

Ridhima Sodhi

Data Science, Economics & Policy Professional

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INTRODUCTION

Policy professional with ~10 years of experience working and collaborating with organizations globally. Examples include the Clinton Foundation, New York University, USAID, University of Michigan, and USPTO.

Over the past few years, I have advised clients on topics such as programmatic disease management, survey methodology, health-care spending, trade agreements, workforce planning, technological innovation, credit risk, and recidivism.

I also provide training in applied data-science methods to employees in both academic and private organizations. Specific audience examples include employees in major international think-tanks (e.g. USDA), state governments(e.g. New York, Illinois), central government bodies(e.g. US Census Bureau, India's NITI Aayog), and mission-driven organizations.

I'm associated with multiple NGOs/groups for pro-bono research, advocacy & fundraising, please contact for details and collaborations.

TECHNICAL PROFICIENCY

Tools: R-Studio, Python, STATA, SAS, GAMS, SQL, Office (Excel, VBA), ArcGIS, GitHub

Methods: Econometrics, Impact Evaluation, Topic Modeling (RegEx), Machine Learning, Spatial Analysis, Survey Methods

WORK EXPERIENCE (*selected*)

Independent Consultant, TB Programs, Clinton Health Access Initiative July 2020 - present

I'm leading the quantitative operations of TB programs under Project JEET, in India. This involves understanding & providing strategic support to patient & provider management in TB care, running independent/collaborative research analysis, and developing workforce capacity. Selected projects include:

- Primary Research, TB Patients: Managed the running of a nation-wide survey spanning 2200+ patients across 8 urban cities. Work streams included supporting questionnaire design, sampling, field staff training, validation, and post survey analysis. The objective of the survey is to understand differential patient profiles, and how these relates with pre and post diagnosis management of Tuberculosis. Some of the ongoing findings of the survey include:
 - impact of socio-economic background on adherence/treatment outcomes
 - incidence, prevalence & management of active and passive side effects
 - identifying geographies/patient profiles with specific need for financial/medical support; including Covid impact
- Data Visualization M&E tools: Created automated RMD (R markdown) tools to track patient & provider operations, uncover useful insights, and guide strategic decisions.
 - Provider Level: The tool tracks ongoing field operations and correlates them with provider performance in terms of notifications and service usage.
 - Patient Level: The tool tracks the frequency and speed of patient counselings, and correlates individual treatment coordinator efforts with treatment outcomes
- Capacity Development Trainings: R Studio training for data analysts across JEET programs, spread over 6 weeks
- Manuscript work describing the economics of patient & provider management in TB (currently underway)

Advisor, Economics and Data Science, Infinite Sum Modeling (Seattle) Jan 2017 - present

Provide support to ongoing research projects, along with development of training programs. Few examples:

- Research (initial stages): Analyzing the impact of COVID-19 on migrant and informal labor clusters globally
- Training: Provided training in advanced data-science methods to middle and senior level professionals from government (e.g. NITI Aayog), academia (e.g. Delhi University, FMS) and industry. The two-week training was part of a larger ongoing initiative for National Institute of Micro, Small and Medium Enterprises, India

Research Fellow, McKinsey (NCR, India) April 2019- June 2020

Led a 60+ country study on understanding the effects of advances in technology on employment within the Future of Work (FoW) activity stream. Responsible for the whole model-infrastructure which includes data collation, econometric modeling, and deep-country/sector analysis

Independent Consultative Work, International Trading Economics (Mauritius)

Feb 2020 - Apr 2020

Simulated the effect of multiple trade-agreement scenarios on revenue, welfare, and other related factors to inform an ongoing FTA (free trade agreement) negotiation. The study was done at the level of detailed UN (HS) product classification, and utilized a combination of non-linear methods. Project utilized GAMS (General Algebraic Modeling Language) and R Studio for running analysis.

