies (Deaton & Drèze, 2009) And there are a number of other factors that contribute to deprivation, including the lack of access to even temporary and basic housing.

The need for a broader understanding of poverty has contributed to the growing literature discussing multi-dimensional estimates of poverty ((Alkire & Foster,

2011); (Alkire & Seth, 2013);(Duclos, Sahn, & Younger, 2006)(Alkire & Seth, 2015); (Alkire, Roche, Ballon, Foster, Santos, & Seth, 2015) (Bourguignon & Chakravarty, 2019)). The search for comprehensiveness, however, brings with it the problem of the weight to be given to each dimension of poverty. This process typically involves a substantial role for value judgment. Depending on the purpose and nature of poverty assessments, the choice of the weights to be attached to each of the chosen dimensions can cause the poverty estimates to vary quite noticeably (Decancq, Fleurbaey, & Schokkaert, 2015).

The search for a more objective alternative has led several studies (Brandolini, Magri, & Smeeding, 2010); (Carter & Barrett, 2006); (Carter & May, 2001)) to argue in favour of asset-based indicators of poverty. Since asset-based indicators are based on the accumulated stock of assets over time, it provides better insights into dynamic and persistent poverty (Carter & Barrett, 2006); (Barrett & Carter, 2013); (Antman & McKenzie, 2007); (Naschold & Barrett, 2011); (Sahn & Stifel., 2000)). Understanding the persistence of asset poverty is important because long terms inability to save or gather assets would further restrict the opportunities to access several important tangible and

intangible endowments such as health, education and food which are crucial to overcoming the poverty trap. Also, since assets are fundamental to smooth consumption when income is volatile, if there is a sudden income shock resulting in a drop in consumption, households would have the option of selling some of their accumulated assets or simply offering these assets as collateral to sustain their consumption. Asset accumulation via precautionary savings is an important means for households to self-insure against income decline and is a direct determinant of permanent incomes ((Attanasio, Hurst, & Pistaferri, 2015), (Richard, Pistaferri, & Saporta-Eksten, 2019), (Low, Meghir, & Pistaferri, 2010)). In India, (Dutta & Kumar, 2013) developed an asset-based index of poverty to explain chronic and transient components of poverty and vulnerability to poverty between 1992 and 2005.

Asset based measures of poverty are, however, not without their weaknesses. A criticism that is often raised against asset-based indicators is that it captures only the economic dimension of poverty while ignoring other dimensions of the phenomenon, including health and education. A summary of all the assets in a household could also include those assets that have a high cost of maintenance even at times of great

distress to the poor. A poor household could rear sheep as a means of livelihood. But in years of extreme drought, the rearing of the sheep the household owns could involve costs that severely restricts the ability of a poor household to spend on other items. A summation of the value of all the assets of a household may then not always reflect the extent and nature of deprivation. It is typically too severe a phenomenon to be understood in terms of its economic dimension alone. The comprehensiveness of the multi-dimensional approach can be particularly useful when exploring the pain of deprivation. At the same time, the problem of subjectively determined weights remains. There is thus a trade-off between the comprehensiveness of multi-dimensional estimates of poverty and the relative objectivity provided by asset-based measures.

One response to this trade-off would be to tap the advantages of an asset-based approach while retaining a focus on deprivation. If we include all assets, we would be successfully explaining asset ownership in India but not deprivation that is basic need based. An index seeking to capture deprivation would be sensitive to the poor would have access to but would only be owned after other aspects of extreme deprivation are removed. These are assets that a household would typically

only invest in after meeting the basic needs of food, clothing and shelter. It is assumed that a poor household facing a health crisis in the midst of a severe deprivation in the availability of health facilities, is unlikely to use its limited resources to buy household durable items like a television. Household durables that the poor can access can then be taken as an indicator of the distance of the household from absolute deprivation. A focus on deprivation and the inequalities of households closer to absolute deprivation, the assets are chosen do not need to cover the assets of the very rich. The assets that would be of greater relevance would range from those of the poor to those of households closer to middle incomes.

It is also important to distinguish between absolute and relative deprivation. The concept of deprivation has generally been dealt with by researchers in relative terms. Relative deprivation as proposed by (Runciman, 1966) is defined as the difference between personal wellbeing and the wellbeing of others in society. (Yitzhaki, 1979) provided a quantification of Runciman's concept of relative deprivation by expressing it as the sum of all the income gaps in the society normalised by population size. Construction of Yitzhaki's relative deprivation index followed two steps. He first derived individual profiles of

deprivations that are felt by everyone in the society and in the second step he estimated the average of these individual indices to aggregate into overall deprivation. Yitzhaki also showed that such an aggregation over society would generate absolute Gini coefficients as a measure of aggregate relative deprivation. A number of studies such as, (Chakravarty & Chakraborty, 1984); (Berrebi & Silber., 1985); (Paul, 1991); (Ebert & Moyes, 2000), after this, derived deprivation following similar approaches.

