UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Inference Principle for Tourism Applications

2425-1-F7601M075

Learning objectives

The course is divided into two parts.

1. Principi di inferenza
2. Applicazioni Statistiche per il turismo

The first part has the goal to provide the students with some elementray notions of probability and statistical inference for touristic applications. The second part aims to provide important statistical tools useful for solving problems related to time series components of tourism demand and autocorrelation in tourism time series.

Contents

In the first part of the course, we will start with some basics on probability and we introduce the notion of random variables (discrete and continuous case). We will concentrate especially on Binomial and Normal random variables. All these notions will then be applied to statistical inference for estimation and testing problems.
In the second part of the course, we will concentrate on the study of components of the tourism demand, stochastic processes and autocorrelation functions.

Detailed program

PART 1. The following topics will be covered.

1. **DESCRIPTIVE STATISTICS**. Statistics and distributions of frequencies. Indices of postion and variabilty.
2. **PROBABILITY**. Definition of a probability space and properties of the probability.

3. **RANDOM VARIABLES**. Random variables (discrete and continuous case). The normale and Binomial distributions. The central limit theorem: hints.
4. **ESTIMATION**. Estimation of means and proportions based on a sample of size n. Confidence intervals for means and proportions.
5. **HYPOTHESIS TESTING**. Introduction to tests for means and proportions in the context of a single population.

PART 2 the following topics will be covered.

1. Study of the components of the medium to long term (trend-cycle) and short term (seasonality) tourism demand.
2. Moving averages and applications in the field of tourism.
3. Stochastic processes: definitions, properties and examples.
4. Global and partial autocorrelation functions and corresponding estimators.
5. Hypothesis testing with the autocorrelation functions and examples of application in the field of tourism.

Prerequisites

None.

Teaching methods

See the syllabus of the two parts of the curse for the different teaching methods.

Assessment methods

The exam is written, the oral test is not mandatory. In the written test, the student is asked to solve exercises and to answer some questions concerning statistical inference.
The oral test is optional, and it may be requested by the student or by the instructor some days after the written test. The oral exam will focus on questions of the theory developed during the course.

Textbooks and Reading Materials

PART 1.

- S.M. Ross (2014). Introduzione alla Statistica. Apogeo Education, seconda edizione.

PART 2.

- Bohrnstedt G.W., Knoke D., Statistica per le scienze sociali, Il Mulino, Bologna, 1998.
- Piccolo D., Vitale C., Metodi statistici per l’analisi economica, Il Mulino, Bologna, 1984.

Semester

Fall semester.

Teaching language

Italian.

Sustainable Development Goals

QUALITY EDUCATION