UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Modulo Quantitativo - C

2425-1-F5106P034-F5106P035M-C

Learning area

Experiential learning

Learning objectives

Knowledge and understanding

- Identifying the correct analysis to be performed among a Principal Component Analysis, a Regression, and Analysis of Variance to test an hypothesis
- Identifying variables to run analysis

Applying knowledge and understanding

- Running a Principal Component Analysis, a Regression, and Analysis of Variance in *Jamovi*
- Interpreting Results

Contents

We will use the *Jamovi* statistical package to perform Principal Component Analysis on questionnaire data, Regression Analysis, and simple Analysis of Variance for experimental data. During the laboratories, students will learn how to perform these statistical techniques on different datasets and how to interpret the results.

Detailed program

- Brief Introduction to Jamovi
- Principal Component Analysis
- Linear Regression (simple, multiple including mediation and moderation analyses)
- Analysis of Variance (between-subject, within-subject)

Prerequisites

Students should have basic knowledge of statistical software (such as SPSS or Jamovi) to be able to perform basic operations (e.g., data entry, creation of variables, etc.). Furthermore, they should be attending or have attended the Quantitative Methodologies course, because it provides theoretical knowledge regarding the statistical techniques used.

Teaching methods

24 hours of interactive exercises (interactive teaching), organized into three-hour in-person sessions. Each session includes the presentation of analysis examples and the individual completion of similar exercises by the students.

Assessment methods

As part of the laboratory, students will perform specific exercises regarding the topics they studied (Principal Component Analysis, Regression, and ANOVA) to test their abilities in evaluating the validity of a series of hypotheses by conducting appropriate analyses and interpreting the results.

Textbooks and Reading Materials

Gallucci, M., Leone, L., & Berlingeri, M. (2017). Modelli statistici per le scienze sociali. Pearson

Danielle J. Navarro and David R. Foxcroft, Learning Statistics with jamovi: A Tutorial for Beginners in Statistical Analysis. Cambridge, UK: Open Book Publishers, 2025,
https://doi.org/10.11647/OBP.0333

Sustainable Development Goals

QUALITY EDUCATION