PO12Q-15 Introduction to Quantitative Political Analysis II

23/24

Department
   Politics & International Studies
Level
   Undergraduate Level 1
Module leader
   Florian Reiche
Credit value
   15
Module duration
   10 weeks
Assessment
   Multiple
Study location
   University of Warwick main campus, Coventry

Description

Introductory description

This module builds on PO-6128 which is essential for taking this module. PO-6129 will concentrate on the tasks of "analysis" and "interpretation" of the quantitative methods typology, and provide students with a toolbox to analyse the relationship between two or more variables. The module will start by looking at two-sample t-tests and cross-tabulations, before moving to its main focus: regression analysis. This method is one of the standard tools of political science researchers and cannot only demonstrate whether relationships between variables exist, but also quantify the magnitude and direction of such a relationship. We will progress in small steps, starting with only one independent variable to explore the intuition, assumptions, and interpretation of results. The module will close by discussing the basics of multiple regression.

Module aims

- To provide an introduction into basic bivariate methods of analysis

- To provide an introduction to bivariate and multiple linear regression analysis

- To build on the skills acquired in R on PO-6128

- Further data analysis skills for employability in relation to PO-6128

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

1. Two sample t-tests
2. Cross-tabulation and chi-square
3. Linear regression: the intuition
4. Two-Variable Regression Analysis
5. The Classical Model
6. Reading Week
7. The Gauss-Markov Theorem and Goodness of Fit
8. Two-Variable Regression - Interval Estimation and Hypothesis Testing
9. Conducting and Interpreting Multiple Regression Analysis
10. Dummy Variables and Model Specification

Learning outcomes

By the end of the module, students should be able to:

- Understand basic methods of bivariate analysis (two-sample t-tests and cross-tabulations)
- Understand and apply the method of linear regression (ordinary least squares)
- Conduct basic bivariate and multivariate analysis in R
- Begin to critically engage with quantitative findings in political science journal articles.

Indicative reading list

- Acock, Alan C. 2014. A Gentle Introduction to Stata, Fourth Edition, Stata Press

- Agresti, A. and B. Finlay. 2008. Statistical Methods for the Social Sciences, 4th ed. Upper Saddle River, NJ: Prentice Hall.

- Brady, Henry E. 2010. Rethinking Social Inquiry: Diverse Tools, Shared Standards, 2nd edition. Rowman & Littlefield

- Brians, Craig L., Lars Wilnat, Jarol B. Manheim and Richard C. Rich. 2010. Empirical Political Analysis. Pearson

- Bryman, A. 2008. Social Research Methods, 4th ed., Oxford: Oxford University Press

- Coolidge, Frederick L. 2012. Statistics: A Gentle Introduction. Sage

- Diamond, Ian and Jefferies, Julie. 2000. Beginning Statistics: An Introduction for Social Scientists. Sage

- Frankfort-Nachmias, Chava. 2008. Research methods in the social sciences, 7th edition, New York: Worth Publishers.

- Gill, Jeff. 2006. Essential Mathematics for Political and Social Research, Cambridge: Cambridge University Press.

- Hamilton, Lawrence. 2008. Statistics with Stata - International Edition. Stata Press

- Lomax, Richard G. and Debbie L. Hahs-Vaughn. 2012. An Introduction to Statistical Concepts, 3rd edition. Routledge

- Reiche, Florian (forthcoming) Introduction to Quantitative Methods in the Social Sciences. Oxford: Oxford University Press

- Studenmund, A. H. 2006. Using Econometrics: A Practical Guide. Fifth ed. Boston: Pearson.

- Tufte, E. (1983) The Visual Display of Quantitative Information. Cheshire, CT: Graphics Press.

Research element

Mini Research Project in Seminars.

International

Data from around the world is used.

Subject specific skills

Analysis of bivariate relationships,
Application of bivariate and multiple regression analysis to empirical problems,
Increased proficiency in statistical software (in comparison to prerequisite module "Introduction to Quantitative Political Analysis I").

Transferable skills

Written communication skills,
Oral communication skills,
Problem-solving skills,
Skills in the use of information technology,
Skills of interpretation and the critical analysis of primary and secondary sources,
The ability to digest, retain and apply complex information and ideas,
Ability to conduct research and reference your work appropriately,
Time management skills and the ability to meet deadlines,
The ability to reflect critically on the extent and limitations of how and what you have learned, discovered and understood.

Study

Study time

Type	Required
Lectures	9 sessions of 1 hour (6%)
Seminars	9 sessions of 2 hours (12%)
Private study	123 hours (82%)
Total	150 hours

Private study description

Guided reading through reading list, completion of research project and homework in preparation of seminars.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group D

	Weighting	Study time
Week 7 In-Class Test	10%	
Online Examination	90%	
Exam		

- Online examination: No Answerbook required

Assessment group R

	Weighting	Study time
Online Examination - Resit	100%	

Only if a student fails the module overall, the re-assessment takes place in the form of a 100% exam in September.

Feedback on assessment

Detailed and regular feedback will be provided throughout the module.

FORMATIVE
Verbal feedback on lab and workshop work will be provided at relevant points in the lectures and workshops throughout all sessions. This will be provided by module teachers at each session. In addition, student participation will be strongly encouraged and this will include students giving each other peer feedback during classes on their own work as well. Students also have the opportunity to test their knowledge on a formative weekly quiz on Moodle with instant feedback.

SUMMATIVE
Detailed written feedback will be provided on both assessments via Tabula.

Past exam papers for PO12Q

Availability

Post-requisite modules

If you pass this module, you can take:

- PO31Q-15 Political Analysis with Maximum Likelihood Estimation
- PO2E1-15 Introduction to Causal Inference in Quantitative Political Analysis

Courses

This module is Core for:

- Year 1 of UPOA-M162 Undergraduate Politics, International Studies and Quantitative Methods

This module is Optional for:

- Year 2 of UPOA-M100 Undergraduate Politics
- UPOA-M16A Undergraduate Politics and International Studies
  - Year 2 of M16A Politics and International Studies
  - Year 2 of M16A Politics and International Studies
  - Year 2 of M16A Politics and International Studies

This module is Unusual option for:

- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)

This module is Option list A for:

- UPHA-V7ML Undergraduate Philosophy, Politics and Economics

- - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
- Year 1 of UPOA-M100 Undergraduate Politics
- UPOA-M16A Undergraduate Politics and International Studies
  - Year 1 of M16A Politics and International Studies
  - Year 1 of M16A Politics and International Studies
  - Year 1 of M16A Politics and International Studies
- Year 2 of UPOA-ML13 Undergraduate Politics and Sociology
- Year 2 of UPOA-M163 Undergraduate Politics, International Studies and French