The focus on relative deprivation is likely to have been influenced by the difficulties in deciding some predefined level of absolute deprivation. At what point can we decide that a household faces absolute deprivation? And if we arrive at such a point, we still have all the difficulties of a cut-off point. Do those just above that level face noticeably different conditions of deprivation than those just below that point? While any cut-off for absolute deprivation is bound to be open to debate, there are some points that are more persuasive than others. It is unlikely that anyone would challenge the view that those facing starvation are in the midst of absolute deprivation. It could also be argued, drawing from Amartya Sen's conception of development as freedom (Sen, 1999), that a household faces absolute deprivation when it does

not have the freedom to buy even a single durable asset. Such a condition would indirectly take into account the expenditure needed for aspects like health or education. A household would face absolute deprivation if its expenditure on health accounts for such a significant portion of its income that it does not have the resources to buy basic durable goods, even if its income *per se* is not the lowest in the community. Another household may be willing to accept absolute deprivation in the current period so as to educate its children for a better future. In other words, households that do not have a single basic durable asset in them should be classified as facing absolute deprivation.

The approach in this paper to the measure of the distance from absolute deprivation is thus based on meeting two conditions. First, it would only include durable household assets. That is while the measure itself is of a set of assets; the choice of assets in the measure would be such that they would only be bought after the other dimensions of extreme deprivation are addressed to some minimal degree. While the measure does not directly take into account all aspects of multidimensional poverty, its choice of assets can be such that it is sensitive to the non-economic aspects of deprivation. The assets would be those that can reasonably be

expected to be bought only after severe deprivation in non-economic dimensions like health have been overcome. Second, the measure would provide a prominent place for assets that the poor would have access to. This would help recognize the differences among the poor; the differences between, say, those facing absolute deprivation and those who are marginally, but nevertheless, relatively better off.

One such index has been developed in (Pani, 2020). It takes households that have none of a pre-selected list of assets to be facing absolute deprivation, and then uses the assets owned by the other households as an index of their distance from absolute deprivation. The index of the distance from absolute deprivation (IDFAD) is given by the following:

$$IDFAD_j = \sum_{i=1}^N nisi$$

where,

IDFAD=distance from deprivation of the household j

n=number of assets in the household

S=normalised value of asset i

The measure goes on to define those households without any of the assets as facing absolute deprivation. The sum of the normalized value of the assets possessed by a household then

gives us an indicator of its distance from absolute deprivation. One can, if she so desires, also define a particular distance from absolute deprivation as a poverty line and have a headcount of households below it. But if the purpose is only to compare the condition of a household vis a vis deprivation cross-sectionally and/or over time, such a poverty line need not be defined.

The underlying proposition in this paper is that for a household to break away from the conditions of absolute deprivation it needs to possess at least one of the basic durables. This could also be considered as the cut-off between absolute deprivation and marginally better or relatively lower levels of deprivation. The advantage of such an asset-based measure of deprivation is it depends on the stock of assets accumulated over a period and thus providing a better picture of sustained deprivation at various levels, unlike other flow estimates such as consumption or income, which are extremely time-variant in nature.

Estimating IDFAD in India

Using the measure outlined above, this paper attempts to estimate the extent and trends in deprivation in India at the state level based on ownership of basic household durables using data from two consecutive rounds of the Indian

Human Development Survey (IHDS). It primarily considers the fifteen household durables –(1)colour TV, (2)black and white TV,(3) refrigerator, (4)cot, (5) electric fan, (6) bicycle, (7)motorcycle, (8)mobile phone,(9)landline phone, (10) clock/watch, (11) washing machine, (12) pressure cooker, (13)sewing machine,(14) air cooler, and (15) air conditioner – for which the data is available in both IHDS rounds. The durables to be included in the analysis to differentiate the deprived of the others can be debated but, in this article, we aim at understanding deprivation based on ownership of the above fifteen durables only. At the outset, it must also be clarified that deprivation in our analysis is reflected by ownership of assets that are welfare improving. Such ownership might arise from marketed transactions as well as informal transactions and is not only based on individual households' purchasing power. We argue that in practical terms wellbeing can also be improved through informal transfers of assets.

The paper considers the households that possess none of the above objects to be facing absolute deprivation. Depending on the durables owned and their relative prices, as the value of the index increases, the level of deprivation decreases, indicating the degree of distance from absolute deprivation. The specific variables of interest to this study

are (1) the level of absolute deprivation in the state estimated by the percentage of households owning none of the durables. (2) Relative deprivation, captured by the Gini in the deprivation index. This also helps to understand the inequalities among the poor.

