A cordial invitation to the opening talk of the
Brown Bag Seminar
Recent Developments in Data Science:

A complete framework for model-free difference-in-differences

By
Prof. Dr. Daniel J. Henderson

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https://www.wiwi.uni-passau.de/csm/brown-bag-seminar-rdds

Abstract:

We propose a complete framework for model-free difference-in-differences analysis with covariates (where model-free means data-driven, including nonparametric estimation and testing, variable and scale choice). Following the natural steps in practice, we start with searching for the preferred data setup by simultaneously choosing confounders and a scale of the outcome variable along identification conditions. The treatment effects themselves are estimated in two steps: first, the heterogeneous effects stratified along the confounders, then the average treatment effect(s) for the population(s) of interest. We suggest bootstrap procedures to calculate standard errors and p-values of significance tests. We study the asymptotic statistics as well as the finite sample behavior of all our methods. They are applied then to study the impact of the Deferred Action for Childhood Arrivals program on human capital responses of non-citizen immigrants. We find that past results are similar regarding (albeit underestimating) the positive impact on school attendance (for individuals aged 14-18) and the positive impact on high school completion, but fail to identify the negative impact of DACA on school attendance for college aged individuals. Practical issues such as bandwidth selection, incorporating sample weights, dealing with discrete data and implementation are given in the supplementary material.s.

Speaker: Prof. Dr. Daniel J. Henderson

Daniel Henderson is a professor of economics and the J. Weldon and Delores Cole Faculty Fellow at the University of Alabama as well as a research fellow at IZA (Institute for the Study of Labor) in Bonn, Germany. He was formerly an associate and assistant professor of economics at the State University of New York at Binghamton. He received his Ph.D. in economics from the University of California, Riverside in 2003 and his B.A. in economics from the University of California, Davis in 1998.

His research focus is in applied nonparametric microeconometrics with an emphasis in the economics of education. He has also written papers examining the determinants of child health, economic growth and development, environmental economics, and international trade. His work has been published in journals such as *Computational Statistics and Data Analysis, Economic Journal, Economics of Education Review, European Economic Review, International Economic Review, Journal of Applied Econometrics, Journal of Business and Economic Statistics, Journal of Econometrics, Journal of Human Resources, Journal of the Royal Statistical Society, Oxford Bulletin of Economics and Statistics,* and *Review of Economics and Statistics*.

In addition to many subfields of economics, his work has been cited in the fields of accounting, archeology, education, engineering, environment, geography, geology, management, neuroscience, operations research, physical and life sciences, production and manufacturing, psychology, regional science, remote sensing, statistics, and transportation.