Shivani Chowdhry

PhD (Expected August '25), School of Economic, Political & Policy Sciences, University of Texas at Dallas
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SUMMARY

Final-year PhD candidate in Public Policy, specializing in Global Health Policy, Environmental Policy, and Statistical Modelling. Highly proficient in causal inference, machine learning, and statistical modeling to address complex data challenges. Expert in Python, R, SQL, & STATA, with 5-year experience in data analysis, research & writing. Effective project leader, communicator & data storyteller.

EDUCATION

University of Texas at Dallas, TX 2020-2025

- PhD (Expected August '25) in Public Policy & Political Economy (Health Policy, Environment Policy, Statistical Modelling)
- MS in Social Data Analytics and Research (STEM degree) May 2024
- Graduate Certificate in Spatial Data Science December 2024

Selected Coursework: Regression & Multivariate Analysis, Descriptive & Inferential Statistics, Research Methods, Causal Inference, Structural Equation & Multilevel Modeling, Python Programming, Data Collection, Data Visualization, ML for Socioeconomic & Geo. Data, Content Analysis using NLP, ML & Causal Inference, GIS Fundamentals, Spatial Data Science, Panel Data Econometrics

Delhi University & Jamia Milla Central University, Delhi, India – BA (Econ & Math), MA in Economics 2013, 2016

TECHNICAL SKILLS

Programming Languages: Python, R, SQL, STATA
Visualization Tools: Tableau, Power BI, ggplot2, Shiny, Plotly, Matplotlib, ArcGIS maps & dashboards
Data Integration & Management: MySQL, PostgreSQL, Tableau Prep
Tools & Software: Jupyter, RStudio, GitHub

WORK EXPERIENCE

The University of Texas at Dallas

Full Instructor, School of Economic, Political and Policy Sciences (EPPS) Aug. 2024 – Dec. 2024

- Taught undergraduate-level Statistics course: 'Methods of Quantitative Analysis in the Social and Policy Sciences'

Teaching & Research Assistant, School of EPPS Spring 2021, Spring 2024, Summer 2024, Spring 2025

Data Analyst & Graduate Administrative Assistant (Assessments Data Team), School of EPPS Aug. 2021 – Dec. 2023

- Led and trained a team of four Teaching Assistants to manage and organize course assessment data entry system
- Streamlined processes, developed documentation and workflows to improve efficiency in data handling and reporting

International Growth Centre (IGC), New Delhi Office, India June 2016 – Sept. 2020

Deputy Editor and Economics Content Editor, 'Ideas for India' policy blog; funded by UK Gov. & London School of Economics

- Edited 600+ technical academic research studies for Indian policymakers and a broader audience of the blog
- Created written content, social media posts, podcasts to disseminate research findings; organized research conferences and panel discussions to support important policy discussions

SELECTED DATA SCIENCE PROJECTS

PhD Dissertation Research on Environmental Determinants of Health Aug. 2023 – Aug. 2025

- Dissertation: "*From Smoke to Stress: Causal Impact of Solid Fuel Use and Ambient Air Pollution on Mental Health in India*". Presented at multiple conferences; Found long-term adverse impacts of environmental pollutants on mental health outcomes
- Employed advanced causal inference and visualization techniques: Instrumental Variables, Panel Fixed Effects Models, Causal Mediation Analysis, and Multiple Imputation (MICE); Cleaned and merged multiple longitudinal datasets

Python Application for Dynamic Personal Air Pollution Exposure Assessment Aug. – Dec. 2022

- Developed a Python-based app to dynamically calculate personal real-time air pollution exposure using smartwatch GPS trajectory data and PM2.5 satellite data; Focused on scalability, granular data analysis, & extended format compatibility
- Implemented spatiotemporal data analysis to assess air quality impacts on health, and created visualizations overlaying GPS tracks with heatmaps for intuitive personalized pollution exposure representation

Hierarchical Clustering Analysis of Texas Counties for Socioeconomic and Cultural Analysis Jan. – May 2023

- Conducted hierarchical clustering analysis (ML) under spatial constraints to identify homogeneous regions across Texas based on cultural, political, socioeconomic, and demographic characteristics
- Optimized cluster homogeneity by tuning the mixing α-parameter; visualized clustering results using maps & dendrograms, highlighting distinct regional profiles across TX counties

Media Discourse and Public Sentiment Analysis: NLP and Text Mining (Multiple Projects)

- Analyzed public attitudes toward COVID-19 vaccines using Twitter & news articles, employing text mining, NLP, network analysis to reveal shifts in discourse; Implemented analysis of the impact of YouTube videos on climate change sentiment