The analysis has been carried out separately for rural and urban India and by two rounds of IHDS implemented in 2004-05 and 2011-12. IHDS is a longitudinal, nationally representative survey conducted by the University of Maryland, USA and the National Council of Applied Economic Research (NCAER), New Delhi, India. IHDS I (2004–2005) is a nationally representative multi-topic survey of 41,554 households in 1,503 villages. IHDS II (2011–2012) re-interviewed about 85% of these households. In IHDS II, new households were also added to the survey (N = 42,152). Price information of these assets was collected from the National sample survey (NSS) 68th round consumption survey in 2011. NSS's quinquennial consumption survey collects data on household consumption expenditure on various food and non-food items which also includes a list of household

durables. These item-wise prices are then aggregated and averaged at the national level and expressed in relative terms. The most expensive item is considered at 100 and the rest are then expressed in relation to 100. The sum of the weighted value of each of these assets would generate the deprivation index as explained in (Pani, 2020)¹.

A limitation of our estimation is we could estimate only a part of the variation, explained in (Pani, 2020) in terms of whether a particular durable is owned or not. (Pani, 2020) also provides freedom to understand variation arising from ownership of the number of particular assets owned. Since IHDS provides information only on the ownership, but not on the number of each asset owned, the constructed index of deprivation, in this paper, captures variation only in terms of whether a particular asset is owned or not. It does not take into account the numbers of each asset that is owned.

Based on this index the paper first estimates the levels of absolute and relative deprivation across the state in rural and urban India in 2004 and 2011, thereby providing a picture of

1 NSSO's All-India Debt Investment Survey (AIDIS) also collects information on asset holdings at the household level. Unfortunately, we could not use these surveys as the AIDIS, 2012-13 does provide information on the household durables (though it provides information on the various farm, non-farm, and transportation assets). Previous rounds of AIDIS 2003, 1993 includes these data on household durables, since these are almost 20 years old data, we decided to look for more recent data on households' consumer durables and opted for IHDS I and II

the regional inequalities in deprivation. It then examines the changes in the level of deprivation over the two years. This picture is then compared with the one that emerges from the existing consumption-based poverty estimates. Such a comparison allows the paper to examine the specific differences in the nature of poverty measured by consumption-based headcount and asset-based distance from absolute deprivation across the rural and urban sectors in India.

Regional variations in poverty and deprivation

Before we proceed to address the two specific issues raised at the beginning, the paper first discusses some basic patterns of poverty and deprivation at the aggregate level. Table 1 presents the national picture of absolute and relative deprivation along with officially published poverty figures for rural and urban areas in 2004-2005 and 2011–2012. It can be seen that there have been considerable improvements in deprivation and poverty during the period 2004-2011 in India. In 2004, 3.5% of the household were facing absolute deprivation in India which reduced to 1.4% in 2011. Similar improvement is also observed in and relative deprivation which decreased from 0.58 to 0.50. According to the estimates of the

Planning Commission of India based on Tendulkar Method of mixed reference period (MRP) consumption the overall poverty ratio in the country was 37.2 per cent in 2004, while the proportional share of the poor in the population of India has been successfully reduced by 15.3 percentage points from 37.2 in 2004 to 21.9 per cent in 2011.

Though in absolute terms rural poverty and deprivation are more than urban poverty and deprivation, in terms of reduction in poverty and absolute deprivation, rural areas show better performance than urban areas. From 2004 to 2011 in rural areas, absolute deprivation and consumption poverty decreased by 2.48 and 16.3 percentage points. In urban areas, these reductions are by 0.94 and 11.8 percentage points respectively. However, relative deprivation, measured by the Gini in the IDFAD shows that rural deprivation reduced (0.06 points) relatively less than urban relative deprivation (0.09 points). This indicates that though aggregate improvements in rural absolute deprivation and poverty are more than those in urban areas, the same cannot be observed in inequality in overall deprivation.

The patterns observed in Table 1 in absolute, relative deprivation and poverty are likely to have substantial regional variations at the state level as well, as state economies in India function

Table1: All India level trends in poverty and deprivation.

| | Absolute deprivation (% hh) | | Relative deprivation (Gini) | | Consumption poverty | | Change in absolute deprivation | Change in relative deprivation | Change in consumption poverty |
|----------------|-----------------------------|-------------|-----------------------------|-------------|---------------------|--------------|--------------------------------|--------------------------------|-------------------------------|
| | 2004 | 2011 | 2004 | 2011 | 2004 | 2011 | | | |
| Rural | 4.32 | 1.84 | 0.58 | 0.52 | 42 | 25.7 | 2.48 | 0.06 | 16.3 |
| Urban | 1.35 | 0.41 | 0.47 | 0.37 | 25.5 | 13.7 | 0.94 | 0.09 | 11.8 |
| Combine | 3.53 | 1.39 | 0.58 | 0.50 | 37.2 | 21.92 | 2.14 | 0.08 | 15.28 |

Source: Authors' own calculation from IHDS I and II and NSSO 68th round Consumption Expenditure Survey

Note: consumption-poverty is calculated using Tendulkar Method on mixed reference period

somewhat diversely. For example, there are few states such as Maharashtra, Karnataka, Tamil Nadu etc. that are more industrialised, whereas few others like Uttar Pradesh, Bihar, Jharkhand, Orissa that are still agrarian in nature. Consequently, the economic conditions of these states and thus poverty and deprivation conditions are expected to vary significantly.

