DATA FOR DEVELOPMENT

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A monthly update of socio-economic developments in India by the IHDS research community.

# Can safe drinking water improve children's educational outcomes?

-Narbadeshwar Mishra, Jyoti Prasad Mukhopadhyay

This study examines the impact of India's National Rural Drinking Water Programme (NRDWP) on children's education. In rural India, women and girls are primarily responsible for fetching water (figure 1). This not only limits their own opportunities but also impacts children's education. To address this challenge, the government of India implemented the NRDWP in 2009, which provided indoor piped drinking water (IPDW) to all rural households. We ask whether access to safe drinking can significantly impact children's education. We utilize data from the two rounds (2004 and 2011) of the India Human Development Survey and employ the 'difference-in-differences' methodology. We hypothesize that children in villages with lower initial IPDW access levels will likely gain more from the program than their counterparts in villages with higher initial access levels. Therefore, we exploit variation in the village-level IPDW intensity at the baseline (2004) to define 'treatment' (lowest quartile of IPDW intensity) and 'control' (highest quartile of IPDW intensity) villages. Subsequently, we compare changes in average outcomes of children residing in treatment and control villages between pre- and post-intervention periods (2004 and 2011, respectively) to estimate the impact of the NRDWP program.

Figure 1. Daily time spent on water collection, by gender
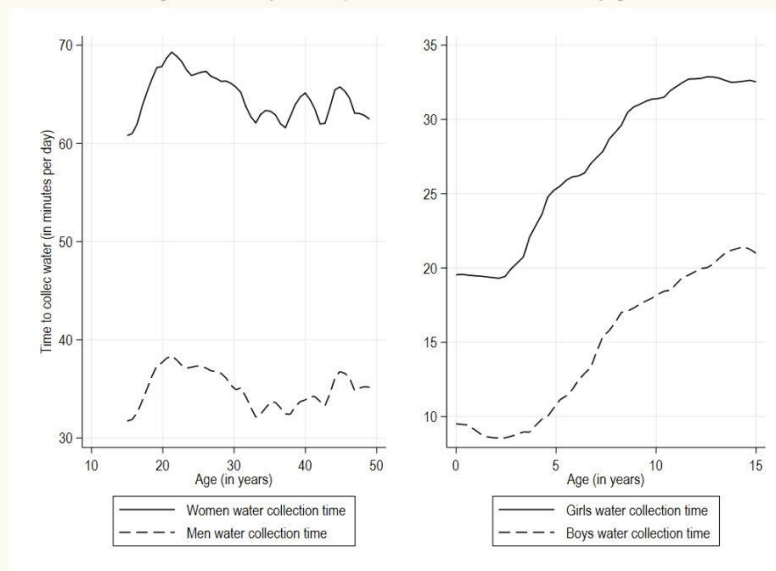
Our findings suggest a 4.5% increase in school enrollment and a 14% rise in educational spending in villages in the lowest quartile (treatment) relative to villages in the highest quartile in terms of baseline IPDW intensity (control). Additionally, children in these villages showed improved reading abilities and reduced school absenteeism.

Figure 2. Impact of hours of IPDW supply on educational and learning outcomes of rural children aged 8-11
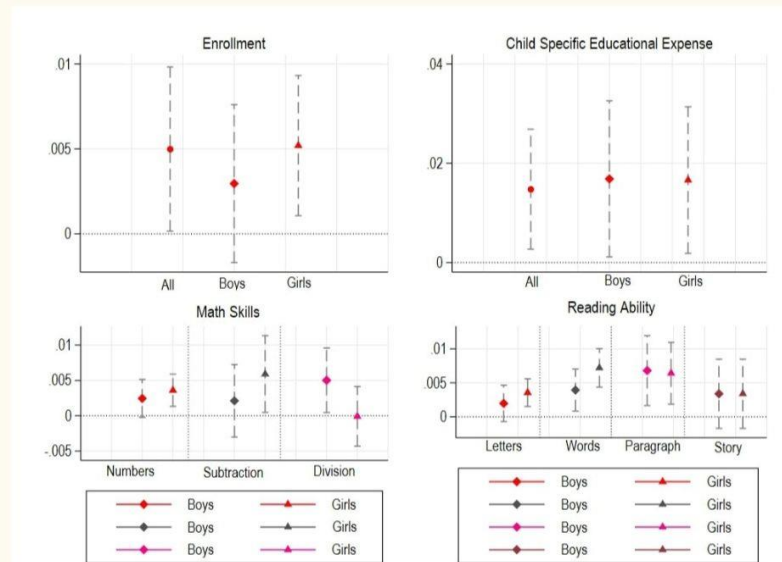
The positive impact is attributed to several factors. First, access to piped water frees up time previously spent fetching water, allowing girls to dedicate more time to studies. Second, cleaner water reduces diarrhoeal cases, leading to better health and fewer missed school days. Third, reduced waterborne illnesses decrease healthcare expenses, potentially freeing up resources for educational spending.

