Faculty of Business and Economics
Chair of Quantitative Methods, esp. Econometrics (Prof. Dr. Cygan-Rehm)

Module "Applied Econometrics"

Winter semester 2024/25

Outline

The ability to understand empirical research and conduct adequate data analysis is nowadays the central skill within business and economics. This course deals with the basic methods of modern applied econometrics and offers an intuitive introduction to causal analysis. The lecture and the accompanying tutorials follow an example-driven approach, i.e., all methods and concepts are illustrated with examples from the economics and business context. To intensify the learning success and to foster students' data literacy and programming skills, the course devotes much attention to hands-on exercises with real data using the statistical software Stata.

The outline of the course follows closely the textbook "Causal Inference. The Mixtape" by Scott Cunningham, which is publically available online. For further recommended literature, see below. The focus on the following topics:

I.   Multiple regression review
II.   Potential Outcomes Causal Model
III.   Directed Acyclic Graphs
IV.   Instrumental Variables
V.   Regression Discontinuity
VI.   Panel Data
VII.   Difference-in-Differences

At the end of the course, students are able to propose suitable empirical designs to study concrete research questions. They are also familiar with the central assumptions and challenges of the applied methods and can critically assess the quality of empirical studies. Along the way, the course teaches how to conduct own empirical research project and run a relevant data analysis with Stata. The course is a good basis for an empirical Bachelor thesis.

Instructor

Prof. Dr. Kamila Cygan-Rehm
Office hours: Tuesday, 1:00 – 2:30 pm, HÜL 308

Modules

BA-WW-ERG-3801 D-WW-ERG-3801: Applied Econometrics

Schedule

Lecture: Tuesday, 4:40 – 6:10 pm, HÜL S390, Beginn on October 15, 2024.
Exercises (PC): Wednesday, 9:20 – 10:50 am, Room SCH B247, Begin on October 24, 2024.
Tutorials: in January (time and room to be announced via email)
Exam: During the regular examination period, the exact date will be timely communicated.

Requirements

Required are basic knowledge of microeconomics, statistics, and econometrics. The course language is English. Participants should have a sufficient command of English to actively participate in classes (i.e., level B2 of the Common European Framework of Reference for Languages).

Resources:

The lecture slides and problem sets for the exercises and tutorials will be provided via OPAL. For access, please log into OPAL via your TU Dresden account and register for this course. The number of participants is limited to 25 students. Hands-on data exercises using Stata will be conducted within the regular exercises in a PC Pool.

The lecture closely follows the following textbook:

Cunningham, Scott. Causal inference: The mixtape. Yale University Press, 2021. Available online at
https://mixtape.scunning.com/

Further recommended textbooks are:

Angrist, J. D., & Pischke, J. S. (2015). Mastering'metrics: The Path from Cause to Effect. Princeton University Press.

Cameron, A. C., & Trivedi, P. K. (2022). Microeconometrics Using Stata, Second Edition. Stata Press. Volume I: Cross-Sectional and Panel Regression Methods

Huntington-Klein, N. (2021). The Effect: An Introduction to Research Design and Causality. Chapman and Hall/CRC. Available online at https://theeffectbook.net

Wooldridge, J. M. (2015). Introductory econometrics: A modern approach. Cengage Learning.

Assessment

Written exam, duration 90 minutes. The problem set will be in English. The solutions can be submitted either in English or German.