State-wise picture of poverty and deprivation

As can be seen in Table2, in 2004 and 2011, Indian states show extreme diversities in the level of absolute deprivation. Considering only the rural absolute deprivation, it can be seen in Table 2 that while Karnataka(16.49%) and Maharashtra(16.82%) show an extremely high incidence of absolute deprivation, few other states, such as Orissa and West Bengal also have faced

high absolute deprivation with around 7% and 9% households respectively. Thus there are two distinct clusters of states in 2004, first with Karnataka and Maharashtra and second with Orissa and West Bengal which suffered extreme deprivation with around 15-16% and then 7-9% absolutely deprived households. Looking at rural poverty, on the other hand, no such clusters could be identified. States in which more than 50% population lived below the poverty line in rural areas in 2004 are Bihar Chhattisgarh, Jharkhand, Madhya Pradesh and Orissa. Among these states whose only Orissa have suffered a high incidence of absolute deprivation in 2004.

In 2011, all four states, Karnataka, Maharashtra, Orissa and West Bengal reduced rural absolute deprivation to a significant extent. For example, Karnataka reduced it by 11% point to

Table2: State-wise variation in poverty and deprivation in rural areas

| State | 2004 | | | 2011 | | |
|-------------------|----------------------|----------------------|-----------|----------------------|----------------------|-------------|
| | Absolute Deprivation | Relative deprivation | Poverty | Absolute Deprivation | Relative deprivation | Poverty |
| Andhra Pradesh | 3.02 | 0.49 | 32.3 | 0.69 | 0.45 | 11 |
| Arunachal Pradesh | 0 | 0.52 | 33.6 | 2.84 | 0.49 | 38.9 |
| Assam | 1.29 | 0.49 | 36.4 | 1.16 | 0.51 | 33.9 |
| Bihar | 3.33 | 0.49 | 55.7 | 2.03 | 0.50 | 34.1 |
| Chhattisgarh | 4.53 | 0.51 | 55.1 | 2.93 | 0.55 | 44.6 |
| Goa | 0.71 | 0.31 | 28.1 | 0 | 0.25 | 6.8 |
| Gujarat | 0.64 | 0.56 | 39.1 | 1.51 | 0.49 | 21.5 |
| Haryana | 0.23 | 0.46 | 24.8 | 0 | 0.44 | 11.6 |
| Himachal Pradesh | 0.62 | 0.43 | 25 | 0.04 | 0.37 | 8.5 |
| Jammu & Kashmir | 3.35 | 0.54 | 14.1 | 0.38 | 0.42 | 11.5 |
| Jharkhand | 1.46 | 0.55 | 51.6 | 0.14 | 0.55 | 40.8 |
| Karnataka | 16.49 | 0.63 | 37.5 | 4.84 | 0.49 | 24.5 |
| Kerala | 0.38 | 0.49 | 20.2 | 0.09 | 0.36 | 9.1 |
| Madhya Pradesh | 2.89 | 0.59 | 53.6 | 2.12 | 0.56 | 35.7 |
| Maharashtra | 16.82 | 0.49 | 47.9 | 3.93 | 0.50 | 24.2 |
| Manipur | 0 | 0.50 | 39.3 | 0 | 0.26 | 38.8 |
| Meghalaya | 15.57 | 0.56 | 14 | 0 | 0.39 | 12.5 |
| Mizoram | 0 | 0.54 | 23 | 0 | 0.35 | 35.4 |
| Nagaland | 1.49 | 0.44 | 10 | 0 | 0.29 | 19.9 |
| Orissa | 7.2 | 0.54 | 60.8 | 3.02 | 0.56 | 35.7 |
| Punjab | 0.5 | 0.40 | 22.1 | 0.05 | 0.36 | 7.7 |
| Rajasthan | 0.51 | 0.58 | 35.8 | 0.14 | 0.54 | 16.1 |
| Sikkim | 0 | 0.31 | 31.8 | 0 | 0.28 | 9.9 |
| Tamil Nadu | 4.51 | 0.55 | 37.5 | 1.24 | 0.39 | 15.8 |
| Tripura | 0.96 | 0.51 | 44.5 | 0.68 | 0.42 | 16.5 |
| Uttar Pradesh | 0.2 | 0.54 | 42.7 | 0.44 | 0.54 | 30.4 |
| Uttarakhand | 2.75 | 0.51 | 35.1 | 1.79 | 0.44 | 11.6 |
| West Bengal | 9.74 | 0.58 | 38.2 | 5.46 | 0.47 | 22.5 |
| India | 4.32 | 0.58 | 42 | 1.84 | 0.52 | 25.7 |

Source: Authors' own calculation from IHDS I and II and NSSO 68th round Consumption Expenditure Survey

Note: Lower ranking implies lower absolute deprivation. A negative rural-urban ranking gap implies a relatively lower rural ranking than the relative rankings of the urban sector and vice versa. Numbers for Maharashtra need to be interpreted in with cautions as in IHDSI has much less number of households than in IHDSII in Maharashtra.

