BUSINESS RESEARCH METHODS

Academic Year: 2024/2025 **Term:** 1st Semester **ECTS:** 7

INSTRUCTOR

Lectures: Domenico Fabrizi; Filipa Reis

Labs: Patrícia Cruz, Pedro Fernandes, João Lopes, Miguel Salema

CONTACTS AND OFFICE HOURS

Office hours by email or Moodle appointment.

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BIOGRAPHY

Domenico Fabrizi is an Assistant Professor of Marketing at Católica Lisbon School of Business and Economics. He earned an MSc in Economics and Social Sciences from Bocconi University and a PhD in Economics from the University of California, Los Angeles (UCLA). Domenico's research focuses on the impact of pricing strategies and new product adoption on resource allocation and consumer welfare, particularly within the airline industry. His work utilizes empirical methods to analyze innovative datasets and conduct demand estimation and dynamic model simulations.

Filipa Reis is an Invited Assistant Professor of Data Science at Católica Lisbon School of Business and Economics. Filipa holds a Ph.D. in Public Policy and Management from Carnegie Mellon University, an MSc from CLSBE, and a bachelor's degree from Nova SBE. Her research focuses on media consumption patterns and the impact of digitization and convergence technologies on consumer choices and behaviors. She has also participated in experiment-driven business analytics consulting projects for policy formulation and evaluation in the telecommunications sector. Her work has been published in Management Science and presented at top peer-reviewed research conferences such as the International Conference of Information Systems and the Economics of Digitization Seminar Series of the National Bureau of Economic Research. Filipa teaches quantitative and data analysis courses at the undergraduate level including Statistics I, Statistics II, Statistics for Business, and Economics, and is currently the Academic Director of the MSc in Business Analytics.

Pedro Afonso Fernandes was born in Lisbon, Portugal, 1970. He has an Undergraduate and MSc in Economics (NOVA School of Business and Economics), an MSc in Urban and Regional Planning (Universidade Técnica de Lisboa) and a Ph.D. in Urban Planning (Universidade Lusófona). He works at Universidade Católica Portuguesa, Católica Lisbon School of Business and Economics, as a Senior Economist/Forecaster (NECEP – Católica Lisbon Forecasting Lab), Researcher (CUBE – Católica Lisbon Research Unit in Business & Economics) and Invited Teaching Assistant of Business Research Methods (data analysis and predictive analytics with R programming). His research interests cross Economics with Data Analysis, Computational Methods, Urban Planning, Space Syntax and Rural Development.

João Sollari Lopes graduated in Bioinformatics, in 2005, from University of Lisbon, with a specialization in software development and in using deterministic mathematical models for data analysis. João developed his PhD also in Bioinformatics, in 2010, from University of Reading, applying Bayesian inference to genetic data. After his PhD, João worked on whole-genome data using Bayesian methods and researched the topic of Infectious Diseases using mathematical manipulation and computation-intensive statistical tools to capture dynamics in transmission models. João works at the Portuguese NSI in Survey Methodology and in the application of Data Science tools to combine micro- and macro-data from questionnaires and administrative data. His interests include the development and use of software for mathematical and statistical analysis, the creation and upkeep of databases, and the use of computer-based statistical and mathematical analysis to extract potentially important relations between demographic and socio-economic factors.

Patrícia Cruz is a full-time Teaching Assistant at Católica Lisbon School of Business and Economics. Patrícia holds an M.Sc. in Mathematics Applied to Economics and Management and a bachelor's degree in Economics, both from Instituto Superior de Economia e Gestão. Patrícia currently teaches several courses related to Statistics and Econometrics for Undergraduate and Master programs.

Miguel Salema is a research fellow for PROSPER (Center of Economics for Prosperity) at Católica-Lisbon, with a focus on econometrics and labour economics with big data. Thus, he is proficient in scientific computing and data analysis tools such as R and Python. Miguel teaches several courses in Statistics both in the Master and Undergraduate programs. Furthermore, Miguel Salema holds a Master's degree in Economics from CLSBE with a major in Macroeconomic Policy.

COURSE OVERVIEW

This course introduces quantitative models for business decision-making. A great emphasis is put on practical applications of models and on the use of statistical software packages to analyse real-world datasets.

