IV Residential SUMMER SCHOOL

ECONOMETRICS FOR PROGRAM EVALUATION: THEORY AND PRACTICE USING STATA

Florence, 25 August - 1 September 2018

Providing effective evaluation of economic, social and medical programs has become an increasingly important requirement for both public and private institutions. This school seeks therefore, to provide participants with the requisite tools, both theoretical and applied, for the correct implementation of modern micro-econometric methods for implementing program evaluation using Stata. As such, the program has been developed to encompass both: standard statistical methods of program evaluation: regression-adjustment, matching, selection-models and difference-in-differences methodologies; and the more advanced econometric techniques: for example, instrumental variables, endogenous regression-adjustment and regression discontinuity design.

The school opens with an introductory one day course (Module A) to the statistical package Stata, during which participants will be provided with the necessary tools to enable them to use Stata independently and actively participate in the applied empirical Lab sessions during the course of the week. Module B (Introductory Econometrics) running from day two to four, offers participants the opportunity to acquire, or simply refresh, the econometric techniques required to follow and actively participate in the empirical sessions during the course of the week. Both Modules A and B are optionally, attendance will depend on the individual participant's background.

At the end of the school participants are expected to be able to master complex evaluation design by: identifying the type of data required in their specific policy framework; evaluating which specific econometric method is more appropriate for the analysis in hand; and finally extracting policy recommendations from the obtained results. Participants should leave the course being in a position to autonomously implement, with the aid of the Stata routines utilized during the sessions, the theories and methodologies discussed during the course of the school.

In common with TStat's course philosophy, each individual session is composed of both a theoretical component (in which the techniques and underlying principles behind them are explained), and an applied (hands-on) segment, during which participants have the opportunity to implement the techniques using real data under the watchful eye of the course tutor. Throughout the school, theoretical sessions are reinforced by case study examples, in which the course tutor discusses and highlights potential pitfalls and the advantages of individual techniques. Providing effective evaluation of economic, social and medical programs has become an increasingly important requirement for both public and private institutions. The Summer School seeks therefore to provide participants with the requisite tools, both theoretical and applied, for the correct implementation of modern micro-econometric methods for implementing program evaluation using Stata.

WORKSHOP CODE

I-SS10

DATE AND LOCATION

Florence, 25 Aug - 1 Sept. 2018
CISL Studium Center
Via Della Piazzola, 71
I-50123 Florence
http://www.centrostudi.cisl.it

COURSE REQUISITES

Introductory knowledge of econometrics and/or statistics

https://www.tstattraining.eu/training/econometrics-program-evaluation/

ECONOMETRICS FOR PROGRAM EVALUATION

TARGET AUDIENCE

Researchers and professionals working in public and private institutions needing to undertake econometric program evaluation analysis using micro data. Although these methodologies are commonly used to evaluate policy interventions in, for example, the labour market, investment activities of enterprises, education policy, regional development, etc., they can in fact be used across a variety of studies, such as public health sector evaluation, which aim to estimate the ex-post impact of a given intervention or project on specific targets.

PROGRAM

MODULE A INTRODUCTION TO STATA

SESSION I: INTRODUCTION GETTING STARTED

1. Stata's GUI
2. File types in Stata
3. Working interactively in Stata
4. Saving output: the log file
5. Interrupting Stata
6. Loading Stata databases
7. The Log Output File
8. Saving databases in Stata
9. Exiting the software

SESSION II: PRELIMINARY DATA ANALYSIS

1. A preliminary look at the data: *describe, summarize* commands
2. Abbreviations in Stata
3. Stata's syntax
4. Summary statistics
5. Statistical Tables: *table, tabstat* and *tabulate* commands

SESSION III: DATA MANAGEMENT

1. Renaming variables
2. Selecting or eliminating variables
3. The *count* command
4. *sort* command
5. Creating sub-groups: the prefix *by*
6. Creating new variables: generate
7. Operators in Stata
8. The command *assert*
9. Missing values in Stata
10. Modifying variables: *replace, recode*
11. Creating Labels: variable labels and value labels
12. Creating dummy variables

