

Research Methodology (4 credits)

This course has two major components. Section A aims to provide doctoral students with a sound methodological understanding and ethical implications of advanced economic research. Sections B and C will train them in some essential tools in conducting empirical research both in terms of primary and secondary data. The present course will complement the other core course on Advanced Economic Theory in introducing the students to the frontiers of economic research.

Module A: Methodology of economic inquiry

This module is designed to introduce students to the key methodological positions on scientific inquiry and use this knowledge to provide a methodological basis for the dominant paradigms of economic research. The module will conclude with a discussion of the different ethical issues related to research

- I. Methodological approaches to scientific research
- II. Major paradigms of economic research and their methodological bases
- III. Relationship between the subject and the object of research: ethical considerations

Selected readings

Blaug, Mark (1992), *The Methodology of Economics: Or How Economists Explain*. Cambridge University Press

DeMartino, George F. (2010), *The economist's oath: On the need for and content of professional economic ethics*. Oxford University Press

Friedman, Milton (1994), "The methodology of positive economics." *The Philosophy of Economics* pp. 180-213, Cambridge University Press

McCloskey, Deirdre (1994), *Knowledge and Persuasion in Economics*. Cambridge University Press

Module B: Survey Design and Methods of Data Collection

This module provides students with the required skills that are applicable to survey design and data collection in social science research. Students will be taught as to how to ask the right question, the importance of testing questionnaires, principles and practices of good survey design, principles and methods of sampling and data collection, types of data that surveys can generate and the different ways this data can be used and analyzed.

- I. Introduction: Types of Data: qualitative and quantitative; Anonymity, confidentiality and Ethics; Interviews and Surveys in the Broader Context of Social Science Research.
- II. Designing the Questionnaire: Survey Purpose, Question Relevance, Validity, Reliability.
- III. Methods of Collection of Data: Participatory survey, Interview, Focus Group Discussion, Sample Survey using Structured Questionnaire / Schedule; Pre-Testing and Pilot Testing.
- IV. Sampling and Sampling Distribution: Sampling Vs Census, Different Sampling Methods, Sampling and Non- Sampling Errors, Concept of Sampling Distribution, Sampling Distributions of Sample Mean and Sample Proportion, Central Limit Theorem, t, Chi-Square and F distributions; Determination of the Sample Size
- V. Data Processing and Analysis: Data Cleansing and Coding; Missing Data; Basic Principles of Categorical Data Analysis.

Selected readings

Groves, Robert M. et al (2004) *Survey Methodology*. Hoboken, NJ: John Wiley & Sons

Converse, Jean and Stanley Presser (1986) *Survey Questions: Handcrafting the Standardized Questionnaire*. Beverly Hills: Sage Publications

Bryman, Alan (2001) "Sampling." *Social Research Methods* (Chapter 4)

Module C: Advanced Econometrics and Statistics

This course will focus heavily on applying econometric methods in real-world situations, building on a comprehensive understanding of econometric theory. The main objective of this course is to provide an introduction to what has become known as “modern” econometric methods. Topics to be studied include specification, estimation, and inference in the context of models that include then extend beyond the standard linear multiple regression framework.

After successful completion of this module, the student should be able to:

1. Understand the scope and limitations of classical econometric techniques
2. Read, write and properly interpret articles and reports of an applied econometric nature using these techniques.
3. Be in a position to advance upon the basic foundations of econometric theory and practice with some ease.

Following are the tentative topics to be covered in this module:

1. Bayesian Econometrics
2. Factor and Principal Components Analysis
3. New methods of identification
 - Propensity score matching
 - Difference-in-difference estimators
 - Regression discontinuity design
 - Randomized Control Trials
4. Advanced topics in Times series
 - State Space Models

Textbooks

Greene, William H. (2008) *Econometric Analysis*. 6th Edition. Pearson, Prentice-Hall.

Koop, G. (2003) *Bayesian Econometrics*, Wiley

Hamilton, J. (1994) *Time Series Analysis*, Princeton University Press