4.84% and Maharashtra reduced it by around 12.89% point to 3.93%. In the second cluster, Orissa and West Bengal could manage to reduce rural absolute deprivation to 3.02% and 5.46% with the reduction being around 4.12% and 4.28% respectively. Therefore, the reduction is more in the states which are at the worst end in 2004. Incidentally, Karnataka and Maharashtra both have performed better than Orissa and West Bengal in terms of higher economic growth in 2004 as well as in 2011. In the same years, states in which rural poverty is relatively high are Assam, Chhattisgarh, Madhya Pradesh, Jharkhand and Orissa. Once again, in 2011 also no consistent patterns can be established between consumption poverty and asset-based measure of absolute deprivation.

Table 3 reports state-wise variation in the incidence of absolute deprivation, relative deprivation and poverty headcount in urban India. It shows in 2004, the states that have faced comparatively higher incidence are Karnataka(5.37%), Maharashtra(7.24%) and Orissa(3.16%). But in 2011 while Maharashtra reduced urban absolute deprivation significantly to 0.09%, others -Karnataka (1.22%) and Orissa (2.37%)-still remain with a relatively high incidence of absolute deprivation. Comparing with poverty, it is observed that the states in which incidence of

poverty are high in 2004 (more than 30%) are Bihar, Orissa, Uttar Pradesh and Madhya Pradesh. In 2011, urban poverty is more (more than 24%) in Bihar, Chhattisgarh; Jharkhand and Uttar Pradesh. Therefore, absolute deprivation in urban India also does not seem to be linked to urban poverty in India as among the most deprived states only Orissa suffered a higher headcount ratio, in 2004 (and not in 2011).

Furthermore, compared to 2004, though absolute deprivation improved consistently across all states in 2011, the improvement is more due to a reduction in urban absolute deprivation. For example, almost 13 states reported having no(zero) urban absolute deprivation, but the same could not be observed in rural areas as only 7 states reported having no absolute deprivation in the rural areas in 2011. Consequently in a large number of states such as Kerala, Uttarakhand, Bihar, Assam, Madhya Pradesh, Punjab, Tripura, Uttar Pradesh, Gujarat, Haryana, Himachal Pradesh, and Arunachal Pradesh, in 2011, the rural-urban gap in incidence of absolute deprivation increased in 2011 relative to 2004. This can be calculated by looking at the year-wise difference in rural-urban differences. In terms of poverty, among all the major states, only Kerala shows an increase in the rural-urban poverty gap in 2011, compared to 2004. Thus, the

Table3: State-wise variation in poverty and deprivation in urban areas

| State | 2004 | | | 2011 | | |
|-------------------|----------------------|----------------------|-------------|----------------------|----------------------|-------------|
| | Absolute Deprivation | Relative deprivation | Poverty | Absolute Deprivation | Relative deprivation | Poverty |
| Andhra Pradesh | 0.22 | 0.47 | 23.4 | 0.12 | 0.39 | 5.8 |
| Arunachal Pradesh | 0 | 0.29 | 23.5 | 0 | 0.32 | 20.3 |
| Assam | 0.27 | 0.38 | 21.8 | 0 | 0.36 | 20.5 |
| Bihar | 1.94 | 0.51 | 43.7 | 0.65 | 0.48 | 31.2 |
| Chhattisgarh | 0.37 | 0.39 | 28.4 | 0.32 | 0.35 | 24.8 |
| Goa | 4.69 | 0.23 | 22.2 | 0 | 0.28 | 4.1 |
| Gujarat | 0.22 | 0.40 | 20.1 | 0.51 | 0.33 | 10.1 |
| Haryana | 0.38 | 0.30 | 22.4 | 0 | 0.27 | 10.3 |
| Himachal Pradesh | 0.32 | 0.34 | 4.6 | 0 | 0.32 | 4.3 |
| Jammu & Kashmir | 1.67 | 0.42 | 10.4 | 0 | 0.34 | 7.2 |
| Jharkhand | 0.76 | 0.43 | 23.8 | 0.28 | 0.40 | 24.8 |
| Karnataka | 5.37 | 0.47 | 25.9 | 1.22 | 0.39 | 15.3 |
| Kerala | 0.15 | 0.44 | 18.4 | 0.12 | 0.35 | 5 |
| Madhya Pradesh | 1.49 | 0.49 | 35.1 | 0.49 | 0.40 | 21 |
| Maharashtra | 7.24 | 0.40 | 25.6 | 0.09 | 0.30 | 9.1 |
| Manipur | 0 | 0.26 | 34.5 | 0 | 0.08 | 32.6 |
| Meghalaya | 0 | 0.39 | 24.7 | 0 | 0.24 | 9.3 |
| Mizoram | 0 | 0.29 | 7.9 | 0 | 0.17 | 6.4 |
| Nagaland | 0 | 0.25 | 4.3 | 0 | 0.21 | 16.5 |
| Orissa | 3.16 | 0.47 | 37.6 | 2.37 | 0.39 | 17.3 |
| Punjab | 0.19 | 0.31 | 18.7 | 0 | 0.25 | 9.2 |
| Rajasthan | 0.33 | 0.48 | 29.7 | 0.14 | 0.38 | 10.7 |
| Sikkim | 0 | 0.26 | 25.9 | 0 | 0.22 | 3.7 |
| Tamil Nadu | 2.38 | 0.48 | 19.7 | 0.85 | 0.36 | 6.5 |
| Tripura | 1.36 | 0.45 | 22.5 | 0.5 | 0.36 | 7.4 |
| Uttar Pradesh | 0.18 | 0.48 | 34.1 | 0 | 0.42 | 26.1 |
| Uttarakhand | 2.17 | 0.42 | 26.2 | 0.12 | 0.35 | 10.5 |
| West Bengal | 1.45 | 0.44 | 24.4 | 1.05 | 0.39 | 14.7 |
| India | 1.35 | 0.47 | 25.5 | 0.41 | 0.37 | 13.7 |