SESSION IV: IMPORTING DATA FROM SPREADSHEETS

1. *Import Excel* and *Export Excel* commands
2. The *insheet* and *outsheet* commands
3. Reading in Text Data Files
4. Issues to watch out for when importing data
   - Missing values
   - String variables
   - Date variables
5. Redefining missing values
6. *destring* command
7. *tostring* command
8. dealing wih "messy" strings

SESSION V: GRAPHICS A BRIEF INTRODUCTION

1. Stata's syntax for two way graphs
2. Saving and exporting graphs
3. Useful *graph* commands
4. Personalizing a graph
5. Stata's Graph Editor

APPENDIX A:

1. Useful to know

APPENDIX B: MORE ADVANCED ISSUES *(TIME PERMITTING)*

1. *do files*
2. Merging data bases
3. *e-class* and *r-class* variables
4. *collapse* command
5. *preserve* command
6. *restore* command

MODULE B INTRODUCTORY ECONOMETRICS

DAY 1: THE LINEAR REGRESSION MODEL

SESSION I: ORDINARY LEAST SQUARES (OLS) ESTIMATION

1. OLS Estimation in Stata

SESSION II: QUALITATIVE EXPLANATORY VARIABLES

1. OLS estimation in the presence of qualitative explanatory variables
2. Including factor variables in the estimation process

DAY 2: ENDOGENEITY AND INSTRUMENTAL VARIABLES ESTIMATORS

SESSION I: INSTRUMENTALS VARIABLES ESTIMATORS

1. Endogeneity and bias in OLS estimators
2. Instrumental variables and GMM estimators
3. Implementation in Stata

SESSION II: TESTS AND ROBUSTNESS

1. Testing for exogeneity
2. Tests of over-identifying restrictions
3. Testing for weak instruments
4. Tests and robustness in Stata

DAY 3: LIMITED DEPENDENT VARIABLE MODELS

SESSION I: BINARY DEPENDENT VARIABLE

1. Binary outcome models
2. Goodness of fit and specification tests
3. Implementation in Stata

SESSION II: CENSORED AND SELECTION MODELS

1. Tobit models
2. Selection models
3. Implementation in Stata

ECONOMETRICS FOR PROGRAM EVALUATION

MODULE C PROGRAM EVALUATION

DAY 1: ECONOMETRICS OF PROGRAM EVALUATION

SESSION I: INTRODUCTION TO THE ECONOMETRICS OF PROGRAM EVALUATION

1. Concept of conterfactual causality
2. Experimental and quasi-experimental settings
3. Non-random sampling: selection on observables and selection on unobservables
4. Definition of treatment effects: types of effects and potential outcome
5. Notation and working hypotheses: SUTVA, CIA and CMI

SESSION II: OVERVIEW OF THE METHODS

1. Available econometric methods: limits and advantages
2. Stata for effective program evaluation: user-written commands and the *teffects* package

SESSION III: LINEAR AND NON-LINEAR REGRESSION ADJUSTMENT

1. The control function regression approach
2. Non-linear models
3. Stata implementation with the commands *teffects ra* and *ivtreatreg*

DAY 2: MATCHING AND REWEIGHTING

SESSION I: MATCHING

1. The selection on observable setting
2. Identification conditions for Matching
3. Matching in practice: tests and sensitivity analysis
4. Implementation in Stata

SESSION II: REWEIGHTING

1. The logic of Reweighting
2. Reweighting on the propensity score
3. Analytical and bootstrap standard errors
4. Implementation in Stata

DAY 3: INSTRUMENTAL-VARIABLES AND SELECTION MODELS

SESSION I: INSTRUMETAL-VARIABLES

1. The logic of IV
2. Endogeneity and consistent estimation
3. Types of IV methods
4. Implementation in Stata

SESSION II: ENDOGENOUS REGRESSION ADJUSTMENT

1. The logic of ERA
2. The residual control-function approach
3. Implementation in Stata

SESSION III: SELECTION MODEL (HECKIT)

