

STATISTICS FOR LANGUAGE STUDIES

Calendari	7 th , 14 th , 21 st & 28 th of May
Aula	Virtual (hosted through Zoom)
Durada	8 hours (synchronous Zoom meetings) + 8 hours of preparatory individual work
Llengua d'impartició	English
Format	Asynchronous (previous individual work) + Synchronous (Zoom meetings)
Número màxim d'assistents	25
Destinatari	Graduate students

Ponents

- Scott James Perry (University of Alberta) – sperry1@ualberta.ca
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Competències

- ☒ Methodological competence (CM)
- ☒ Digital competence (CDD)
- ☒ Others: Analytical competence

Objectius

- To analyze your data, you do not need previous knowledge of programming or mathematics. This course will demonstrate that R, as a software environment, is accessible to everyone. We will give you the tools and knowledge you need to be able to analyze your data, whether you have already collected it or not.
- At the end of this course, you will be able to:
 1. Perform quantitative data analysis using the R environment
 2. Justify the use of one statistical analysis over another
 3. Interpret and communicate results of statistical analyses
 4. Visualize results and data of various natures

Continguts

Week Content

- 1 Getting started with R
 - Why use R?
 - Installing R and RStudio
 - Downloading packages
 - Loading data into R
 - Searching for help when using R
 - Basic data manipulation
 - Types of variables
- Descriptive statistics
 - Measures of central tendency and dispersion
 - Distributions
 - Frequency and proportion tables
- Exploratory data analysis
 - Data visualization
- Correlations
- 2 Null Hypothesis Significance Testing (NHST)
 - What is the null hypothesis?
 - What is the p -value?
 - Type I and Type II errors
- t-tests
 - Independent samples vs. Paired samples
 - Assumptions
 - Non-parametric alternatives
- ANOVAs
 - One-way ANOVA, Two-way ANOVA, Repeated-measures
 - Interactions
 - Assumptions
 - Non-parametric alternatives
- Chi-square
- 3 Linear regression (simple and multiple regression)
 - Assumptions
 - Variable selection
 - Interpreting regression output
- Generalized linear regression
 - Poisson regression
 - Binomial regression
- 4 Mixed models
 - Fixed vs. random effects
 - Random intercepts and slopes
 - Variable selection
 - Model comparison
- Generalized mixed models

Metodologia

- This course does not require any previous knowledge of R or RStudio. All of the necessary knowledge will be presented in a gradual manner.
- This course follows the flipped classroom methodology: attendees are expected to attend the synchronous classes after having viewed the lecture videos and having completed the assigned activities.
- Both instructors will be available to all students to resolve any doubts and provide support for the length of the course. In order to receive individual attention, attendees:
 - Must complete asynchronous content (videos + activities)
 - Must attend the four Zoom sessions

Avaluació

- The course will not have a formal evaluation and student success will be assessed based on their ability to analyze data and report findings at the end of the course

Característiques de l'aula

- ☒ Moodle
- ☒ Students need access to a computer and the internet