Universitat de les Illes Balears

Teaching guide

Subject identification

Subject	11499 - Econometrics of Programme Evaluation
Credits	0.72 de presencials (18 hours) 2.28 de no presencials (57 hours) 3 de totals (75 hours).
Group	Group 1, 2S (Campus Extens)
Teaching period	Second semester
Teaching language	English

Professors

Lecturers	Horari d'atenció als alumnes					
	Starting time	**Finishing time**	**Day**	**Start date**	**Finish date**	**Office**
Lucia Mangiavacchi - lucia.mangiavacchi@uib.es	11:00	12:00	Wednesday	12/09/2016	02/06/2017	DB220

Contextualisation

This course will introduce students to the most important approaches of program evaluation. These approaches have been widely used in the economics literature in diverse fields (development, labor, public economics, economics of education and health) and can be applied to a wide range of questions such as evaluating the effects of antipoverty programs, educational and job training programs, preventative health care, of changes in laws such as minimum wage laws and minimum drinking age and so forth.

The challenge in the literature on program evaluation consists of how to address the problem of the "missing" counterfactual: To evaluate the impact of a program it is necessary to not only know the outcome of the individual in the presence of the program, but to also know what the outcome would have been in the absence of the program ("counterfactual"). The problem is that individuals are never observed in both states (presence and absence of program) at the same time. Therefore the goal of all the approaches discussed in this course (and in fact one of the main challenges in economics in general) is to derive appropriate "counterfactuals" under different assumptions.

The different available approaches require very different assumptions and have different data requirements. The goal of this course is to guide students in acquiring a solid econometric understanding of the different approaches, so that they are able to decide which approach is appropriate for evaluating a specific program and to carefully interpret the results. Thus the purpose of the course is twofold: first, it aims at improving students' understanding of econometric issues that arise in the program evaluation literature. Second, the course will teach students the skills that are necessary for applying the most important approaches of program evaluation in their research to address a variety of questions in different areas of economics, while raising their awareness of limitations. The second goal encompasses learning how to implement the different approaches with commonly used statistical software such as STATA.

Requirements

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Recommendable

This course is intended mainly as an applied subject, thus although no former specific knowledge is needed, it is recommended that the students have a general background in Microeconometrics and Welfare Economics.

Skills

Specific

* CE7 – To be able to collect, generate, process and analyse statistical data to support monitoring and evaluation activities..
* CE8- To know and understand the diverse impact that different tourism development alternatives can have on social wellbeing (environment, health, equality of opportunities, etc.)..
* CE11 – To be able to structure the work undertaken, as well as the results obtained, with the purpose of presenting reports in the fields of monitoring and evaluation..

Generic

* CG2 – To develop an innovative capacity by applying the acquired knowledge to the resolution of problems in new environments related to the tourism sector..
* CG7 – To acquire specialized knowledge about the tourism system to make it possible to face challenges and provide solutions..
* CG8 – To know how to apply information and communications technology (ICT) in the context of tourism projects..

Basic

* You may consult the basic competencies students will have to achieve by the end of the Master's degree at the following address: http://estudis.uib.cat/master/comp_basiques/

Content

Theme content

1. Introduction: experimental versus non-experimental evaluation methods

    The challenge in the literature on program evaluation consists of how to address the problem of the "missing" counterfactual: To evaluate the impact of a program it is necessary to not only know the outcome of the individual in the presence of the program, but to also know what the outcome would have been in the absence of the program ("counterfactual"). The problem is that individuals are never observed in both states (presence and absence of program) at the same time. The topic will present to different ways to address the problem: experimental and non-experimental methods.

2. Randomized trials (use and design)

    Randomized experiments suppose to select the comparison group using a randomization device (e.g. a lottery). The topic will review papers proposing randomized experiments and describe benefits and limits of social experiments.

3. Regression discontinuity

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In a nonexperimental setting, program eligibility rules can sometimes be used as instruments for exogenously identifying participants and nonparticipants. To establish comparability, one can use participants and nonparticipants within a certain neighborhood of the eligibility threshold as the relevant sample for estimating the treatment impact. Known as regression discontinuity (RD), this method allows observed as well as unobserved heterogeneity to be accounted for.

4. Propensity Score Matching

Propensity score matching (PSM) constructs a statistical comparison group that is based on a model of the probability of participating in the treatment, using observed characteristics. Participants are then matched on the basis of this probability, or propensity score, to nonparticipants. The average treatment effect of the program is then calculated as the mean difference in outcomes across these two groups. The topic wil present alternative matching methods and their applications. How to test main PSM assumptions will also be studied.