The study emphasizes that NRDWP not only improves public health but also promotes gender equality in education by empowering women and girls.

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Narbadeshwar Mishra is a Ph.D. scholar at the IFMR GSB, Krea University. He is an applied microeconomist, and his research interests lie in development economics and public policy. He predominantly works on human capital (primarily education and health) and the associated gender disparity. He also does impact evaluation of public policies.

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Jyoti Prasad Mukhopadhyay is currently Associate Professor of Economics at IFMR GSB, Krea University. He holds a masters in economics from Delhi School of Economics, Delhi University and a Ph.D. in economics from Institute for Financial Management and Research (IFMR), Madras University. His research interests lie in the areas of development economics, applied econometrics, empirical corporate finance, and behavioral economics

Conspicuous consumption for Social Parity

-Chinmayi Srikanth and Shubhasis Dey

The extant literature on status-signalling primarily adopts Veblen's theory of class to caste and racial identities. This study aims to adopt a more suitable theoretical lens that is more relevant not only for class identities but also for other identities such as caste and race. By viewing conspicuous consumption within the Stigma–Identity–Threat framework, this study analyses how socially disadvantaged groups in India respond to stigma through their consumption behaviour. Using two rounds of the India Human Development Survey data (2004–05 and 2011–12), we study whether disadvantaged social groups embrace or distance themselves from their stigmatized identity. We find that SC (Scheduled Castes), ST (Scheduled Tribes), and OBC (Other Backward Classes) households among caste groups, and Muslims among religious groups, tend to move away from their devalued identity. While OBCs achieve this through productive expenditures, SCs, STs, and Muslims use unproductive means.

