Universidad de Navarra

Topics in Economics and Finance VII (MEF_12)
Guía docente 2023-24

PRESENTACIÓN

Breve descripción:

- **Titulación**: Master in Economics and Finance
- **Módulo/Materia**: Mandatory/ Quantitative Analysis
- **ECTS**: 3.5 (87.5 hours of work)
- **Curso, semestre**: 1, Fall Semester
- **Carácter**:
- **Profesorado**: Dr. Xavi Vidal-Berastain (xvidalberastain@brandeis.edu) and Dr. Lucas Macoris (lucas.macoris@fgv.br)
- **Idioma**: English
- **Aula, Horario**: 8:00AM - 11: 00AM, from 4/8 - 4/17 -

COMPETENCIAS

CG1) To train high-level specialists in methods related to quantitative marketing and its applications.

CG2) To provide students with the appropriate and necessary statistical and economic concepts and techniques to carry out the theoretical and empirical work in quantitative marketing.

CG5) To provide students with the basic theoretical foundations to begin doctoral studies.

PROGRAMA

The course will be divided into two sections. The first section will focus on choice models, discussing the methodological aspects of the techniques most widely used in practical applications. The second section will be focused on market response models - measuring the effects of marketing efforts on sales metrics -and will discuss methods ranging from experimental design to panel-data estimation.

Additional papers and references not covered in Sections 1 and 2 will be organized in the bibliography. Students are expected to apply the methods discussed in Sections 1 and 2 and replicate the codes developed during class. All coding routines will be discussed during class, and a handout will be provided at the end of each class.

As an extracurricular step, the course will also bring industry practitioners to discuss how marketing activity is measured and industry challenges in quantitative marketing.

Part 1- Choice Models and its applications

1. Logit and Multinomial Models

2. Random Coefficients Logit

Part 2 – Causal Inference

1. Causal Inference for scenarios when experimentation is available
    1. Market Response Models
    2. Experimental Design and A/B Testing
2. Quasi-experimental methods: matching techniques
3. Causal Inference for scenarios when experimentation is NOT available

3.1 Methods for cases where we can assume selection based on Observables.

      i. Bayesian Causal Diagrams

      ii. Causal discovery

      iii. Fixed effect regressions

      iv. Doubly Robust ML

3.2 Methods for cases where we can assume selection based on Unobservables

      i. Diff-and-Diff

      ii. IV - Regressions

      iii. Synthetic controls

ACTIVIDADES FORMATIVAS

Problem sets and face-to-face classes.

EVALUACIÓN

CONVOCATORIA ORDINARIA

1. **Python Coursework (10%):** students will use DataCamp and provide certificates of completion for some selected basic and intermediate Python courses.
2. **Take-Home Exam (50%):** this evaluation will grade students based on their ability to develop, analyze, and discuss the results of a quantitative marketing case study. Groups are expected to create a report (code + discussions) applying some techniques discussed in class. The due date is 48 hours. Performance will be evaluated regarding reproducibility, organization, and quality of the discussion.
3. **Paper Presentations (40%):** students will discuss an academic paper in a 10-15-minute presentation. All papers will be provided at the beginning of the course, and groups will choose the paper to be presented in advance. Performance will be evaluated in terms of adherence to the topic, organization, and quality of the discussion.

CONVOCATORIA EXTRAORDINARIA

1. **Take-Home Exam (50%)**: this evaluation will grade students based on their ability to develop, analyze, and discuss the results of a quantitative marketing case study. Groups are expected to create a report (code + discussions) applying some techniques discussed in class. The due date is 48 hours. Performance will be evaluated regarding reproducibility, organization, and quality of the discussion.

HORARIOS DE ATENCIÓN

Dr. Xavi Vidal-Berastain (xvidalberastain@brandeis.edu)

Schedule: By appointment

Dr. Lucas Macoris (lucas.macoris@fgv.br)

Schedule: By appointment

BIBLIOGRAFÍA

● Angrist, Joshua D. and J ̈orn-Steffen Pischke (2009). Mostly Harmless Econometrics: An Empiricist's Companion. Princeton University Press. ISBN: 9780691120348. Recurso online.

● Berry, Steven, James Levinsohn, and Ariel Pakes (1995). "Automobile Prices in Market Equilibrium". In: Econometrica 63.4, pp. 841–890. issn: 00129682, 14680262. Recurso online.

● Lewis, Randall A. and Justin M. Rao (July 2015). "The Unfavorable Economics of Measuring the Returns to Advertising #." In: The Quarterly Journal of Economics 130.4, pp. 1941–1973. doi: 10.1093/qje/qjv023. Recurso online.

● Train, Kenneth E. (2009). Discrete Choice Methods with Simulation. 2nd ed. Cambridge University Press. DOI: 10.1017/CBO9780511805271. Recurso online.

● Wooldridge, Jeffrey M (Dec. 2010). Econometric Analysis of Cross Section and Panel Data. Vol. 1. MIT Press Books 0262232588. The MIT Press. isbn: ARRAY(0x54867b10). Recurso online.