UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Statistical Methods for the Territorial and Social Environment

2223-2-F7601M007-F7601M017M

Learning objectives

The course will give to the students the advanced statistical knowledge necessary to independently perform quantitative analysis and interpretation of the results concerning the tourism phenomena.

Contents

During the course of the *Territorial and social statistics* will be presented the methods of multivariate statistical analysis with special focus on those most commonly used for the analysis , where for the environment is understood as a territory and as the one constituted by the conditions of life and work, from income level, educational level and the community to which an individual belongs. The course will illustrate the use of the SPSS software for the solution of real problems.

Detailed program

Agresti A., Finlay B. “Statistical Methods for the Social Sciences” *Pearson International Edition (fourth Edition)*

Ch1: Introduction (pag. 1-7)

- Introduction to Statistical Methodology

- Descriptive Statistics and Inferential Statistics

- The Role of Computers In statistics

Ch2: Sampling and Measurement (pag. 11-21)

- Variables and their measurement

- Randomization

- Sampling Variability and Potential Bias

Ch 3: Descriptive Statistics (pag. 31-59)

- Describing Data with Tables and Graphs

- Describing the Center of the Data

- Describing Variability of the Data

- Measures of Position

- Bivariate Descriptive Statistics

- Sample Statistics and Population Parameters

Ch8: Analyzing Association between Categorical Variables (pag. 221-239)

- Contingency tables

- Chi-Squared Test of Independence

- Residuals: Detecting the Pattern of Association

- Measuring Association In Contingency Tables

Ch9: Linear regression and correlation (pag.255-283)

- Linear Relationships

- Least Squares Prediction Equation

- The Linear Regression Model

- Measuring Linear Association: the Correlation

- Inference for the Slope and Correlation

Ch10: Introduction to multivariate relationship (pag. 301-313)

- Association and Causality

- Controlling for Other Variables

- Types of Multivariate Relationships

Ch11: Multiple Regression and Correlation (pag. 321-340;345-355)

- The Multiple Regression Model

- Example with Multiple Regression Computer Output

- Multiple Correlation and R^2

- Inference for Multiple Regression Coefficients

- Comparing Regression Models

- Partial Correlation

- Standardized Regression Coefficients

Combining Regression and ANOVA: Quantitative and Categorical Predictors (pag. 416-419)

- Regression with Quantitative and Categorical Predictors

Prerequisites

Univariate descriptive statistics

Teaching methods

the lessons will be frontal. During the lectures, the topics explained will be dealt with from a theoretical point of view and through empirical cases. The SPSS software will also be shown.

Assessment methods

The assessment includes a written exam and a group work. The written exam will evaluate the theoretical knowledge of the topics. The group work will evaluate the knowledge of SPSS.

Textbooks and Reading Materials

Agresti A., Finlay B. “Statistical Methods for the Social Sciences” *Pearson International Edition (fourth Edition).*

Semester

Second semester

Teaching language

English

Sustainable Development Goals

SUSTAINABLE CITIES AND COMMUNITIES