

Santanu Pramanik

CONTACT INFORMATION

Affiliation: Fellow and Deputy Director of NCAER's new Centre for Data Innovation

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EDUCATION

B.Sc. Statistics (Honours), R.K. Mission Residential College, Narendrapur, Kolkata, India, 2001.

Minors: Mathematics and Economics.

Percentage of Marks: 65.6% (First class Honours)

M.Sc. Statistics, Calcutta University, India, 2003.

Specialization: *Advanced Statistical Inference*

Percentage of Marks: 73% (First class, ranked third)

Ph.D. Survey Methodology, Joint Program in Survey Methodology (JPSM), University of Maryland, College Park, USA, 2008.

Dissertation: *The Bayesian and Approximate Bayesian Methods in Small Area Estimation*

Advisor: Partha Lahiri

POSITIONS AND EMPLOYMENT

2018-	Fellow and Deputy Director, NCAER-NDIC, New Delhi, India
2012- 2017	Research Scientist, Public Health Foundation of India, New Delhi, India
2008-2012	Survey Statistician, NORC at the University of Chicago, Bethesda, MD

RESEARCH SPECIALIZATION

My research interests lie in applying statistical techniques in public health and other areas of social development, including designing cross sectional surveys, conducting randomized evaluation studies, doing small area estimation and infectious disease modelling, and analyzing survey data from panel and repeated cross-sectional surveys.

PROFESSIONAL EXPERIENCE

Integrated Child Health and Immunization Survey (INCHIS), India (2014 Dec -2017 Apr)

- Took the lead in designing three rounds of INCHIS (Round 1, 2 & 3), a nationally representative survey on child health and immunization coverage. Two key objectives of INCHIS were regular monitoring (bi-annual) of immunization coverage in the country and

evaluation of supplementary immunization activities under Mission Indradhanush. Key responsibilities include:

- developing the study design and sampling plan
- designing five structured questionnaires (household, mother, sub-centre, planning unit, ASHA)
- selecting districts, clusters and households using probability sampling methods
- providing training to the state coordinators
- communicating with the field agency to resolve different technical issues
- validating initial round of data submitted by the agency
- guiding the team in constructing survey weights and analyzing the data incorporating sampling design features
- As a first author, I drafted the report on INCHIS round 1 & 2 with inputs from other authors for MoHFW. Manuscripts have also been submitted to peer-reviewed journals.

Effectiveness of malaria control in a growing metropolis in western India, 2008-2015 (2017 Jan-Oct)

- Analyzed secondary data on malaria surveillance and control measures from Ahmedabad Municipal Corporation (AMC) for a period of 8 years (2008-2015), disaggregated by month and six zones (North, South, East, Central, West, and New West) of AMC.
- Used multivariate regression analysis technique to study the association between malaria surveillance indicators and several control and prevention measures undertaken by AMC after accounting for other confounders such as zonal attributes and climatic factors.

Impact assessment of the SALT (Stimulate, Appreciate, Learn, and Transfer) approach of community ownership to increase immunization coverage - a mixed methods study in Assam (2015 Nov -)

- As a co-investigator, I played a crucial role in getting this large competitive grant from 3ie (worth \$600,000).
- Designed a cluster randomized controlled trial (RCT) to be carried out in three districts of Assam.
- Developed the sampling strategy, sample size and power calculation, randomization plan, monitoring plan for baseline data collection and intervention implementation, identifying process indicators and developing process evaluation data collection plan.

Small Area Estimation of Vaccination Coverage Rates by Combining Time Series and Cross Sectional Data (2013 March - December)

- In the absence of up-to-date vaccination coverage estimates, predicted coverage rates for states (by rural/urban) in India using linear mixed model.

