

# Louise Bernard

Senior Data Scientist | Causal Inference & Field Experiments

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## PROFILE

Senior data scientist and economist specialising in randomised field trials and quasi-experimental causal inference, at industry scale.

## METHODS

A/B testing & RCTs, quasi-experimental design, causal inference, panel & spatial econometrics.

## TOOLS

R, Python, SQL, Stata, Git.

## LANGUAGES

French (native), English (fluent), Mandarin & German (basic).

## EDUCATION

### PhD in Urban Economics

*London School of Economics*

### MSc Economics, Real Estate & Finance

*London School of Economics*

### Master in Public Administration

*London School of Economics*

### BA in Political Science

*Sciences Po Paris*

## SELECTED AFFILIATIONS

Cabinet Office Evaluation & Trial Advice Panel (ETAP) member — providing technical advice on evaluation methods to UK government departments.

## EXPERIENCE

### Senior Data Scientist

Jan 2025 – Present

*London, UK*

#### *Centre for Net Zero (Octopus Energy Group)*

- Lead trial design and analysis across flexibility, EV charging, and low-carbon technology programmes, in partnership with Octopus Energy teams who implement the trials.
- Co-author of a dynamic-pricing field experiment with ~110k EV charging users; findings informed Octopus Energy's launch of an equivalent product in the French market.
- Author CNZ policy briefs and technical reports targeted at UK system operators and regulators (NESO, Ofgem, DESNZ) on demand-side flexibility evidence.

### Data Scientist

Jul 2023 – Dec 2024

*London, UK*

#### *Centre for Net Zero (Octopus Energy Group)*

- Analysed the Demand Flexibility Service (implemented by Octopus Energy) — one of the largest domestic demand flexibility programmes to date — covering 2.6M customers and tens of millions of half-hourly smart meter observations.
- Designed and analysed quasi-experimental and randomised trials on heat pumps and time-of-use tariffs, using staggered-adoption difference-in-differences on multi-year half-hourly smart meter panels.
- Authored pre-analysis plan and power-calculation templates now used across the analyst team; built reusable R analysis pipelines for ongoing trial evaluations.

### Consultant

Jul 2022 – Jul 2023

*London, UK*

#### *World Bank — Global Facility for Disaster Reduction & Recovery (GFDRR)*

- Co-authored research on land scarcity, urbanisation, and flood risk using causal inference and spatial econometric methods on large geospatial and administrative datasets; awarded the World Bank Sustainable Development Fellowship.

## SELECTED WORKING PAPERS

**Decarbonizing Heat: The Impact of Heat Pumps and a Time-of-Use Heat Pump Tariff on Energy Demand** — with Andy Hackett, Robert D. Metcalfe, and Andrew Schein; [NBER WP No. 33036](#)

**The Impact of Dynamic Prices on Electric Vehicle Public Charging Demand: Evidence from a Nationwide Natural Field Experiment** — with Andy Hackett, Robert D. Metcalfe, Luca Panzone, and Andrew Schein; [NBER WP No. 34600](#)

**Nowhere else to go? Urbanisation and Flood Risks in China: The Role of Land Scarcity** — with Paolo Avner, Jun Rentschler, Capucine Riom; [2023](#)

**The Impact of Floods on Retrospective Voting in England** — with Allan Beltran and Karlygash Kuralbayeva; [2021](#)

## TEACHING

- **Applied GIS** — LSE, MSc in Geographic Data Science; spatial workflows and applied ML methods (regularised regression, tree-based models).
- **Spatial Econometrics** — LSE, MSc level.
- **Applied Econometrics** — City, University of London, undergraduate.