

Rishabh Tyagi

Doctoral Researcher in Labor Demography & Data Science

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I am a doctoral researcher with problem-solving and critical thinking skills with a data-driven approach to sample surveys and big datasets (Full population administrative datasets) to generate analytics, problem-solving, and policy recommendations.

RESEARCH INTERESTS

Labor Economics, Family Demography, Population Health, Social Inequalities, Data Science & Machine learning

AREAS OF EXPERTISE

- Analytical Thinking
- Creative Thinking
- Project Management
- AI & Big Data
- Data Processing
- Data Visualization
- Causal Inference
- Machine Learning
- Statistical Analysis (STATA, R)

EDUCATION

University of Oslo, Oslo, Norway

Affiliated PhD Student in the Department of Sociology & Human Geography.

2022- Present

International Institute for Population Sciences, Mumbai, India

M.Phil. Biostatistics and Demography - CGPA 7.94 (Silver Medal)

2019–2020

M.Sc. Biostatistics and Demography

2017–2019

Student Member, The Institute & Faculty of Actuaries (IFOA), UK

2015–2017

Modules Passed: CT1 - Financial Mathematics; CT3 - Probability and Mathematical Statistics & CT5 - Contingencies

University of Delhi, New Delhi, India

B.Sc. (Honors) Mathematics

2014-2017

PROFESSIONAL EXPERIENCE

Max Planck Institute for Demographic Research & Center for Fertility & Health, Oslo

Doctoral Researcher (Labor Demography)

May 2021–Now (Expected Thesis Submission (March 2025))

- **PhD Thesis:** The disparate effects of Employment uncertainty on Life Course Outcomes.

Thesis Advisors: Prof. Vegard Skirbekk, Dr Christian Dudel, Prof. Alexi Gugushvili & Prof. Mikko Myrskylä

- Data analysis using Norwegian Register (Administrative) data, German Socio-economic Panel data, and LASI data for my research projects.
- **PhD External Representative** (2021-2023), MPI for Demographic Research.

International Max Planck Research School- Population Health & Data Science (IMPRS-PHDS), MPIDR

Core Student & Researcher

November 2021–Now

- Causal Inference, Statistical Demography & Multistate modelling
- Machine Learning and Benchmarking methods
- Scientific presentation of research in the Annual academy

ICMR NIMS (National Institute of Medical Statistics)

Project Technical Officer

New Delhi, India

Oct 2020–Mar 2021

- Project title: "Impact of COVID-19 on Maternal and Child Health Services through the public health system in India."
- Active collaboration with scientists of ICMR and enhanced my ability to develop feasible research questions and design tools for quantitative research.
- Designed the statistical analysis plan, analysed the Health Management Information System (HMIS) data, and wrote the project report.

TRAINING

Demographic Methods, MPIDR	2021
Population Health, MPIDR	2021
Advanced Methods for Causal Inference with Observational Data, MPIDR	2021
Topics in Digital and Computational Demography, MPIDR	2021
Statistical Demography, MPIDR	2024
Summer School in Computational Social Sciences, ODISSEI	2024

SKILLS

- **Programming skills:** STATA, R, Python, Microsoft Excel
- **Statistical Methods:** Causal Inference, Panel regression methods & Event History Analysis
- **Data Handling:** Administrative data, Sample surveys, Public-sourced JSON data
- **Soft skills:** Presentation skills, Communication, Project management

PUBLISHED PAPERS

- Barman P, Pandey M, Bramhnakar M, **Tyagi R**, Rai B (2024). Associations Between Social Deprivation, Cognitive Health, and Depression among Older Adults in India: Evidence from the Longitudinal Aging Study in India (LASI): Global Social Welfare.
- Bramhankar, M., Pandey, M., & **Tyagi, R.** (2024). The Burden of Chronic Diseases with the Status of Family Medical History Among Older Adults in India. Journal of Prevention, 1-19.

WORKING PAPERS

- **Tyagi, R.**, Baranowska-Rataj, A., & Gugushvili, A. (2025). Adult children's unemployment and parental mental health in India: social and economic moderators (No. WP-2025-005). Max Planck Institute for Demographic Research, Rostock, Germany.
- **Tyagi, R.**, Eibich, P., & Skirbekk, V. (2024). Gender norms and partnership dissolution following involuntary job loss in Germany (No. WP-2024-027). Max Planck Institute for Demographic Research, Rostock, Germany.
- **Tyagi, R.** (2024). Employment uncertainty and reproductive decisions in Norway: a register-based study based on plant closures (No. WP-2024-026). Max Planck Institute for Demographic Research, Rostock, Germany.
- **Tyagi, R.**, Dwivedi, L. K., & Sanzgiri, A. (2020). Estimation of Effective Reproduction Numbers for COVID-19 Using Real-Time Bayesian Method for India and its States. Paper 13: IIPS Analytical Series on COVID-19.
- Bramhankar, M., **Tyagi, R.**, Pandey, M & M, Kishore. (2020). COVID 19: Real-time Forecasts of confirmed cases, active cases, and health infrastructure requirements for India and its states using the ARIMA model. Paper 16: IIPS Analytical Series on COVID-19.

RESEARCH FUNDING & GRANTS

- MPG Support for Doctoral Research, Associated with Max Planck Institute for Demographic Research & Center for Fertility & Health, Oslo, 2021
- Accommodation support and Dutch register data access support for Summer School in Computational Social Sciences from ODISSEI, Erasmus University, Rotterdam, 2024
- Government of India (Ministry of Health and Family Welfare) Fellowship awarded for pursuing an M.Phil. in Biostatistics and Demography at the International Institute for Population Sciences, 2019
- Government of India (Ministry of Health and Family Welfare) Fellowship awarded for pursuing an M.Sc. in Biostatistics and Demography at the International Institute for Population Sciences, 2017

PROFESSIONAL SERVICES AND OUTREACH

- Peer reviews for Academic Journals such as PLOS ONE, Advances in Life Course Research
- Member of the European Association of Population Studies, Population Association of America & German Society for Demography (DGD)
- PhD External Representative (2021-2023), MPI for Demographic Research.

CONFERENCE PRESENTATIONS

Gender norms, time use, and partnership dissolution following involuntary job loss.

1. European Population Conference 2022, University of Groningen (Netherlands), July 2022 [Oral Presentation]
2. 22nd Nordic Demographic Symposium 2022, Oslo (Norway), June 2022 [Oral Presentation]

Employment uncertainty and reproductive decisions in Norway: A register-based study based on plant closures.

1. 88th Annual Meeting of the Population Association of America 2022, New Orleans, USA, April 2023 [Oral Presentation]
2. RC28 Paris 2023, Education and Social Inequality across the Life Course, 24-26 May 2023 Paris (France) [Oral Presentation]

How Male or Female partner's exposure to Employment Uncertainty through Plant Closure affects their Fertility: A Couple-Level Analysis through Norwegian Register Data.

1. DGD Annual Meeting 2024, University of Hamburg, March 2024 [Oral Presentation]
2. European Population Conference 2024, University of Edinburgh (Scotland, UK), June 2024 [Oral Presentation]

Estimation of effective reproduction numbers for COVID-19 using the Bayesian method for India and its States.

29th IUSSP International Population Conference 2021, Virtual, December 2021 [Oral Presentation]

LANGUAGES

Hindi (native), English (advanced), German (basic).