A Pilot of a Temperature Monitoring System (TMS) for the Vaccine Cold Chain in Kurukshetra, Haryana and Delhi (2013 Dec- 2015 Jan)

- Evaluated the effectiveness of the TMS in maintaining ideal temperature conditions (a pre-post analysis using mixed effects regression model after adjusting for relevant confounders)

Evaluate the effectiveness of electronic Vaccine Intelligence Network (eVIN) in improving vaccine stock performance: a pilot study in Uttar Pradesh (2014 Jan- 2015 July)

- Evaluated changes in indicators representative of stock performance in the treatment districts as a result of eVIN introduction relative to that of control districts (using mixed effects regression model after adjusting for relevant confounders)

Kenya Municipal Program (2011 June – 2012 August)

- Worked closely with the NORC international project team as the *Sampling Statistician* and designed the sampling plan for the baseline household survey of the demographic, infrastructure, housing and economic situation of 15 Kenyan municipalities.
- Visited Nairobi to collect data on sampling frames, met people at the Kenyan National Bureau of Statistics, World Bank Kenya, and other local partners.

(Other NORC projects have been omitted)

PUBLICATIONS

Peer-reviewed

- Pramanik S**, Ghosh A, Nanda RB, de Rouw M, Forth P, Albert S (2018). Impact evaluation of a community engagement intervention in improving childhood immunization coverage: a cluster randomized controlled trial in Assam, India. *BMC Public Health*, 18(1):534.
- Winter, A., **Pramanik, S.**, Lessler, J., Ferrari, M., Grenfell, B. and Metcalf, C. J. (2018). Rubella vaccination in India: Identifying broad consequences of vaccine introduction and key knowledge gaps. *Epidemiology and Infection*, Volume 146, Issue 1, pp. 65-77.
- Ghosh, A., Millett, C., Subramanian, S. V., **Pramanik, S.** (2017) Neighborhood heterogeneity in health and well-being among the elderly in India- evidence from Study on Global Ageing and Adult Health (SAGE), *Health & Place*. Vol. 47, 100-107.
- Pramanik S**, Muthusamy N, Gera R, Laxminarayan R (2015). Vaccination coverage in India: A small area estimation approach. *Vaccine*, Vol. 33, No. 14, 1731-1738.
- Pramanik, S. (2014). Selection of Prior for the Variance Component and Approximations for Posterior Moments in the Fay-Herriot Model, *Mathematical Population Studies*, Vol. 21, No. 1, 45-64.
- Yang, M., Buso, M., Butani, S., Hiles, D., Mushtaq, A., **Pramanik, S.**, Scheuren, F. (2014). An evaluation of three disclosure limitation models, *Journal of the International Association for Official Statistics*, Vol. 30, No. 2, 75-88.
- Lahiri, P., **Pramanik, S.** (2011) Discussion of “Estimating Random Effects via Adjustment for Density Maximization” (by Morris, C. and Tang, R.). *Statistical Science*, Vol. 26, No. 2, 291–295.

Report

- Pramanik, S.**, Agrahari, K, Srivastava, A., Varanasi, V., Setia, M., Laxminarayan, R. (2016). Integrated Child Health and Immunization Survey, Rounds 1 & 2 Report. *Immunization Technical Support Unit, Ministry of Health and Family Welfare, Government of India*, New Delhi.

Submitted

- Lahiri, P. and **Pramanik, S.** (2018). Evaluation of Synthetic Small Area Estimators Using Design-based Methods. Submitted to *Austrian Journal of Statistics*.

Work in Progress

- Pramanik, S., Ghosh, A., Parveen, S., Albert, S. Effect of indoor air pollution on acute lower respiratory infection for children under 2 in rural Assam.

Pramanik, S., Patil, A., Basak, P., Balasubramaniam, P. Effectiveness of malaria control in a growing metropolis in western India, 2008-2015.