1. Dealing with selection-on-unobservables
2. Heckman selection model *(heckit)*
3. Implementation in Stata

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ECONOMETRICS FOR PROGRAM EVALUATION

DAY 4: DIFFERENCE-IN-DIFFERENCES AND REGRESSION DISCONTINUITY DESIGN

SESSION I: DIFFERENCE-IN-DIFFERENCES (DID)

1. DID statistical setting
2. DID with longitudinal data
3. DID with repeated cross-section
4. Pre-post treatment dynamic effect
5. Implementation in Stata

SESSION II: REGRESSION DISCONTINUITY DESIGN (RDD) ***(TIME PERMITTING)***

1. RDD as a local approximation of a natural experiment
2. Sharp RDD setting and estimation
3. Fuzzy RDD setting and estimation
4. Implementation in Stata

SESSION III: POLICY EVALUATION IN PRACTICE

1. Ex-post policy evaluation: logical structure and statistical design
2. The choice of the evaluation method
3. Limitations and open questions

USEFUL TEXTS

- Mostly Harmless Econometrics: An Empiricist's Companion, Joshua D. Angrist e Jorn-Steffen Pischke (2008) Princeton University Press.
- Microeconometrics Using Stata, Colin Cameron and Pravin K. Trivedi (2010) Stata Press.
- Econometric evaluation of socio-economic programs: theory and applications, Giovanni Cerulli (2015) Springer Verlag.

REGISTRATION FEES

PARTICIPATION FOR THE ENTIRE WEEK (Modules A, B and C – 8 days)

Students*: € 1885.00
Academic: € 2823.00
Non-Profit/Public Research Centres: € 3151.00
Commercial: € 3480.00

MODULES A and B (4 days)

Students*: € 1120.00
Academic: € 1659.00
Non-Profit/Public Research Centres: € 1853.00
Commercial: € 2047.00

MODULE B (3 days)

Students*: € 875.00
Academic: € 1299.00
Non-Profit/Public Research Centres: € 1443.00
Commercial: € 1587.00

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ECONOMETRICS FOR PROGRAM EVALUATION

MODULE C (4 days)
Students*: € 1147.00
Academic: € 1712.00
Non-Profit/Public Research Centres: € 1904.00
Commercial: € 2096.00

*To be eligible for student prices, participants must provide proof of their full-time student status for the current academic year.

Fees are subject to VAT (applied at the current Italian rate of 22%). Under current EU fiscal regulations, VAT will not however applied to companies, Institutions or Universities providing a valid tax registration number.

Please note that a *non-refundable deposit* of €100.00 for students and €200.00 for Academic, Non-Profit/Public Research Centres and Commercial participants, is required to secure a place and is payable upon registration. The number of participants is limited to 15. Places will be allocated on a first come, first serve basis.

Course fees cover: i) teaching materials (copies of lecture slides, databases and Stata routines used during the summer school; ii) a temporary licence of Stata valid for 30 days from the beginning of the school; iii) half board accommodation (breakfast, lunch and coffee breaks) in a single room at the CISL Studium Centre (8 nights for entire week, 4 nights for Modules A and B, 3 nights for Module B, 4 nights for Module C). Participants requiring accommodation the night of the final day of the school, are requested to contact us as soon as possible.

To maximize the usefulness of this summer school, we strongly recommend that participants bring their own laptops with them, to enable them to actively participate in the empirical sessions.

COURSE LEADERS

Una-Louise BELL
TStat Training

Giovanni BRUNO
Bocconi University

Giovanni CERULLI
National Research Council of Italy

CONTACTS

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www.tstat.eu

REGISTRATION FEES

Individuals interested in attending this summer school must return their completed registration forms either by email (training@tstat.eu) or by fax (+39 0864 206014) to TStat by the 6th of August 2018.

Further details regarding our registration procedures, including our commercial terms and conditions, can be found at https://www.tstattraining.eu/training/econometrics-program-evaluation/