Figure 1: Relationship between conditional log expenditure on conspicuous consumption and log of average income by caste– state cells, 2004–05
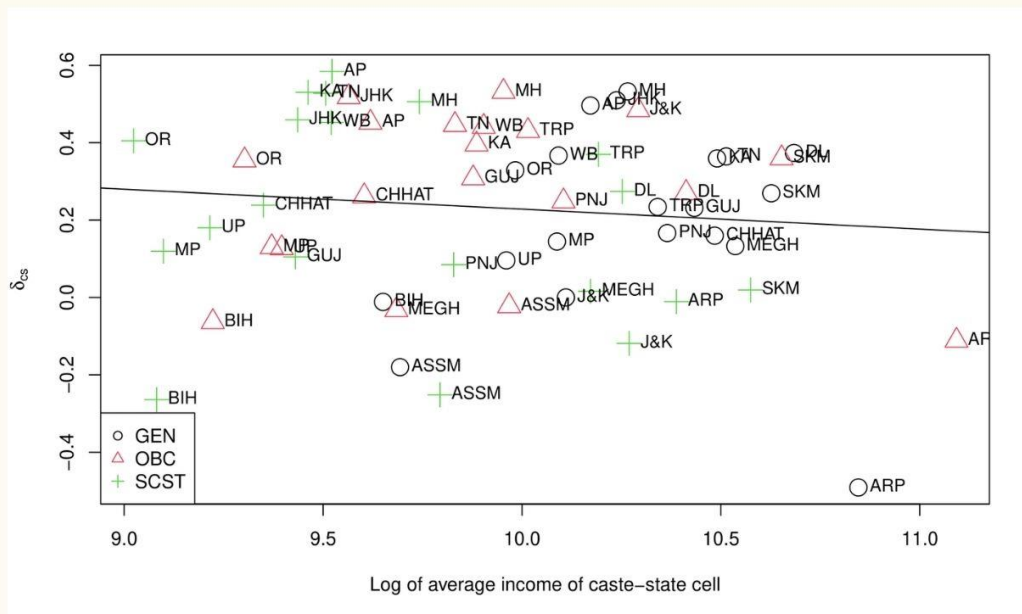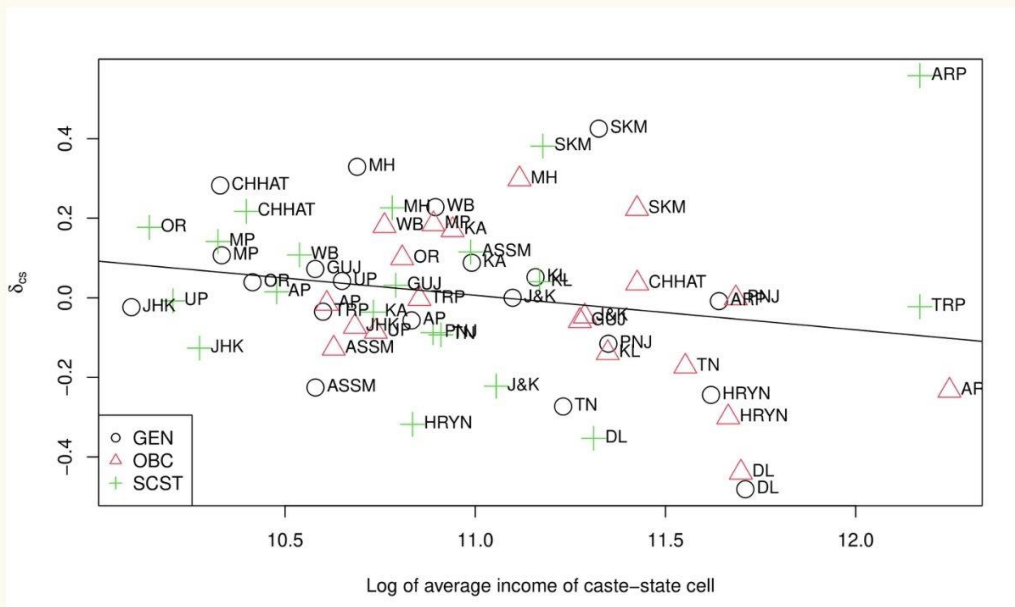
Figure 2 : Relationship between conditional log expenditure on conspicuous goods and log of average income by caste–state cells, 2011–12

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Chinmayi Srikanth is a post-doctoral researcher at the Centre for Development Economics (CDE) at the Delhi School of Economics (DSE) and the Institute of Economic Growth (IEG). She earned a Ph.D. in Economics from the Indian Institute of Management, Kozhikode. Her research areas include Stratification Economics, Intersectionality, and Social Mobility.

Shubhasis Dey

Prof. Shubhasis Dey is currently the Dean of Faculty Administration and Development and a Professor of Economics at IIM Kozhikode. Prior to joining IIM Kozhikode he worked as an economist at the Bank of Canada. Dr. Dey earned a Ph.D. in Economics from the Ohio State University. He also holds a MS degree in Quantitative Economics from the Indian Statistical Institute, Kolkata and a BS degree in Economics from Presidency College, Kolkata. His current research interests lie in the areas of development economics and political economy.

Transitioning from PAPI to CAPI: Learning from IHDS 3

-Bijay Chouhan, Dinesh Kumar Tiwari and Om Prakash Sharma

The shift from Paper and Pencil Interviewing (PAPI) to Computer-Assisted Personal Interviewing (CAPI) offers numerous advantages, including improved data quality, reduced errors due to in-built consistency and range checks, instruction manual with each variable, Soft checks and enhanced efficiency along with real time data availability and centralized monitoring. However, moving from PAPI to CAPI adds significant complexity in three areas: Survey design, Interviewer training and support and Data security.

