UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Quantitative Methods for Developmental Psychology - Turno B

2627-1-F5113P005-TB

Learning area

Area of experiential learning

Learning objectives

Knowledge and Understanding
Fundamental knowledge of Analysis of Variance (ANOVA) and multiple linear regression, as well as introductory concepts of more advanced techniques. This knowledge will be contextualized within the field of developmental psychology and empirical research.
Applying Knowledge and Understanding
Operational skills in applying the statistical techniques learned, using JAMOVI software to conduct analyses on real and simulated data. Students will be able to independently select and apply the most appropriate models to the available data and accurately interpret the results.
Making Judgements
Students will be encouraged to critically evaluate methodological choices, independently identifying the most suitable techniques for specific theoretical questions and research contexts, with attention to the conceptual implications of analytical decisions.
Communication Skills
The ability to clearly and effectively explain the rationale behind analytical choices and to present the obtained results, articulating the appropriate statistical inferences using technically accurate yet clear and accessible language.
Learning Skills
Through practical use of JAMOVI software and both individual and collaborative work, students will develop skills that can be autonomously applied in future academic and professional contexts, fostering continuous and selfdirected learning.

Contents

Using the statistical software JAMOVI, we will focus in particular on various ANOVA models and multiple linear regression models. During the laboratory meetings, students will learn to perform statistical analyses on different data and interpret the results, contextualized within the field of developmental psychology and empirical research.

Detailed program

Brief introduction to JAMOVI
Analysis of Variance models (between-subjects, within-subjects, mixed design)
Regression analysis (simple and multiple – mediation and moderation)
Brief overview of analysis models for frequency and ordinal variables

Prerequisites

Students should have a basic knowledge of software for creating and managing empirical data (e.g., Excel, SPSS, or similar), in order to be able to perform simple operations (data entry, variable creation,…). The main theoretical notions regarding the different statistical techniques used will be provided in the laboratory meetings.

Teaching methods

All teaching activities are laboratory-based and will be held entirely in person. They will include:
-14 hours of lecturer-led teaching (Didattica Erogativa, DE), devoted to introducing the main concepts related to the statistical techniques covered and to guided examples of data analysis;
-14 hours of interactive teaching (Didattica Interattiva, DI), devoted to individual exercises and data analyses performed under the lecturer's supervision.
No remote teaching activities are planned. The laboratory will be held in Italian.

Assessment methods

During the laboratory meetings, students will complete specific exercises on the two main topics covered, namely Analysis of Variance and Multiple Linear Regression, to refine their ability to assess the validity of hypotheses by conducting appropriate analyses and adequately interpreting the results.
There will be a final written assessment consisting of a combination of multiple-choice questions and open-ended questions based on data analysis. The assessment will be evaluated on the basis of the accuracy of the analyses conducted and the adequacy of the interpretation of the results.
Successful completion of the laboratory requires both attendance of at least 70% of the total 28 hours and passing the final assessment, which will take place during the last laboratory meeting.

Textbooks and Reading Materials

Gallucci, M., Leone, L., & Berlingeri, M. (2017). Modelli statistici per le scienze sociali. Pearson
Navarro DJ & Foxcroft DR (2025). Learning statistics with Jamovi: a tutorial for beginnes in statistical analyses. Cambridge, UK: Open Book Publishers. https://davidfoxcroft.github.io/lsj-book/; https://www.learnstatswithjamovi.com/)

Sustainable Development Goals

QUALITY EDUCATION