JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN

GGS Gießener Graduiertenzentrum Sozial-, Wirtschafts- und Rechtswissenschaften

Workshop: R – Causal Inference using Difference-in-Difference and Regression Discontinuity Designs

Organizational details

Instructor:	Dr. Tobias Keller
Date & Time:	25. und 26. Oktober 2018 von 09.00 bis 17.00 Uhr
Location:	Raum 4, Alte Universitätsbibliothek, Bismarckstr. 37, 35390 Gießen
ECTS:	2
Max. participants:	12

Objectives

Learn when and how to apply two important methods for causal inference: Difference-in-Difference (DID) Designs and Regression Discontinuity (RD) Designs. Learn how to implement these designs using the statistical software R.

Content and methods

Structure:

- The problem of causal inference in empirical research
- Identification strategies for causal effects
- The Difference-in-Difference Design
- Aside: Propensity Score Matching
- The Regression Discontinuity Design

Participants learn by examples and case studies.

Exercises make up about 40% of the course time. The exercises will be based on exemplary datasets that will be provided to the participants before the course.

Target group

Doctoral candidates or postdoctoral researchers doing empirical research using R or intending to. It is required that the participants have basic R knowledge and have made their first experiences in applying R in their research projects. In particular, the participants should be familiar with the following R concepts and packages:

- Using the Software R Studio
- dplyr: particularly the dplyr verbs select, arrange, filter
- ggplot2
- Linear regression using the function lm(), including the use of formulars, factors and interactions
- Working with lists and lists of data.frames: lapply, do.call, rbind

Participants will be expected to bring their own laptop computers with the following software installed:

- R, version 3.5 or higher, downloadable here: https://cran.r-project.org/
- R Studio 1.1.456 or higher (free Open Source Desktop edition), downloadable here: https://www.rstudio.com/products/rstudio/download/#download
- Please install the following packages:
    - install.packages(c("readstata13","dplyr","dplyr","MatchIt","rdrobust","rdrobust","rdlocrand","rddensity","rdmulti","rdpower",”locpol”))
- Your computer should have internet connection so that you can download and install additional libraries as required.

To gain the ECTS credit points participants will have to:

- Actively participate during the whole duration of the workshop.

Course language

English (German, if only German participants)

Please note: As this is not an English language course proficiency in English at the C1 level of competency is required.

Registration

By **October 18, 2018** via e-mail at info@ggs.uni-giessen.de.