
Quasi-Experimental Methods for Competition and Innovation

Competition and Innovation Summer School 2026

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Course description

Empirical research in competition and innovation often relies on policy changes, regulatory interventions, eligibility rules, or other quasi-experimental variation to identify causal effects. This research workshop provides a short introduction to a set of causal inference tools particularly useful in these settings: matching and weighting methods, Difference-in-Differences, Synthetic Control methods, and Regression Discontinuity Designs.

The emphasis is on research design rather than implementation: when a method can provide a credible counterfactual, which identifying assumptions it requires, how these assumptions can be assessed, and which threats to identification are particularly relevant when studying firms, markets, innovation, and competition. The methodological discussion will be illustrated throughout with three recent applications in competition and innovation economics.

Learning objectives

By the end of the session, participants should be able to:

- identify which quasi-experimental design is appropriate for a given empirical setting;
- understand the main assumptions, diagnostics, strengths, and limitations of each approach.

Outline

1. From an economic question to a credible counterfactual

- Selection into treatment; conditional independence and common support; matching, propensity-score weighting, and coarsened exact matching; balance and overlap as design diagnostics.

2. Difference-in-Differences for policy and regulatory interventions

- Canonical DiD and event studies; parallel trends; treatment-effect heterogeneity and staggered adoption; brief discussion of spillovers and treatment intensity.

- *Paper illustration:* Pape, L. D., & Rossi, M. (2026). Is competition only one click away? the digital markets act's impact on Google maps. *Marketing Science*, 45(3), 596-613.

3. Synthetic Control Methods

- Constructing the counterfactual; donor-pool choice and pre-treatment fit; placebo and robustness exercises; when Synthetic Control may be preferable to a conventional DiD design
- *Paper illustration:* Hosken, D. S., Olson, L. M., & Smith, L. K. (2018). Do retail mergers affect competition? Evidence from grocery retailing. *Journal of Economics & Management Strategy*, 27(1), 3-22.

4. Regression Discontinuity Designs

- Sharp and fuzzy designs; bandwidth and functional-form choices; manipulation and continuity tests; local interpretation and external validity.
- *Paper illustration:* Santoleri, P., Mina, A., Di Minin, A., & Martelli, I. (2024). The causal effects of R&D grants: Evidence from a regression discontinuity. *Review of Economics and Statistics*, 106(6), 1495-1510.

Prerequisites

Participants should be familiar with standard regression analysis and basic concepts of causal identification. No prior knowledge of the specific methods and no statistical software are required.