5. Difference in difference

Double-difference (DD) methods can be used with data on project and control observations before and after the program intervention. Some variants of the DD approach have been introduced to account for potential sources of selection bias. Combining PSM with DD methods can help resolve this problem, by matching observations with similar characteristics.

6. Instrumental variables

Instrumental variables methods provide another approach to estimating program effects in the presence of nonrandom self-selection, allowing for selection on unobservables. The IV approach involves finding a variable (or instrument) that is highly correlated with program placement or participation but that is not correlated with unobserved characteristics affecting outcomes. Instruments can be constructed from program design (for example, if the program of interest was randomized or if exogenous rules were used in determining eligibility for the program).

7. Duration analsys

The topic will introduce duration (or survival) analysis. This method is used when the outcome of interest is the time until an event occurs. Examples of time-to-events are duration of unemployment in labour economics or duration in schooling in economics of education.

Teaching methodology

In class the teacher will present the theory of the different econometric approaches and propose a reading list with theory papers, textbooks and application articles. Different approaches will be motivate by mentioning potential applications and data requirement. Computer classes will be based on the appplications of the proposed methods for the evaluation of specific programs includingtourism-promotion programs. Teacher will propose related datasets and use Stata 14 to perform different program evaluations. Students are asked to performe a program evaluation and write a short paper depending on their areas of interest. Then they will present their papers in class.

In-class work activities

Modality	Name	Typ. Grp.	Description	Hours
Theory classes	Lectures	Large group (G)	The teacher will present the theory of the different econometric approaches and propose a reading list with	10

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Modality	Name	Typ. Grp.	Description	Hours
			theory papers, textbooks and application articles. Different approaches will be motivate by mentioning potential applications and data requirement.	
Practical classes	Computer classes	Large group (G)	Computer classes will be based on the appplications of the proposed methods for the evaluation of specific programs including tourism-promotion programs. Teacher will propose related datasets and use Stata 14 to perform different evaluations.	6
Assessment	Presentations of short papers	Large group (G)	Students are asked to performa program evaluation and write a short paper. Then they willpresent their papers in class. Teacher will assign the dataset and the method to be used by each student.	2

At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to whether the subject work plan will be carried out through the schedule or through another way included in the Campus Extens platform.

Distance education work activities

Modality	Name	Description	Hours
Individual self-study	Individual studying	Students are asked to review basic econometric concepts at the beginning of the subject and then to study contents proposed during classes on theory papers, textbooks and application articles. Students are asked to perform an evaluation using the program Stata and write a short paper. In the paper students should include an Appendix reporting the Stata code of their analysis.	40
Group self-study	Group studying	Students are asked to study contents proposed during classes on theory papers, textbooks and application articles and discuss them with their mates. In quantitative methods in-group discussions are very usefull for the understanding of the contents.	17

Specific risks and protective measures

The learning activities of this course do not entail specific health or safety risks for the students and therefore no special protective measures are needed.

Student learning assessment

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Presentations of short papers

Modality	Assessment
Technique	Papers and projects **(non-retrievable)**
Description	Students are asked to performa program evaluation and write a short paper. Then they willpresent their papers in class. Teacher will assign the dataset and the method to be used by each student.
Assessment criteria	The evaluation will be based on exposition quality: slides clarity, exposition structure, ability to synthesize concepts and the ability to explain economic concepts and results obtained.

Final grade percentage: 25% with minimum grade 5

Individual studying

Modality	Individual self-study
Technique	Papers and projects **(non-retrievable)**
Description	Students are asked to review basic econometric concepts at the beginning of the subject and then to study contents proposed during classes on theory papers, textbooks and application articles. Students are asked to perform an evaluation using the program Stata and write a short paper. In the paper students should include an Appendix reporting the Stata code of their analysis.
Assessment criteria	The evaluation will be based on work quality: rigour in the applied methodology, clarity of presentation of the problem, methodology and results; comprehension of the methodology and the socio-economic consequences of the results.

Final grade percentage: 75% with minimum grade 5

Resources, bibliography and additional documentation

Basic bibliography

1 Cameron, A. and Trivedi, P. (2005) *"Microeconometrics, methods and applications"*, Cambridge University Press.
2 Wooldridge (2002) *"Econometric Analysis of Cross Section and Panel Data"*, MIT Press, chapter 18 "Estimating Average Treatment Effects".
3 Khandker, R.S., Koolwal, G.B., Samad, H.A. (2010) *"Handbook on Impact Evaluation: Quantitative Methods and Practices"*, The World Bank. (https://openknowledge.worldbank.org/bitstream/handle/10986/2693/520990PUB0EPI1101Official0Use0Only1.pdf?sequence=1)
4 *Stata 14Treatment-Effects Reference Manual*,StataCorp LP, 2015. (http://www.stata.com/manuals14/te.pdf)

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