

# Incorporating Public Good Availability into the Measurement of Poverty



## In brief

- Official poverty measures have not taken into account publicly provided goods and in-kind transfers, even though public service provision influences household consumption decisions and levels. Publicly provided goods and in-kind transfers vary substantially across Indian villages.
- This research proposes a new method for adjusting the distribution of consumption based on the local availability of public goods, therefore, providing more realistic poverty lines and helping to guide investments in public goods that target the conditions of the poor.
- This study is based on primary survey data of roughly 2,000 households and focuses on schooling, healthcare and the Public Distribution System (PDS).
- Key findings:
  - Public provision results in a fall in aggregate poverty but greater regional inequality as transfers are not concentrated in the poorest villages.
  - The PDS and schooling result in larger spatial dispersion of poverty rates.
  - There is some degree of clustering in public service provision.
- Key policy implications:
  - Availability of basic public amenities affects households' consumption decisions, and hence, it also affects poverty estimates based on private consumption data.
  - Public services and transfers do not always reach the poorest villages.
  - Government schools in Bihar: the problem is quality, not quantity.
  - Providing public services to lower consumption inequality may not necessarily hold in the case of improvements of public schools.

## Policy Motivation

*“Our research proposes a method for adjusting the distribution of consumption based on the local availability of public goods”*

Publicly provided goods and in-kind transfers vary substantially across Indian villages, yet they have never been explicitly incorporated in the official poverty measures. Since public provision influences household consumption decisions and levels, poverty numbers based solely on private consumption data are necessarily biased. Our research proposes a method for adjusting the distribution of consumption based on the local availability of public goods. Our hope is that this will provide both more realistic poverty lines, but also guide future investments in public goods in directions that would lead to improvements in the conditions of the poor.

## Audience

Our work will be of interest to the Planning Commission and those interested in the methodology of poverty measurement more generally. The analysis will also provide input into policy making for public good expansions and poverty reduction in Bihar. The Government of Bihar, through the office of the Chief Minister, has taken a keen interest in theoretical issues connected to measurement of poverty. We hope that some of our results will help in the design of programs for poverty reduction undertaken by the Bihar Ministry for Rural Development.

## Policy Impact

*“We surveyed roughly 2,000 households from 40 villages in rural Bihar during the autumn of 2012”*

None of the currently available public data sources give detailed information on households’ consumption patterns together with information on local public goods availability. This study is therefore based on primary survey data. We surveyed roughly 2,000 households from 40 villages in rural Bihar during the autumn of 2012 (the map below shows the location of these villages). The analysis focuses on three types of public services and transfers: schooling, health care and the Public Distribution System (PDS) which provides subsidized grains to poor households. All these goods and services are either not priced or heavily subsidized, which makes it difficult to value the benefits they give rise to. We exploit the fact that all three have clear privately provided alternatives and use the price of these alternatives to impute values to the public services for households that benefit from them. This remains a challenge because services vary considerably by quality within both public and private sectors. We therefore consider the current approach a preliminary attempt at answering this question.

Our main finding is that public provision results in a fall in aggregate poverty but greater regional inequality because transfers are not concentrated in the poorest villages. All three types of services considered – schooling, health care and the PDS – contribute to a narrowing of the consumption distribution, indicating that the poor utilize the public facilities relatively more than other households. However, the PDS in particular, but also schooling, seem to induce larger spatial dispersion of poverty rates. So while the targeting of PDS beneficiaries within villages leads to a fall in the overall inequality, the regional mis-targeting is

substantial. We also find that the changes in measured poverty at the village level induced by the different public services are positively correlated. This suggests that there is some degree of clustering in the provision of public amenities and transfers. Households living in villages that benefit the most from one type of facility are the ones most likely to also benefit from other types of services.

## Policy Implications

*“Regional allocation of anti-poverty schemes based on private consumption numbers only, risks being seriously mis-targeted.”*

### **The availability of basic public amenities affects households’ consumption decisions, and hence it also affects poverty estimates based on private consumption data**

An accurate description of the distribution of poverty across time and space requires an analysis of local public goods availability. Thus, regional allocation of anti-poverty schemes based on private consumption numbers only, risks being seriously mistargeted. To better guide the allocation of funds for such schemes, it would be useful if the National Sample Survey Organization (NSS) started publishing information on public goods availability as part of their consumer expenditure surveys.<sup>1</sup>

### **Public services and transfers do not always reach the poorest villages**

The provision of public amenities and transfers are generally better in less-poor areas, and thus, they lead to larger regional variation in poverty. This also means that the current regional distribution of public amenities is not efficient in terms of poverty alleviation. As public services are likely to serve as an input in the growth process, the lack of provision in some of the poorest areas could also affect the overall growth performance of Bihar.

### **Government schools in Bihar: the problem is quality, not quantity**

Most villages in our survey sample have a government primary school nearby. However, our data also indicate that many of these schools are of very low quality. Households seem to react when faced with these low-quality schools; students are more likely to be enrolled at a private institution if the local public schools (a) do not offer any teaching in English, and (b) have few teachers per student.

*“The provision of public amenities and transfers are generally better in less-poor areas, and thus, they lead to larger regional variation in poverty”*

### **Public amenities as a redistribution tool**

Provision of public services tends to lower overall consumption inequality, and hence, it serves as a redistribution tool. However, this is not necessarily the case for improvements of public schools. The intuition is that poor households are not always the ones appreciating high-quality public schooling the most. The value of quality schools might be higher for richer households that would have opted for a private alternative if the government school was of low quality.

---

1. The official poverty estimates are derived through this nation wide household survey.

Figure 1: Map of Sample Villages



## Further Reading

Banerjee, A. and Somanathan, R. (2007). The Political Economy of Public Goods: Some Evidence from India. *Journal of Development Economics*, 82(2), 287-314.

Besley, T., Pande, R., Rahman, L., and Rao, V. (2004). The Politics of Public Good Provision: Evidence From Indian Local Governments. *Journal of the European Economic Association*, 2(2-3), 416-426.

Epple, D., and Romano, R. E. (1996). Public Provision of Private Goods. *Journal of Political Economy*, 57-84.

Government of India (2009). Report of the Expert Group to Review the Methodology for Estimation of Poverty.

Khera, R. (2011). India's Public Distribution System: Utilisation and Impact. *Journal of Development Studies*, 47(7), 1038-1060.

Van de Walle, D. (1998). Assessing the welfare impacts of public spending. *World Development*, 365-379.

## **About the authors**

*Anders Kjelsrud* is a PhD candidate in the Department of Economics at the University of Oslo. His main research interests are development economics and international economics.

*Rohini Somanathan* is Professor of Economics at the Delhi School of Economics. Her research interests lie at the intersection of development economics, public economics and political economy. A major strand in her research explores mechanisms through which public institutions and community behavior influence patterns of mobility and group inequality. This includes work on the politics of caste identities in India and racial segregation in the United States.

The International Growth Centre  
(IGC) aims to promote sustainable  
growth in developing countries  
by providing demand-led policy  
advice based on frontier research.

---

Find out more about  
our work on our website  
[www.theigc.org](http://www.theigc.org)

For media or communications  
enquiries, please contact  
[mail@theigc.org](mailto:mail@theigc.org)

Follow us on Twitter  
[@the\\_igc](https://twitter.com/the_igc)

International Growth Centre,  
London School of Economic  
and Political Science,  
Houghton Street,  
London WC2A 2AE



International  
Growth Centre

Designed by [soapbox.co.uk](http://soapbox.co.uk)