

I am an Applied Economist focusing on policy evaluations related to health, aging, and human capital in the US and India. My research has three broad focus areas. The first explores the impact of technologies like high-speed internet (Broadband) and the Green Revolution on health, welfare, human capital, and social security access. Secondly, I study the lasting effects of early life shocks on later health and intergenerational well-being. My third research agenda evaluates the effects of different educational policies on human capital. I employ advanced quantitative methods, including recent developments in difference-in-differences (DID) and multiple regression discontinuity design (MRDD), along with novel data, to address critical policy questions. I have received funding from the National Institute of Aging (NIA) and the Social Security Administration (SSA) in addition to other sources.

**Dissertation Chapters:**

My Job Market paper examines whether high-speed internet (broadband) technology affects the mental health of older adults (50+) in the US. Using a staggered rollout of broadband and individual panel data at the census tract level, I exploit spatial, temporal, and individual-level variations. I employ the latest DID estimators for the dynamic treatment effect. I find that the broadband rollout significantly improves mental health among older adults (decline in depression symptoms by 5.2%). I find evidence of novel mechanisms like an increase in social connectedness and a decline in social isolation. Heterogeneous effects by race, gender, and geography highlight benefits for women and older adults from rural areas. Improvement in health literacy and technological efficiency (telehealth) in nearby hospitals also partly drive these results. With recent massive public investments of over \$65 Billion in broadband infrastructure, these results carry significant policy implications for broadband policies and emphasize the potential benefits for older adults.

In the second chapter, I examine whether early-life exposure to Green Revolution (GR) technology impacts later-life aging-related outcomes in India. GR is arguably the single most significant shock to agricultural productivity gains in developing countries and one of the most significant technological innovations of the 20th century. However, its long-term health impacts are not well understood. I leverage the largest aging data and employ a generalized DID approach, exploiting temporal and spatial variation in adopting GR crops. I find the positive and significant effects for the low castes in education and later life cognitive health. However, we also find an increase in chronic conditions and metabolic syndrome among men and urban areas, supporting the evidence that dietary shifts might explain adverse physical health effects.

I extend the broadband-related research to examine broadband's impact on Social Security Disability Insurance (SSDI) enrollment for older adults in the US. This research holds pivotal policy significance in line with the Social Security Administration's (SSA) service efficiency mandate. I use the staggered broadband rollout and restricted individual panel data from the Health and Retirement Study (HRS) and exploit spatial, temporal, and individual-level variations in broadband availability. Employing the latest DID estimator, I find a 6% increase in the likelihood of receiving SSDI benefits among older adults after high-speed broadband introduction, with more benefits for rural areas.

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**Other Ongoing Projects:**

- *Technological Innovations and Social Welfare:* Under this research theme, I investigate the transformative role of broadband technology in accessing Social Security disability insurance during the events of SSA office closures. I aim to unravel the intricate dynamics between broadband technological advancements, administrative changes (SSA office closure), and their consequences for marginalized communities.
- *Labor Market Disparities:* I have a paper (revise and resubmit) with Jeremy Foltz, where we evaluate salary differentials between foreign and US-born academic faculty, probing potential sources of wage inequality in academia with direct policy implications.
- *Education and Human Capital:* I evaluate the impact of a teacher hiring policy on student test scores using the advanced multiple MRDD methods. Secondly, I have a paper (under review) that estimates the early life exposure to the Great Depression in the US on later-life mortality using unique bank deposit data. Further, I explore the effects of early-life exposure to the Green Revolution on intergenerational human capital development. Finally, I analyze the unexplored spillover effects of bicycle policies on girls' enrollment in schools, shedding light on how policy interventions can influence educational access and the gender gap.

**Future Research:**

In my future trajectory, I am excited to use increasingly available big data from the US and India with the recent innovations in DID, RDD, and machine learning as they provide valuable insight for better policy recommendations. Using these tools, I plan to expand my research to explore the effects of various technologies on other aspects of health, access to social security insurance and finance, social equity, and intergenerational transmission.

- *Technological Innovations and Social Welfare:* I will extend my current work on broadband to understand its potential to reduce informational friction and facilitate access to financial resources for vulnerable populations in the US. I plan to evaluate technology's role in shaping overall welfare and equity.
- *Health and Technology:* I expect to extend the current work on technology to focus on mental health-related outcomes for younger and older populations since mental health is a relatively understudied research area in economics and public policy but has implications for comprehensive well-being.
- *Early-life Shocks and Long-term Health Outcomes:* I expect to continue research on the enduring effects of early-life shocks on subsequent life trajectories using big data on the aging population from the US and India, which I already have access to. I am working with some faculties to understand the aging outcomes in developing countries and plan to apply for an NIA grant in the future. I contribute to this work by analyzing data to understand the gender and caste disparities in cognitive functions.