UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Metodi Statistici per il Marketing

2627-1-F7704M004-F7704M004-2

Learning objectives

1. **Knowledge and understanding.** By the end of the module, students understand the fundamental concepts of probability, random variables, sampling distributions, estimation, hypothesis testing, confidence intervals, and multiple linear regression.

2. **Applying knowledge and understanding.** Students can formulate and solve statistical inference problems involving sample data and build and use a linear regression model to analyse relationships between variables.

3. **Making judgements.** Students can choose among the methods covered according to the research question and available data, assess their underlying assumptions, and interpret results critically while accounting for statistical uncertainty.

4. **Communication skills.** Students can explain the method used, the results, and their limitations using appropriate statistical language, including in relation to a marketing problem.

5. **Learning skills.** Students acquire the foundations needed to study more advanced statistical methods independently and to read and understand quantitative analyses based on sample data.

Contents

The fundamental concepts of probability theory and statistical inference will be introduced throughout the course, with additional insights on the linear regression model.

Detailed program

1. Probability Theory

- Definition of probability, axioms, and properties
- Random variables
- Law of large numbers and central limit theorem

2. Inference

- Random samples and sampling distributions
- Theory of estimation
- Hypothesis testing and confidence intervals

3. Linear Regression Models

- Model construction and inference

Prerequisites

Basic knowledge of Mathematical Analysis concepts (study of functions, matrices, summations, and products).

Teaching methods

Frontal lessons and exercises carried out in class (with some references to the use of statistical softwares).

Assessment methods

Written exam

Textbooks and Reading Materials

"Statistica per le decisioni." Domenico Piccolo. Il Mulino.

Semester

Teaching language

Italian

Sustainable Development Goals