LEARNING OBJECTIVES

After taking this course you should be able to:

- Grasp the basics of problem definition, formulating research questions, and the overall research process.
- Develop competency in various research designs and methodologies.
- Understand data structures, types, and how to effectively collect and preprocess data.
- Gain skills in analyzing quantitative data, with a focus on descriptive statistics and regression analysis.
- Apply theoretical concepts using R for data analysis, ensuring practical understanding and proficiency in statistical software.

TEACHING AND LEARNING METHODOLOGY

This course introduces quantitative models for business decision-making. A great emphasis is put on practical applications of models, and on the use of statistical software packages to analyze real-world datasets. The goal is to distinguish different types of data (cross section, panel data, etc.), how they can be analyzed, and how to use statistical software to prepare them for analysis and to apply econometric tools and methods to business relevant contexts and real-world datasets. Finally, interpret and critically evaluate the quality of the obtained results.

There are lectures with a bigger focus on theory, labs with a bigger focus on the statistical software, weekly assignments, and one group project to link theory to practice.

REQUIRED BACKGROUND

Students should have attended at least one statistics undergraduate course. Students should know how to compute an expected value and a partial derivative.

ASSESSMENT

- 10% Weekly Homework Assignment (Moodle Quiz)
- 40% Group Project
- 25% Midterm Exam (minimum grade 6.5)
- 25% Final Exam (minimum grade 6.5)

COURSE CONTENT

- Introduction to Business Research
- Data Analysis Fundamentals
- Data Collection and Sampling
- Statistical Inference
- Regression Analysis
- Regression Diagnostics
- Logistic Regression
- Difference-in-Differences (DiD) Methodology

BIBLIOGRAPHY

- JWB: Jeffrey Wooldridge, Introductory Econometrics: A Modern Approach, 7 ed. Thomson
- Ghauri, P., Grønhaug, K., & Strange, R. (2020). *Research methods in business studies*. Cambridge University Press.

ADDITIONAL RESOURCES

Bootstrap is a curated collection of resources, techniques, and personal development tools from academic sources, thought-leaders, and well-established productivity practices. bootstrap _ - Productivity & Study Resources | CATÓLICA-LISBON (ucp.pt)

CODE OF CONDUCT AND ETHICS

Católica Lisbon School of Business and Economics is a community of individuals with diverse backgrounds and interests who share certain fundamental goals. A crucial element to achieve these goals is the creation and maintenance of an atmosphere contributing to learning and personal growth for everyone in the community. The success of CATÓLICA-LISBON in attaining its goals and in maintaining its reputation of academic excellence depends on the willingness of its members, both collectively and individually, to meet their responsibilities.

Along with all the other members of our community, students are expected to follow professional standards and CATÓLICA-LISBON standards of Academic Integrity. Some details should be mentioned here: Please arrive on time for class with uninterrupted attendance for the duration of the class. Signing attendance sheet for anyone else in the class constitutes fraud and a violation of the CLSBE code of conduct. Use of computers and other electronic devices during the class is not allowed, unless expressly requested by the instructor of the course. Students who persistently act in a disruptive and disrespectful manner during the class session may be invited to leave.

Students are expected to behave at all times according to the fundamental principles of academic integrity, including honesty, trust, fairness, respect, and responsibility. In particular,

a. In **individual graded assignments** of any type, students may not collaborate with others or use any materials without explicit permission from the instructor of the course;

b. In **group assignments** and reports, all students listed as authors should have performed a substantial amount of work for that assignment;

c. It is dishonest to fabricate or falsify data in experiments, surveys, papers, reports or other circumstances; fabricate source material in a bibliography or "works cited" list; or provide false information in other documents in connection with academic efforts;

d. **Plagiarizing**, i.e. "to steal and pass off the ideas or words of another as one's own and or to use another's production without crediting the source" (Merriam-Webster Dictionary) is an Academic Integrity breach. It can be avoided by using proper methods of documentation and acknowledgement. Visit this guide for additional resources on how to avoid plagiarism in your written submissions: https://www.turnitin.com/papers/understanding-the-turnitin-similarity-report-student-guide

e. In **exams** students must not receive or provide any unauthorized assistance. During an examination, students may use only material and items authorized by the faculty. Use of smartwatches or other communication devices is not permitted during the exam.

Academic integrity breaches will be dealt with in accordance with the school's code of Academic Integrity: https://www.clsbe.lisboa.ucp.pt/system/files/assets/files/academicintegritycode.pdf