Parth Chawla

Department of Agricultural and Resource Economics
University of California, Davis
One Shields Avenue, Davis, CA 95616

chawla@ucdavis.edu
parthchawla.com

RESEARCH FIELDS

Economic Development, Firm Productivity and Resilience, Migration, Applied Machine Learning.

ACADEMIC EXPERIENCE

2021 – 2026 Ph.D. in Agricultural and Resource Economics, University of California, Davis

2018 – 2019 M.Sc. in Economics, Trinity College Dublin

2014 – 2017 B.Sc. in Physics, Royal Holloway, University of London

WORKING PAPERS

Chawla, P. 2025. "Can Human Capital Improve Firm Resilience in Financial Crises? Evidence from the 1997 Indonesian Crisis". Working paper. Available at SSRN.

Summary: Do returns to human capital rise during crises? This paper examines whether Indonesia's INPRES school construction program in the 1970s improved firm resilience during the 1997 Asian Financial Crisis. I use a diff-in-diff strategy combined with a shift-share instrument, exploiting variation in district-level INPRES intensity and the national share of fully treated cohorts in the working-age population. Results show that INPRES significantly improved post-crisis plant performance: each additional INPRES school per 1,000 children increased labor productivity and output by 2.8 and 3.5 percent, respectively. These gains were likely driven by INPRES-exposed plants benefiting from an abundant local supply of high-human capital production workers, which helped keep wages lower and allowed them to retain more educated workers during the crisis. I interpret this using a simple model of firm adjustment with heterogeneous worker skills.

Barriga-Cabanillas, O., **Chawla, P.**, Redaelli, S. and Yoshida, N. 2023. "Updating Poverty in Afghanistan Using the SWIFT-Plus Methodology". Policy Research Working Papers, 10616. World Bank, Washington, D.C.

Summary: This paper applies a machine learning-based survey-to-survey imputation method (SWIFT-plus) to estimate poverty in Afghanistan after the Taliban's return to power in August 2021. A model trained on the 2019/20 Expenditure and Labor Force Survey is used to predict household consumption in the 2023 Afghanistan Welfare Monitoring Survey. Results show that 48.3 percent of the population was poor as of April to June 2023, a 4 percentage point decline since 2020, driven by falling rural poverty while urban poverty remained stagnant.

SELECTED RESEARCH IN PROGRESS

"Predicting Mexico-to-US Migration with Machine Learning for Counterfactual Analysis," with J. Edward Taylor and Siyao Wang

Conferences: *AAEA & WAEA Joint Annual Meeting 2025*

Summary: Reliable tools to predict migration are increasingly important amid rising climate risks, conflict, demographic shifts, and economic instability. Machine learning models, particularly tree-based algorithms, can uncover complex, nonlinear relationships that conventional models often miss and can be used to simulate responses to shocks. However, migration datasets are often costly and time-consuming to collect, so there is a need for models that perform well using readily available data. We first train a LightGBM model on an ideal dataset, a panel tracking the employment

locations of 10,739 individuals from 1980 to 2007, and achieve high predictive accuracy. Using this as a benchmark, we then train a model on just four years of data, excluding migration histories. By adding publicly available weather variables, this restricted model approaches benchmark performance (within 0.1 F1 score). Finally, counterfactual shocks show that a 10% rise in temperature reduces migration by 13% the following year, a 10% increase in age lowers it by 17%, and a 10% drop in income by 18%.

"Firm Networks and Resilience to Shocks in Rural Markets," with Daniel Putnam and Jess Rudder

"Local Economic Impacts of Cash Transfers to Refugees and Asylum Seekers in Mexico, Mauritania, and Moldova," with Justin Kagin and J. Edward Taylor

PROFESSIONAL EXPERIENCE

2023 – Present Consultant, The World Bank, Washington, D.C.

- Consultant in the East Asia and Pacific Chief Economist's Office and previously with the Poverty and Equity Global Practice.
- Latest project: Report on firm productivity in the EAP region, analyzing the impact of skills, tradability, non-tariff measures (NTMs), digital intensity, and pandemic resilience on total factor productivity (TFP) and other firm outcomes. This analysis uses firm financial statement data, labor force surveys, input-output tables, trade data, and firm-level production function estimation (Ackerberg, Caves, and Frazer, 2015; Wooldridge, 2009).
- Past projects: Poverty projections in Afghanistan using machine learning models (paper below); Economic activity analysis in Afghanistan using nightlights data.

2023 – 2024 Graduate Student Researcher for Prof. J. Edward Taylor, UC Davis

- Projects: Local economy-wide impacts of protected areas in Africa (World Bank project); Local economy-wide impacts of cash transfers to refugees (UNHCR project)

2022 Research Intern, United Nations Development Programme, New York, NY

- Contributed to the 2021/22 UNDP Human Development Report by conducting data analysis and creating data visualizations to effectively communicate key findings.

2022 RA to Prof. Yusuf Neggers, Ford School of Public Policy, Univ. of Michigan

- Scraped millions of rows of publicly available administrative data using Python, utilizing AWS for automation and a MySQL database for storage.

2019 – 2021 Research Associate, Evidence for Policy Design, Harvard Kennedy School

- Executed two large-scale randomized control trials (RCTs) across three Indian states in collaboration with US-based economists, managing a field team of 15 members.
- Collaborated with government officials to align project objectives and designed survey questionnaires for over 1,000 officials.
- Built Python data pipelines to scrape and process over 50 million rows of public data from government websites and APIs.
- Conducted econometric analyses, produced data visualizations, and prepared reports.

2018 Economics Intern, Koan Advisory, Delhi, India

2018 Teaching Fellow, Ashoka University, Sonipat, India

SKILLS AND METHODS

Programming: Python (pandas, scikit-learn), R, Stata, SQL/MySQL

Tools and Platforms: Git, Unix, Markdown, R Shiny, AWS (EC2, RDS), SurveyCTO

Statistical Methods: Machine Learning (Linear/Logistic Regression, Random Forests, Gradient Boosting, LightGBM), Causal Inference (DiD, RDD, IV, PSM, Synthetic Control), Panel Data Econometrics

GRANTS, FELLOWSHIPS AND AWARDS

2025	UC Davis ARE Grad Travel Award
2024	Giannini Dissertation Fellowship ($21,500 stipend)
2024	Giannini Foundation Mini-Grant, $20,000 (with J. Edward Taylor)
2024	Henry A. Jastro Graduate Research Award, $3,000
2024	UC Davis ARE Summer Research Fellowship
2021 – 2024	UC Davis Nonresident Supplemental Tuition Fellowship
2021 – 2022	UC Davis Provost's Fellowship ($25,000 stipend)
2017	Royal Holloway Passport Award
2014	Royal Holloway International Excellence Scholarship (tuition waiver)

TEACHING EXPERIENCE

Main Instructor: Economic Development (UC Davis, 2024)

TA: Operations Research & Management Science, Economic Development, Econometric Methods, Agricultural Labor, Intermediate Microeconomics, Math & Statistics for Economics

BLOG ARTICLES

"Government Intervention in India and Taiwan Affects Global Rice Markets" (with Tzu-Hui Chen), Ag Data News (2022)

SERVICE

Referee: Journal of Agriculture and Food Research

Other: Grad School Application Mentor

LANGUAGES

English (Native/Bilingual), Hindi (Native/Bilingual), Korean (Beginner)