PROFESSIONAL ACTIVITIES

Conference Participation

- Paper Presenter. *Community Engagement & Behaviour Change Communication*, Urban Health Conference, IIMR Delhi, Feb 24-25, 2018.
- Paper Presenter. *Impact evaluation of a community engagement intervention in improving immunization coverage: a cluster randomized controlled trial*, IISA International Conference on Statistics, Dec 27-30, 2017, Hyderabad.
- Paper Presenter. *Evaluating the impact of a community engagement approach to increase immunization coverage in Assam*, Evaluation Conclave June 6-9, 2017, Thimphu.
- Paper Presenter. *Integrated Child Health and Immunization Survey (INCHIS): Objectives, Methodology and Challenges*, IFPRI-POSHAN conference on Delivering for Nutrition in India: Learnings from Implementation Research, Nov 9-10, 2016, Delhi.
- Paper Presenter. *Evaluating the impact of SALT intervention to increase immunization coverage in Assam: challenges*, 3ie-Delhi Evidence Week, November 15-16, 2016.
- Paper Presenter. *Selection of Prior for the Variance Component and Approximations for Posterior Moments in the Fay-Herriot Model*, World Statistics Congress (WSC), Rio de Janeiro, Brazil, July 2015.
- Paper Presenter. *Vaccination Coverage in India: A small area estimation approach by combining time series and cross sectional data*, International Statistical Institute (ISI) Satellite Meeting on Small Area Estimation, Santiago, Chile, August, 2015.
- Paper Presenter. *Vaccination Coverage in India in 2011: A Small Area Estimation Approach*, ISI Regional Statistics Conference, Kuala Lumpur, Malaysia, Nov 2014.
- Paper Presenter. *Small Area Estimation of Vaccination Coverage Rates by combining Time Series and Cross Sectional Data*, 31st Annual Conference of Indian Society for Medical Statistics (ISMS) 2013, Christian Medical College Vellore.
- Paper Presenter. *Design Consistency and Benchmarking in Small Area Estimation*, Joint Statistical Meeting (JSM) 2012, San Diego.
- Paper Presenter. *Modeling Aggregates for Reliability and Confidentiality of Output with Application to the QCEW program of BLS*, JSM 2011, Miami.
- Paper Presenter. *MCMC Algorithms for Bayesian Models Involving Binary Data*, JSM 2010, Vancouver.
- Paper Presenter. *The Prior Selection and Approximations for the Nested Error Regression Model: Estimation of Finite Population Mean for Small Areas*, JSM 2009, Washington DC.
- **Chair- Invited Session.** *Contemporary Bayesian Generalized Linear Models*, JSM 2009, Washington DC.
- **Invited Speaker.** *Consultation on Small Area Measurement and Health Information Systems*, Institute for Health Metrics and Evaluation (IHME), April 2009, Seattle.
- **Invited talk.** *Estimation under Ignorable Response Mechanism and Unweighted Imputation*, Washington Statistical Society (WSS), July, 2007
- **Invited Speaker.** *Estimation under Ignorable Response Mechanism and Unweighted Imputation*, Joint Statistical Meeting, 2006, Seattle.

Teaching

- Taught courses on *Sampling techniques and sample size estimation* at various platforms such as workshops organized by IIPH-Delhi, 3ie, Visva Bharati University, Santiniketan.
- Facilitated a workshop on *Epidemiologic study designs, Sampling techniques and Sample size calculation* at Nazareth Hospital, Shillong, 23-25 April, 2018.
- **Invited to teach** a three-hour training session on *Small Area Estimation using R*, First Asian ISI Satellite Meeting on Small Area Estimation, Bangkok, Thailand, 2013.

HONORS AND AWARDS

- Recipient of Cochran-Hansen Award 2015: International Association of Survey Statisticians (IASS) presents this award every two years for the best paper on survey research methods submitted by a young statistician from a developing or transition country.
- Shortlisted for final round interview for the Wellcome Trust/DBT Early Career Fellowship for Clinicians/Public Health Researchers, 2014.
- Elected as South Asia Editor of *Journal of the International Association for Official Statistics*, 2014 September onwards.
- Received *2011 NORC Employee Recognition Spot Award* for my contribution to the US Census Record Linkage Evaluation project.
- Received *2010 NORC Employee Recognition Award* for overall performance in the calendar year.
- Winner of the Joint SSS, GSS, and SRMS *Student Paper Competition award* for the Joint Statistical Meeting, 2009, Washington, DC & 2008, Denver.
- Qualified for the Joint CSIR-UGC *Junior Research Fellowship (JRF)* and have been declared eligible for lectureship in colleges in India, 2003-2004.