

C9.Web data analysis and software for statistics II: Advanced methods

Subject Information:					
Code	C9	Plan	2014	ECTS	5
Type of Subject		Year		Semester	
Knowledge area:					
Department:					
Virtual Platform	Platform:	Studium.usal.es			
	Access URL:	Studium.usal.es			

Data about the instructor-teacher			
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Remarks (previous requirements, coordination, other, if any)

The course is the follow-up of Introduction to survey data analysis (C4). Students should have a good knowledge of bivariate linear regression analysis. Students lacking these entry requirements (did not pass the exam of the C4 course) but would like to follow the course have to catch up by self-study. Moreover, before accepted to the exam of this course they have to finish C4.

Objectives and competencies of the subject (basics, general, transversal, specifics)

In this course students will learn the statistical background and empirical application of advanced multivariate regression modelling, including binary, ordered and multinomial logistic regression. Furthermore, the course offers broad practical insights by implementing the various models using advanced statistical software. Students are provided with

- a solid basis of knowledge for the application of multivariate regression analysis as well as categorical data analysis ;
- a strong understanding of how categorical models are formulated (and their relationship with other types of statistical modeling);
- an experience in handling categorical structures in social science data;
- an ability to specify, and critically interpret the results of categorical models using advanced statistical software

Programme (brief description of modules) and expected learning outcomes

The course will start with a brief repetition of OLS regression and the underlying assumptions in order to introduce more advanced techniques dealing with violations of OLS assumptions. In the first part of the course, students are introduced to the wide array of categorical data analysis, such as binary, ordered and multinomial logistic regression. The second part of the course starts with fixed effects models and will continue with an introduction and practical application of mixed models (i.e. multi-level models) allowing for a more appropriate way of dealing with nested data. The course provides broad practical insights into the implementation and limitations of the various models using advanced statistical software.

Methodology

The course consists of both lecture and PC-lab sessions. While lectures focus on developing basic understanding of advanced multivariate modelling, the lab's primary purpose is to offer students first-hand experience in conducting and interpreting regression outcomes using advanced statistical software. In the course different (web)data sources will be used offering a broad range of topics which can be analysed. However, students are encouraged to bring own datasets to the seminar if they wish.

Resources

Bibliography:

- Allison, P. D. (1999). Multiple Regression: a Primer. Thousand Oaks, Calif.: Pine Forge Press.
- Treiman, D. J. (2009): Quantitative Data Analysis. Doing Social Research to Test Ideas. San Francisco: Jossey-Bass
- More readings will be posted at the beginning of the course

Online resources:

Will be posted at the beginning of the course

Evaluation System:

General Considerations:

Evaluation Criteria:

- Active participation & command of readings (20 % of final grade),
- One research paper (80% of final grade)

Recommendation for second and following evaluations:

Employment Opportunities (optional)

Will be posted at the beginning of the course