

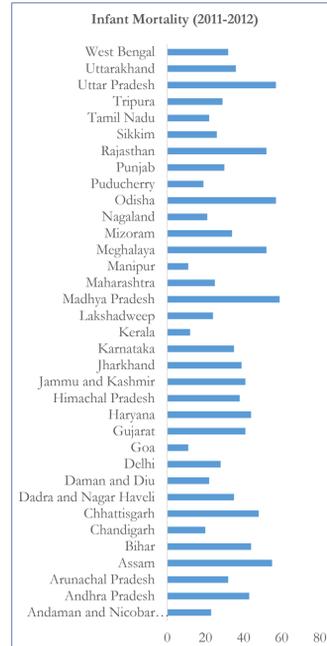
Variation in Infant Mortality Within India

The Role of Income Inequality and Government Expenditure

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Overview

- **Infant mortality rate (IMR):** The number of children who die within the first year of life per 1,000 live births.
- **Aim:** This project explores the relationship between infant mortality, income inequality, and state expenditure on welfare and child and maternal health.
- **Background:** Past studies show that literacy, especially female literacy, and income are strongly correlated with infant mortality. Utilization of medical services, especially antenatal care and institutional deliveries, is influenced by several socioeconomic and cultural factors but it is strongly correlated with female literacy (Figa-Talamanca). There is conflicting literature on the relationship between income inequality and infant mortality (Deaton).
- **Data:** This study uses state-level data for 2011-2012 and population data from the 2011 census. IMR, female literacy, population below poverty line, and Gini coefficients are separated by rural and urban areas.
- **Summary:** There is a positive statistically significant relationship between income inequality and infant mortality in rural areas but not in urban areas. This project didn't find a statistically significant relationship between infant mortality and government expenditure on public health and welfare.



Government Expenditure and Infant Mortality

Methods

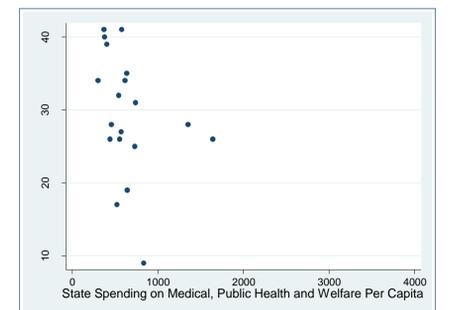
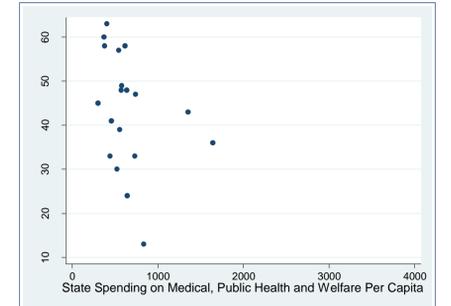
- Per capita and per child (0-14 years) measures for three different state expenditures –
 1. Child and maternal health
 2. Medical, public health and welfare
 3. Education
- Separate linear regressions for urban and rural areas
- Controls – Gini coefficients (separate), female literacy (separate), average income (state combined), percent of the population below the poverty line (separate)

Findings

No statistically significant coefficients for any measure of state expenditure for both rural and urban infant mortality

Limitations

- Expenditure numbers are from the same years as IMR – spending presumably needs time to affect outcomes.
- This doesn't consider investment from non-governmental sources.



Income Inequality and Infant Mortality

Methods

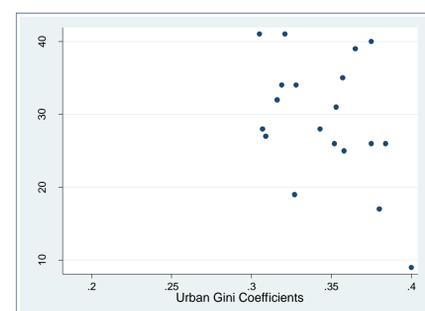
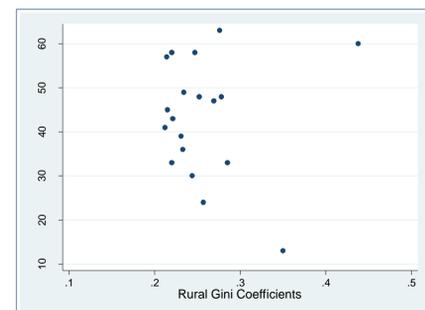
- Gini coefficients = measure of income inequality in rural and urban areas
- $0 \leq \text{Gini Coefficient} \leq 1$
- Gini=0 → perfect income equality; Gini=1 → perfect income inequality
- Separate linear regressions for urban and rural areas
- Controls – female literacy (separated by rural and urban), average income by state, and percent of population living below the poverty line (BPL) (separated by rural and urban)

Findings

- Large positive statistically significant coefficient for rural Gini coefficients
- No statistical significance for urban income inequality
- Female literacy and BPL population had statistically significant coefficients in both rural and urban areas

Limitation

Average income was not separated by rural and urban which could affect findings.



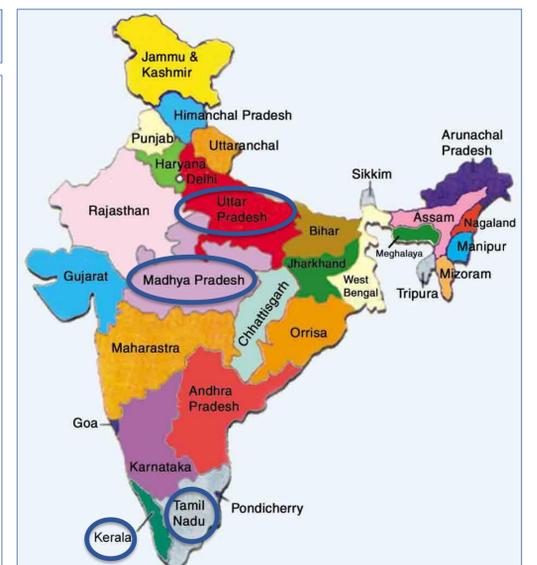
Case Studies

Low IMR States

- **Kerala:** Non-state actors like Christian missionaries invested heavily in education and public health which decreased IMR in the last few decades.
- **Tamil Nadu:** The state's health department has successfully separated public health from other medical decisions to ensure that public health remains a priority.

High IMR States

- **Uttar Pradesh:** There is low uptake of medical services like antenatal care because of women's lack of autonomy, especially in rural areas.
- **Madhya Pradesh:** Gains in education and a decreasing gender disparity in literacy have not translated to declines in IMR because of slow economic growth, especially in agriculture.



- All four states have similar levels of rural and urban income inequality.
- They have very different levels of female literacy, state spending, and population below the poverty line.

References:

Deaton, Angus. "Health, Inequality, and Economic Development." *Journal of Economic Literature* March 2003: 113-158.
 Figa-Talamanca, Irene. "Infant and Child Mortality in the Rural Areas of the Developing World: A Review of Recent Trends and Policy Implications." *Genus* 1984: 131-154.

Acknowledgments

Concentration and Capstone Advisor: Dr. Andrew Foster
 Professor of Economics and Health Services Policy and Practice