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Education

Ph.D., Economics, Pennsylvania State University	2017-2023 (expected)
M.A. Economics, Delhi School of Economics, University of Delhi	2013-2015
B.A. Economics, University of Delhi	2010-2013

Research

Bounding Treatment Effects in Experiments with Non-Compliance: The Role of Follow up Surveys

(JMP) Abstract: In this paper I study the problem of identifying the causal effect of an experimental treatment when the experiment suffers from non-compliance. In particular, I consider the identifying power of information collected from non-complying participants after the completion of the treatment phase. Follow up surveys often ask study participants why they chose not to accept an offer of treatment despite being assigned to it, and answers to such questions offer insights into the decision process by which agents choose to comply with their assigned treatment status. I propose a model which rationalizes an agent's compliance decision and use it to define a set of values for the average treatment effect which are conformable with data observed in a randomized trial. This model and the implied set of identified values for the average treatment effect rely on the availability of follow up surveys which ask agents why they chose to not comply. This underscores the importance of following up with non-complying agents since the model often leads to substantially tighter identified sets for the average treatment effect than what is possible without this information. I apply the proposed model to data from the Job Training Partnership Act Study to estimate identified sets for the average treatment effect for a number of employment outcomes.

Identification of Binary Choice Models with Misreported Outcomes (with Rui Wang)

Abstract: This paper characterizes partial identification of a binary choice model when the binary dependent variable is potentially misreported. Two different approaches are proposed which exploit different instrumental variables, respectively. In the first approach, the instrument is assumed to only affect the true dependent variable but not the misreporting probabilities. The second approach uses an instrument that only affects misreporting probabilities monotonically but does not influence the true dependent variable. These approaches neither impose distributional assumptions over unobserved disturbances nor assume parametric models for the misreporting process. The proposed approaches are used to study educational attainment using National Longitudinal Surveys from 1976.

Work in Progress

Optimizing Experimental Site Selection for External Validity: Theory and an Application to Mobile Money in South Asia (with Michael Gechter, Keisuke Hirano, Jean Lee, Mahreen Mahmud, Jonathan Morduch, Saravana Ravindran, Abu Shonchoy)

Abstract: A social experiment is typically intended to inform policy decisions for contexts beyond the place and time it is implemented; it is intended to have external validity. In this paper we consider the problem of where to locate a small set of experiments in order to maximize the effectiveness of a derived statistical policy recommendation intended for a much larger set of locations. In our application, we choose six migration corridors from thousands of candidates across South Asia on which to experimentally evaluate a program teaching migrants to send remittances via mobile money, with the goal of deriving policy recommendations for all the candidate sites. We adopt a quasi-Bayesian approach to this design problem by developing a prior specification for the joint distribution of site level average treatment effects based on a microeconomic structural model for migrant remittance decisions and additionally, build in the possibility that there are other sources of heterogeneity across sites that are not captured by the structural model. In ongoing work, we run experiments in the sites selected in this way, and, within our set of chosen locations, evaluate the performance of our methodology in determining the relative informativeness of each site.

Teaching Experience

Graduate Teaching Assistant for undergraduate courses in microeconomics (Fall 2017-Fall 2018).

Graduate Teaching Assistant for PhD (Spring 2019) and Masters (Fall 2019, Spring 2020, Fall 2020, Fall 2021, Spring 2022) courses in econometrics.

Work Experience

Research Assistant for Prof. Keisuke Hirano, Pennsylvania State University	Summer 2020
Research Assistant, Delhi School of Economics	June 2016 - June 2017
Risk Analyst, Credit Risk Oversight, American Express India Pvt. Ltd	June 2015 - May 2016

Languages and Skills

Computer: Julia, Matlab, Stata, R.

Languages: Bengali (native), English (fluent), Hindi (conversational)

References

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