Associate Research Scientist, New York University

May 2017- Dec 2018

Provided support to various research activities, teaching, and government-sponsored projects in the area of public policy, economics and innovation

Research: Analyzed the links between federal funding, collaborative network structures, and the role of gender on transformative/disruptive innovation. Research supported work for the White House, NIH, NSF, and others. Examples:

- Examined the effect of organizational factors on subsequent innovative activity, measured by patents
- Analyzed the factors influencing “time to disruptive innovation” using survival analysis (Hazard, Kaplan Meir)

Consulting: Managed projects for US government (USPTO), private-collaborators, and university partners (NYU Vice-Provost Office; Institute for Research on Innovation & Science, University of Michigan, White House) in the area of planning and predicting research funding, trends in technological innovation, and other things

- Developed a unique data-driven, visualization tool to simplify research planning by comparing the latest funded areas (topics) from different perspectives, such as university affiliation, expenditure and PI information

Education

- Coleridge Initiative, Executive Education Program (Python): all-round support for the development and running of a unique, data-science+policy program targeted towards state & federal government employees
- Graduate Teaching: Provided support for teaching the newly curated Applied Data Analytics for Public Policy course for Masters' level students studying policy at NYU Wagner School of Public Policy. Topics included Machine Learning, Topic Modeling, Data Visualization, and Data Security

Research Assistant, Palladium International

June 2016-Aug 2016

Conducted research for the Health Policy Plus (HP+) project (funded by USAID and PEPFAR) and provided support to various Health Financing activities currently underway at global, national and subnational levels. Selected Projects:

- Guatemala Health Financing: Leveraged national survey data to analyze movement in catastrophic health expenditures (CHE) under various thresholds and definitions between 2006-2014
- HIV Financing: Analyzed the cost of ART delivery in 97 countries with the objective of understanding differences between uniform and differentiated care models to ensure cost-efficacy. The study was presented at the 2016 International AIDS conference in South Africa
- Family Planning: Leveraged DHS data to analyze unmet demand for contraceptive care in Latin American countries

Independent Consultant, Infinite Sum Modeling (USDA Study)

May 2016 - July 2016

Estimated government's support through input (fertilizer subsidy and minimum support pricing) towards agriculture in India for 2001-2015. Study included but was not limited to evaluating the Public Distribution System in India and researching about the market-Harvest Prices for various crops and fertilizers.

Assistant Manager, Barclays

Feb 2013-Jul 2015

Led projects in Credit Risk and Fraud strategy teams and built a host of econometric models on SAS and VBA. Examples:

- Built a multi-variate econometric model to reduce overall fraud coming from gambling transactions. The final model identified fraudulent customers and fraudulent transactions with an accuracy rate of 86% and 99%
- Built a dynamic dashboard reporting weekly fraudulent activity by multiple clusters such as industry and merchants
- Developed “loss given default” models to predict and plan for losses coming from currently charged off customers

Assistant Manager, IBM, India

May 2012-Jan 2013

Worked in the analytics/research division and supported different clients with data-driven analysis using a combination of structured and non-structured (text + voice) data. Advised clients in financial (insurance, banking) and technology sectors.

EDUCATION

MS Public Policy & Management, Carnegie Mellon University, H. John Heinz III College, United States

Dec 2016

MA Economics; Delhi School of Economics, India

July 2012

PUBLICATIONS and PANEL PAPERS (*links embedded where available*)

- “ Global Spending on Family Planning and Reproductive Health, 2018 ” (Journal, Center for International Relations and Politics, Institute of Politics and Strategy, Carnegie Mellon University)
- “ Money for Something: The Links between Research Funding and Innovation ” (IZA, 2018)
- “ Smart Street Sweeping in the City of Pittsburgh, PA ” (Panel Paper, APPAM, Washington DC, 2017)

Research Support:

- “ Family Planning in the Context of Latin America's Universal Health Coverage Agenda ” (Global Health: Science & Practice)
- “ Can differentiated care models solve the crisis in HIV treatment financing? Analysis of prospects for 38 countries in sub-Saharan Africa ” (Global Health: Science & Practice)

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