Source: Authors' own calculation from IHDS I and II and NSSO 68th round Consumption Expenditure Survey

Note: Lower ranking implies lower absolute deprivation. A negative rural-urban ranking gap implies a relatively lower rural ranking than the relative rankings of the urban sector and vice versa. Numbers for Maharashtra need to be interpreted in with cautions as in IHDSII has much less number of households than in IHDSI in Maharashtra.

rural-urban difference in poverty also does not show any association with that of absolute deprivation.

In 2004, as shown in Table 2, Karnataka and Maharashtra, along with the highest incidence of rural absolute deprivation have also suffered higher relative deprivation with and around 0.63 and 0.49 Gini coefficients. In 2011, relative deprivation in Karnataka reduced to 0.49 in rural areas but does not reduce much in rural areas in Maharashtra. In Urban areas, as shown in Table 3, relative deprivation in Karnataka reduced from 0.47 to 0.39 and Maharashtra shows a decreased by 0.10 points from 0.40 to 0.30 respectively in 2011. Thus, relative deprivation decreased in rural and urban areas of Karnataka and in urban Maharashtra but not in rural Maharashtra.

Table 2 and 3 generate important concerns. In none of the study years, deprivation seems to have any connection with poverty raising a more serious policy concern on inequalities among the poor. While consumption-based estimates of poverty could identify the poor as a group in India, they failed to explain the extent of poverty felt at the bottom. This is a serious policy concern that remained overlooked in India. It is even more evident from the fact that having a lower number of poor people and better economic

performance are neither necessary nor sufficient conditions in India for lower deprivation. States like Karnataka and Maharashtra throughout the study years remained extremely deprived, at least in rural areas, but these states have shown better economic performance in India for a long time now. In fact, one needs to explain these contradictions in a more serious manner and take into account the issues of inequalities, independent of growth and average poverty alleviation. However, these states because of their better economic status could successfully reduce the incidence of absolute deprivation from 2004 to 2011. Therefore, while better economic conditions help reduction in deprivation, but does not reduce it sufficiently. On the other hand, few other states, such as Andhra Pradesh or Tamil Nadu have achieved similar economic growth like that of Karnataka's and Maharashtra's but have a much lower level of absolute deprivation.

Conclusions

The analysis presented in this paper suggests that consumption-based estimates of poverty, that have been in place in India since the beginning has limited our understanding of poverty in terms of explaining persistence and vulnerability to poverty. An asset-based indicator of poverty is rather

more consistent and effective in these respects. Also by using assets, necessary to survive deprivation, one can identify the extent of poverty in a way of being more sensitive to pro-poor conditions. Our study builds on such an asset based indicator of deprivation, previously developed by Pani, 2020 and identify the specific deprivation conditions across the states of India. It also attempts to point towards the differences between consumption based poverty and asset-based deprivation. We argue that these differences are likely to emerge because while the first is essentially an estimator of current poverty the latter looks at the long term aspects of deprivation which is a rather serious concern from a policy perspective.

For estimating deprivation in India, we use the distance from deprivation index developed in (Pani, 2020), we use two rounds from IHDS I and II. The IHDS conducted during 2004-05 and 2011-12 provide a unique set of data to study the extent to which there is deprivation of household durables at the state level and rural-urban level. Though these surveys were not conducted with the specific intention of understanding poverty in India, the availability of relevant data in the two rounds has facilitated our analysis of deprivation in the Indian context. We then go on to explaining the deprivation and whether

there exists any connection between India's official estimates of consumption poverty and estimated deprivation in our study.

