

COURSE SYLLABUS

Doctoral course: Quantitative methods, 7,5 credit points

Course code:
Reviewed by: RFB
Approved by: RFB
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Education Cycle: Third cycle, doctoral program course
Doctoral programme subject: Social sciences. Business administration, Informatics, etc.

Purpose:

This course is an introductory course in quantitative methods available to PhD students. The goal of the course is to provide the PhD students with basic understanding of the role and potential of quantitative methods in social science research, basic ability to understand and evaluate the merits and shortcomings of other researchers' (quantitative) studies, basic ability to apply certain quantitative techniques in your own research, and basic orientation that facilitates further self-study or taking more advanced courses on quantitative methods.

Intended learning outcomes:

On completion of the course, the students will be able to:

Knowledge and understanding

1. Read and communicate quantitative studies by appropriate statistical terminology
2. Explain the similarities and differences between conditioned and unconditioned probabilities
3. Identify which kind of multivariate statistical analysis is appropriate for a specific problem
4. Explain the concepts of exploratory vs. confirmatory factor analysis
5. Explain the concepts of multiple regression analysis

Skills and abilities

6. Explain the potentials and limitations of statistical methods for analysis of multivariate data
7. Analyze, criticize and document potential weaknesses of the quality of the data and its consequences
8. Conduct multivariate statistical analyses with an appropriate statistical software
9. Assess the goodness-of-fit of a multivariate model

Judgement and approach

10. Assess the general usefulness/weaknesses of the statistical analyses treated in the course
11. Recognize the common errors made in multivariate analysis

Content:

- 1) Descriptive statistics + graphical analysis
- 2) Survey design
- 3) Factor analysis
- 4) Regression analysis
- 5) Incomplete data

Type of Instruction/Teaching format:

Lectures, labs and seminars.

Prerequisites:

Admitted to a doctoral programme at a recognized business school or university. An expected common background is 15 credits in introductory level statistics

Examination and grades:

Compulsory attendance to lectures and labs. Possible grades are Pass/Fail.

- Hand-in reports in connection to each lab (about 4), fulfils ILOs 6-9
- One final oral or written exam, fulfils ILOs 1-5 and 10-11

Course evaluation:

A course evaluation will be conducted at the end of the course.

Additional information:

Prior to the course start, students are required to hand in a short biography illustrating their experience and training in quantitative methods, including their expectation of the course (about 1/2 page)

Students come prepared to each lecture having read the assigned reading and are expected to:

- be able to answer brief questions about key concepts, such as “What is regression analysis?”, “Why do we use factor analysis?” etc.
- identify and explain the meaning of five key concepts related to the preparatory readings.

Literature:

Hair Jr., J. F., Black, W.C., Babin, B.J. & Anderson, R.E, *Multivariate Data Analysis: Pearson New International Edition*, 7 ed., Pearson Education (2013)