



## Techniques for Public Policy Analysis

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09th – 11th September

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Language: English  
Schedule: Morning, from 09:30 to 13:30  
hours

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### Module overview

In the modern world of public policy analysis, the “impact evaluation” perspective is the dominant question: how to measure, to estimate and to infer the causal effect of a public policy on an “outcome”? This question plays a fundamental role in modern government and in international organizations on today.

Participants will learn the major concepts and tools used by public policy specialists for “causal reasoning” and the quantitative evaluation of policies. Among the concepts covered by the course are “counterfactuals”, “potential outcomes”, “treatment effects”, “before/after effects”. Participants will learn the basics of the so-called “Rubin model” and how statistical models can help when the data are coming from non-experimental frameworks, a situation quite frequent in the real world. The regression-based methods can be used to develop a formal framework for quasi-experimental reasoning and to address major public policy questions related to such diverse issues as education, public health, social policies.

The beginning of the course focuses on the role of quantitative methods in public policy analysis and evaluation and theoretical considerations behind (correlation versus causality; the potential outcomes and the Rubin causal model; experiments and quasi-experiments versus observations; internal/external validity). After this, course is more applied with practical examples and replication of published papers. The objective is in showing how regression-based methods provide an empirical framework to test for “causal effect” when data come from observations rather than experiments. The key point will be to learn the participants why and how the regression-based methods are used to identify the so-called “treatment effect”, in other words to prove that the policy has or not the expected effects. Methods like the “comparison of means across groups” (“treated group/control group”), difference in differences”, “instrumental variable” or “regression discontinuity design” will be covered and presented in easy formalization, with practical example developed in Stata formats. The course is introductory/intermediate.

### Class schedule

The sessions will be held in the morning, from 09:30 am to 13:30 pm.

Session 1 (september 9):

- Introduction to the main issues in public policy analysis with quantitative methods.
- Correlation and causality; the potential outcomes and counterfactual model (Rubin model).



- Experiments, quasi-experiments and observational studies.

Session 2 (september 10):

- The regression techniques: how to deal with causal analysis in the regression framework (multiple regression, dummies and interactions, Chow test).
- Advantages and limits of the regression models to identify causal policy effects.

Session 3 (september 11):

- Moving beyond the classical regression models: DID models, instrumental variables techniques and Regression Discontinuity Designs as modern techniques to identify causal policy effect.