The important conclusions that our study derives are –first, there is substantial regional variation in deprivation in India across states and rural-urban regions. However, the regional pattern observed in deprivation does not match the pattern arising from the regional pattern in official estimates of India's poverty. For example, poverty in India remains high in states like Bihar Jharkhand, Madhya Pradesh, Chhattisgarh and Orissa, whereas deprivation concentrated primarily in states like Maharashtra, Karnataka, Orissa and West Bengal. Therefore, among the deprived state only Orissa figured out among the poor states in India. This also hints towards the insufficiency of consumption-based indicators of poverty to explain the difference between poor and extreme poor. While consumption poverty could identify the poor as a group, it cannot identify who among the poor are suffering deprivation and thus needs more policy attention. This leads us to the second conclusion which relates more to the issue of exclusions. While India has been successfully reducing its level of poverty across all states, such reduction has not been associated with a reduction in absolute deprivation in

terms of including the extremely poor in the process of poverty alleviation. Karnataka and Maharashtra are two states that have been performing economically better than many other states in India but remained high in terms of absolute deprivation. One possible explanation of such events could be that India's poverty alleviation programmes are designed in a way that failed to understand the changing nature of socio-economic transformation in India and the factors contributing to it. During this transition, aspiration for better-paying jobs and agrarian distress in rural areas moved a significant portion of the rural workforce from agriculture to the non-agricultural sector, those who remain left behind and marginal occupation could not break through the poverty trap, perhaps to the extent of increased starvation. This is also consistent with the fact that in the 2020 Global Hunger Index, India ranks 94th out of the 107 countries with sufficient data to calculate 2020 GHI scores. With a score of 27.2, India has a level of hunger that is serious by the categorisation of the index. Though various public schemes such, NREGA, IRDP and so on, have been attempting to improve the economic conditions of the poor in India for a long, but have not achieved much in terms of reduction in deprivation.

References

- Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty. *Journal of public economics*, 95.7-8 , 476-487.
- Alkire, S., & Seth, S. (2013). Identifying BPL households: A comparison of methods. *Economic and Political Weekly*, 49-57.
- Alkire, S., & Seth, S. (2015). Multidimensional poverty reduction in India between 1999 and 2006: Where and how? . *World Development*, 72, 93-108.
- Alkire, S., Roche, J. M., Ballon, P., Foster, J., Santos, M. E., & Seth, S. (2015). *Multidimensional poverty measurement and analysis*. USA: Oxford University Press.
- Antman, F., & McKenzie, D. (2007). Poverty Traps and Nonlinear Income Dynamics with Measurement Error and Individual Heterogeneity. *Journal of Development Studies*, 43.6, 1057–1083.
- Atkinson, A. B. (1998). Poverty in Europe. *Jrjo Jahansson Lectures*. Wiley-Blackwell.
- Attanasio, O., Hurst, E., & Pistaferri, L. (2015). The evolution of income, consumption, and leisure inequality in the United States. In *Improving the Measurement of Consumer Expenditures* (Vol. 74).

- Barrett, C. B., & Carter, M. R. (2013). The economics of poverty traps and persistent poverty: empirical and policy implications. *The Journal of Development Studies*, 49.7, 976-990.
- Basu, S., & Mallick, S. (2008). When does growth trickle down to the poor? The Indian case. *Cambridge Journal of Economics*, 32.3, 461-477.
- Berrebi, Z. M., & Silber, J. (1985). Income inequality indices and deprivation: A generalization. *The Quarterly Journal of Economics*, 100.3, 807-810.
- Bourguignon, F., & Chakravarty, S. R. (2019). Multidimensional poverty orderings: theory and applications. In *Poverty, Social Exclusion and Stochastic Dominance* (pp. 143-166). Singapore: Springer.
- Brandolini, A., Magri, S., & Smeeding, T. M. (2010). Asset-based measurement of poverty. *Journal of Policy Analysis and Management*, 29.2, 267-284.
- Carter, M. R., & Barrett, C. B. (2006). The economics of poverty traps and persistent poverty: An asset-based approach. *The Journal of Development Studies*, 42.2, 178-199.
- Carter, M. R., & May, J. (2001). One kind of freedom: Poverty dynamics in post-apartheid South Africa. *World development*, 29(12), 1987-2006.
- Carter, M. (2007). What we can learn from asset-based approaches to poverty. In *Reducing global poverty: The case for asset accumulation* (pp. 51-61).
- Chakravarty, S. R., & Chakraborty, A. B. (1984). On indices of relative deprivation. *Economics Letters*, 14.2-3, 283-287.
- Corbacho, A., Garcia-Escribano, M., & Inchauste, G. (2007). Argentina: Macroeconomic crisis and household vulnerability. *Review of Development Economics*, 11.1, 92-106.
- Cutler, D. M., & Katz, L. F. (1992). *Rising Inequality? Changes in the Distribution of Income and Consumption in the 1980's*, 82 (2), 546-551.
- Dandekar, V. M., & Rath, N. (1971, January 2). Poverty in India - I: Dimensions and Trends. *Economic and Political Weekly*, 25-48.
- Deaton, A., & Drèze, J. (2009). Food and nutrition in India: facts and interpretations. *Economic and political weekly*, 42-65.
- Deaton, A., & Muellbauer, J. (1980). *Economics and consumer behavior*. Cambridge university press.
- Decancq, K., Fleurbaey, M., & Schokkaert, E. (2015). Happiness, equivalent incomes and respect for individual preferences. *Economica*, 82, 1082-1106.

