Causality in Business Research

Coordinator: Jonne Guyt

Period: February/March 2024

Proposed Dates and Times:
- Monday, February 5, 13:00 – 16:30 – REC M0.01
- Monday, February 12, 13:00 – 16:30 – REC M0.01
- Thursday, February 15, 13:00 – 16:30 – REC M0.02
- Monday, February 19, 13:00 – 16:30 – REC M0.01
- Thursday, February 22, 13:00 – 16:30 – REC E0.07
- Monday, February 26, 13:00 – 16:30 – REC M0.01
- Thursday, February 29, 13:00 – 16:30 – REC E0.04
- Monday, March 4, 14:00 – 17:30 – REC MS.02
- Friday, March 8, 09:00 – 12:30 – REC M1.03
- Monday, March 11, 13:00 – 16:30 – REC MS.02

Learning goals:
- Develop a deep understanding of the role of causality in academic research and its significance for policymaking and decision-making.
- Gain proficiency in the theoretical requirements for identifying causal effects in research.
- Differentiate between experimental and observational data, understanding their respective advantages and limitations in causal inference.
- Recognize the limitations and address common challenges in mediation analysis when examining causal relationships.
- Identify endogeneity issues in research and explore advanced methods for addressing them.
- Understand when and why specific research designs and methods are required to establish plausible claims of causality.
- Foster critical thinking skills to evaluate and critique research studies with an emphasis on causal inference.

Teaching method and contact hours: Lectures, tutorials, discussions, and student presentations.

Assessment: Presentation & Essay

Facilities needed: Room with projector

Course summary: Most questions in academic research are causal in nature, as an understanding of causal effects is of great importance to policymakers, firms, and academics alike. This course will cover key components of causal inference and introduce PhD students to a conceptual discussion of causality and different research designs and methods for establishing causality. The focus will be on assessing when and why certain research designs and methods are required to achieve plausible claims of causality. It will also cover commonly observed challenges in causal inference, such as causality in mediation analysis, endogeneity, confounding, and selection bias, as well as advanced topics, such as instrumental variables and control functions. Throughout the course, students will learn how to apply the content conceptually and empirically. The course is intended for PhD students working with experimental as well as observational data.

Overview of Sessions
(preliminary and subject to change)

Topics discussed:
- The role of causality in scientific research
- Theoretical requirements for identification of causal effects
- Experimental vs. observational data
- The pitfalls of mediation analysis
- How to deal with endogeneity: instrumental variables, control functions, copulas & more
- Canonical research designs: Difference-in-Differences (and extensions), Event studies, Synthetic controls, Regression Discontinuity
- Going beyond OLS:
  - Causality in binary and multiple discrete choice models
  - Causality & Machine Learning