Survey Design: CAPI allows for more complex question types and branching logic compared to PAPI which can minimize errors and inconsistencies. While this flexibility can improve data richness, it's crucial to ensure the questionnaire remains clear and respondent-friendly to avoid confusion and careful review and testing of various branching logic is required to ensure that there is no inadvertent data loss. This is particularly important in multi-lingual and heterogeneous societies where social structures vary regionally. For example, the system must be flexible to handle rare cases of polygamy.

Training and Support: CAPI necessitates investment in devices and software. Organizations must ensure compatibility with existing systems and provide adequate training to core team and interviewers on the new technology. It is also necessary to ensure that interviewers are fully trained and have access to a helpdesk when facing problems in the field. Initial training must include handling the devices and secure data transfer systems. Field team must understand the protocol for reporting software or hardware issues and receiving timely assistance.

Data Security and Confidentiality: CAPI systems often handle sensitive personal data, so organizations must implement robust data security measures to protect respondent confidentiality. This may include encryption, secure storage, and access controls. In addition, interviewers should be trained to adhere strictly to device security protocols aimed at preventing unauthorized access or data breaches.

The IHDS-3 team began with excellent technological partnership with University of Michigan's Survey Research Center but also learned that complex structure of Indian society and field conditions required considerable adaptation.

About the Authors

Bijay Chouhan

Bijay Chouhan, Senior Data and Systems Specialist at NCAER, manages research data and technological innovations at the National Data Innovation Centre (NDIC). With expertise in research data management, data technologies, and statistical computing, he holds a Masters in Computer Science from MD University and a BCom from the University of Delhi. He has compiled STATA data files from 7 rounds of NSSO employment data and developed the CAPI Reference Questionnaire for the Delhi Metropolitan Area Survey (DMAS) baseline questionnaire.

Dinesh Kumar Tiwari

Dinesh Kumar Tiwari, Fellow at the NCAER National Data Innovation, is an accomplished anthropologist specialising in large-scale social surveys and experimental research. Currently coordinating IHDS 3, he excels in field management, monitoring, and ensuring data quality. With experience at the Indian Statistical Institute and the World Bank, his expertise encompasses migration studies, ethnographic research, public health, and experimental economics.

Om Prakash Sharma

O. P. Sharma is a Fellow at the NCAER, specializing in primary data collection, field management, field training, coding and editing. He is currently working in the project IHDS 3. Some of the other studies he has worked on include: Fertilizer Consumption and Quality Seeds, IHDS I 2004-05, Rural Economic and Demographic Change in India, India Human Development Survey-II 2011-12 and Third Census of Handloom Weavers. Between 1988 and 2005, he headed the NCAER Field Office at Bhopal recruiting, training and supervising field staff and editing primary data.

Publications List

Recent Publications using IHDS Data:

He, M., & Yang, S. (2024). *Public–private partnerships for energy transition: studying role of economic change and energy restructuring over the time.* Economic Change and Restructuring, 57(2), 81. Link

Liu, C.-W., Saldanha, T., & Mithas, S. (2024). *EXPRESS: Can Digital Skills Empower Disadvantaged Castes and Women? Evidence from India*. Production and Operations Management, 0(ja). Link

IHDS in Media:

Drèze, J., & Oldiges, C. (2024). T*he 'cereal gap': Looming issues in India's foodgrain policy.* Ideas for India. Link

About IHDS

The India Human Development Survey (IHDS) is a nationally representative, multi topic survey of 41,554 households in 1503 villages and 971 urban neighborhoods across India. The first round of interviews were completed in 2004-05; Data is publicly available through ICPSR. The second round re-interviewed most of these households in 2011-12 (N=42,152) and data for the same can be found via ICPSR. IHDS 3 is currently in progress with field work and data compilation.

IHDS 3 has been jointly conducted by researchers from the University of Maryland, the National Council of Applied Economic Research, Indiana University and University of Michigan. Funding for the second round of this survey is provided by the National Institutes of Health, grants R01HD041455 and R01HD061048. Additional funding is provided by the Ford Foundation, IDRC and DFID.

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