

MOD. IV – PROJECT AND PROGRAMME IMPLEMENTATION AND EVALUATION

Course Title: **Impact Evaluation**

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Course Description:

This course provides an introduction to the theory and practice of impact evaluation methods used to assess the causal effects of public policies, development programs, and social interventions. The course focuses on the logic of causal inference, the counterfactual framework, and the main experimental and quasi-experimental evaluation methods commonly used in applied economics and development research. Students will learn how to design an impact evaluation, formulate evaluation questions, construct credible comparison groups, and critically interpret empirical evidence. Particular attention is devoted to the assumptions underlying different identification strategies and to the practical challenges encountered in real-world policy evaluation.

The course combines conceptual foundations with applied examples drawn from development programs and public policy interventions. The material covers randomized evaluations, instrumental variables, difference-in-differences, regression discontinuity designs, and matching methods.

Prerequisites:

Knowledge of statistics and econometrics is recommended, including familiarity with hypothesis testing, probability distributions, ordinary least squares (OLS) regression, binary response models (logit/probit), statistical inference, confidence intervals, and basic concepts of causal inference. Students are also expected to be comfortable with interpreting regression outputs and reading empirical economics or policy evaluation papers.

Learning Objectives:

- Understand the fundamental problem of causal inference and the role of the counterfactual.
- Distinguish monitoring and evaluation from impact evaluation.
- Formulate evaluation questions and construct a Theory of Change.
- Understand internal validity, external validity, and selection bias.
- Identify the assumptions required for causal identification.
- Critically assess experimental and quasi-experimental evaluation designs.
- Interpret empirical impact evaluation results in applied research settings.
- Understand the strengths and limitations of major econometric evaluation methods.

Exam:

Final written examination or project presentation.

References:

- Cunningham, S. (2021). Causal Inference: The Mixtape.
- Angrist, J. D., & Pischke, J.-S. (2009). Mostly Harmless Econometrics.
- Imbens, G. W., & Rubin, D. B. (2015). Causal Inference for Statistics, Social, and Biomedical Sciences.

- Khandker, S. R., Koolwal, G. B., & Samad, H. A. (2010). Handbook on Impact Evaluation: Quantitative Methods and Practices.

Course Content:

Module 1. Introduction to Impact Evaluation

- Evidence-based policymaking
- What is impact evaluation?
- Monitoring vs. impact evaluation
- The project cycle and evaluation
- Attribution and causal effects
- Outcomes, outputs, and impacts

Module 2. Impact Evaluation Design

- Theory of Change
- Results chains and logical frameworks
- Evaluation questions and indicators
- SMART indicators
- Sampling and clustering
- Power calculations and minimum detectable effects

Module 3. Causal Inference and the Counterfactual

- Potential outcomes framework
- The counterfactual problem
- Treatment and comparison groups
- Selection bias
- Internal and external validity
- Derivation of ATE, ATT, and LATE.
- Threats to causal identification

Module 4. Randomized Controlled Trials (RCTs)

- Logic of randomized assignment
- Experimental design
- Treatment and control groups
- Randomization procedures
- Cluster randomization
- Balance and compliance
- Internal validity of RCTs
- Advantages and limitations of randomized evaluations

Module 5. Instrumental Variables and Imperfect Compliance

- Imperfect compliance
- Intention-to-Treat (ITT)
- Treatment-on-the-Treated (TOT)
- Local Average Treatment Effect (LATE)
- Instrumental variables framework
- Validity conditions for instruments

Module 6. Difference-in-Differences and Regression Discontinuity Design

- Before-after comparisons
- Difference-in-differences estimator
- Parallel trends assumption
- Fixed differences over time
- Regression discontinuity logic
- Sharp and fuzzy discontinuity designs
- Identification at the threshold

Module 7. Matching Methods and Propensity Score Matching

- Selection on observables
- Matching estimators
- Curse of dimensionality
- Propensity score estimation
- Common support and overlap
- Construction of comparison groups
- Strengths and limitations of matching methods