

PO8006 Introduction to Quantitative Research Methods

Trinity College Dublin 2021/22

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- **ECTS Weighting:** 10
- **Semester/Term Taught:** Semester 2 (Hillary Term)
- **Contact Hours:**
One 2-hour lecture, one 1-hour workshop and one 1.5-hour tutorial per week (11 weeks)
- **Module Coordinator:** Dr Tom Paskhalis
- **Office Hours:** TBA

Learning Aims

The goal of this module is to introduce students to the practice of data analysis at an introductory postgraduate level. More than ever before, political science research relies upon data — information about people, firms, nations, etc. that can be standardized, compared, and analyzed en masse. Political scientists analyze data with an eye to explaining the social world. Not all political scientists perform data analysis, of course, but because data analysis provides so much of our knowledge about politics and society, every student of the subject must now know at least a little about how it works.

Learning Outcomes

On successful completion of this module students should be able to:

- develop causal models of the social world;
- identify data useful for testing such models;
- recognize different types of data;
- identify populations of observations and samples selected from such populations;
- make use of several different statistical estimators, with a basic knowledge of their respective strengths and weaknesses;
- interpret and critique basic quantitative results found in the political science literature;

Module Content

Students will learn about quantitative research methods through lectures and readings. Specifically, they gain a basic understanding of statistics and the classical model of hypothesis testing, as well as a number of key statistical tests used by social scientists. In tutorials, they will develop their knowledge of R, an open-source statistical programming language. Each student will then write an original research paper that asks a social science question and uses one or more statistical tests to answer it.

Recommended Reading List

We will primarily be relying on the following core texts for this module:

- Kosuke Imai. 2017. *Quantitative Social Science: An Introduction*. Princeton, NJ: Princeton University Press
- Philip H. Pollock and Barry C. Edwards. 2019. *The Essentials of Political Analysis*. 6th ed. Washington, DC: CQ Press
- Philip H. Pollock and Barry C. Edwards. 2017. *An R Companion to Political Analysis*. 2nd ed. Washington, DC: CQ Press
- Alan Agresti and Barbara Finlay. 2009. *Statistical Methods for the Social Sciences*. 4th ed. Upper Saddle River, NJ: Prentice Hall

Assessment Details

- 5 Short Assignments (40%):
 - 3 R assignments (8% each)
Approximately, 1-2 pages
 - Literature review (8%)
Approximately 1-2 pages and no more than 500 words
 - Research design (8%)
Approximately 1-2 pages and no more than 500 words
- Research paper (60%)
Approximately 10 pages and no more than 5,000 words