- Duclos, J.-Y., Sahn, D. E., & Younger, S. D. (2006). Robust multidimensional poverty comparisons. *The economic journal*, 116.514, 943-968.
- Dutta, S., & Kumar, L. (2013). Poverty Dynamics in Rural India: An Asset-Based Approach. *Margin: The Journal of Applied Economic Research*, 7.4 , 475-506.
- Ebert, U., & Moyes, P. (2000). An axiomatic characterization of Yitzhaki's index of individual deprivation. *Economics Letters*, 68.3, 263-270.
- Friedman, M. (1957). The permanent income hypothesis. In *A theory of the consumption function* (pp. 20-37). Princeton University Press.
- Jencks, C., & Mayer, S. E. (1996). Do official poverty rates provide useful information about trends in children's economic welfare? (91-1) . Institute for Policy Research at Northwestern University.
- Low, H., Meghir, C., & Pistaferri, L. (2010). Wage risk and employment risk over the life cycle. *American Economic Review*, 100.4, 1432-67.
- Mayer, S. E., & Jencks, C. (1993). Recent trends in economic inequality in the United States: Income versus expenditures versus material well-being. In *Poverty and Prosperity in the USA in the Late Twentieth Century* (pp. 121-207). London: Palgrave Macmillan.
- Meyer, B., & Sullivan, J. (2003, Jun 9). Measuring the well-being of the poor using income and consumption. *National Bureau of Economic Research* .
- Mitra, S. (2018). Re-assessing “trickle-down” using a multidimensional criteria: the case of India. *Social Indicators Research*, 136.2 , 497-515.
- Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. *Franco Modigliani*, 1.1, 388-436.
- Naschold, F., & Barrett, C. B. (2011). Do short-term observed income changes overstate structural economic mobility? *Oxford Bulletin of Economics and Statistics*, 73.5, 705-717.
- Pani, N. (2020). Towards an Asset-based Indicator of Poverty. *Indian Journal of Human Development*, 14.2, 151-160.
- Paul, S. (1991). “An index of relative deprivation. *Economics Letters*, 36.3, 337-341.
- Richard, B., Pistaferri, L., & Saporta-Eksten, I. (2019). Erratum: Children, Time Allocation, and Consumption Insurance. *Journal of*

- Political Economy*, 127.5 , 2559-2567.
- Runciman, W. (1966). Relative deprivation and social justice.
- Sahn, D. E., & Stifel, D. C. (2000). Poverty comparisons over time and across countries in Africa. *World development*, 28.12, 2123-2155.
- Sen, A. (1999). Development as freedom. 525 . New York.
- Yitzhaki, S. (1979). Relative deprivation and the Gini coefficient. *The quarterly journal of economics* , 321-324.

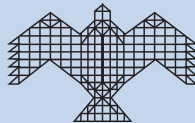
DOCUMENT CONTROL SHEET

1. **Document No. and Year** : NIAS/SSc/IHD/U/WP/10/2021
2. **Title** : Poverty and deprivation in India
Divergence between consumption and asset based estimates
3. **Type of Document** : Working Paper
4. **No. of Pages and Figures** : 21 pages, 3 Tables
5. **No. of References** : 40
6. **Authors(s)** : Debosree Banerjee
7. **Originating School** : School of Social Sciences
8. **Programme** : Inequality and Human Development Programme
9. **Collaboration** : None
10. **Sponsoring Agency** : Tata Consultancy Services
11. **Abstract:**

Consumption expenditure has been widely used in India to estimate poverty. It has recently been argued that these estimates have several weaknesses and an asset based index is a better indicator of deprivation. Building on the asset based indicator developed earlier, this paper estimates deprivation in India. It looks at two specific aspects of deprivation: (i) region and time-wise variations in deprivation in terms of absolute and relative deprivation, (ii) difference between deprivation and consumption-based poverty. The results suggest that there is a difference in the regional ranking of poverty depending on whether to consider the immediate consumption expenditure or the longer term picture of vulnerability provided by the asset based indicator of deprivation.
12. **Keywords** : Poverty, Deprivation, Consumption, Asset, Regional variation, India
13. **Security Classification** : Unrestricted
14. **ISBN** : None

NATIONAL INSTITUTE OF ADVANCED STUDIES

The National Institute of Advanced Studies (NIAS) was conceived and established in 1988 by the vision and initiative of the late Mr. J.R.D. Tata primarily to nurture a broad base of scholars, managers and leaders to address complex and important challenges faced by society through interdisciplinary approaches. The Institute also engages in advanced multidisciplinary research in the areas of humanities, social sciences, natural sciences and engineering, as well as conflict and security studies.



School of Social Sciences
NATIONAL INSTITUTE OF ADVANCED STUDIES
Bengaluru, India