# Social Statistics

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***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The aim of the course is to provide students with the quantitative instruments for constructing and interpreting summary indicators of data in the fields of arts management. The approach is practical and application-oriented. Particular attention will be paid to real cases and laboratory exercises with the aid of tools widely used in the corporate world. An attention is also devoted to the use of statistical software (Excel or SPSS).

The following learning abilities are provided and expected to be achieved by participants at the end of the course:

1. Knowledge of concepts, terms and methods of descriptive statistics, probability, statistical inference and regression analysis.
2. Ability to correctly apply methods of descriptive statistics, probability and statistical inference to arts management problems.
3. Quantitative thinking addressed to make independent judgements, driven by a rigorous reasoning and a descriptive and inferential statements.
4. Ability to read and interpret data and communicate results, through the extraction of qualitative information from data.
5. Mastery of tools useful for quantitative analyses required in their careers involving management of arts’ data, rigorous reasoning and data-driven decision-making.

***COURSE CONTENT***

1. *Measuring, describing and establishing relations between data.*

Steps, strategies and data quality in statistical surveys. Indicators. Charts and graphs. Relationships between two variables. Analysis of simple dependence.

2. *How to choose representative sample of the population*.

 Sampling techniques and sample distribution. Normal probability density function and central theorem of the limit.

*3. Measuring uncertainty.*

Standard errors, Confidence interval for mean and proportion.

4. *From correlation to causality.*

Beyond the two variables. Spurious associations and causal relationships. Explanation by mechanisms.

5. *Exploratory data analysis models.*

Linear regression models. The multiple regression approach. Logistic regression.

6. *Software applications.*

Introduction to Excel, Gretl or SPSS.

***READING LIST***

The materials will be indicated by the lecturers during the course.

Students not attending class regularly can integrate the material provided on the *Blackboard* platform with:

MECATTI, F. *Statistica di base. Come, quando e perché.* McGraw Hill, 2010 [the course topics are covered in chapters: 1-5,7,9-10,14-18].

A similar English textbook can be suggested on demand.

Only for advanced topics:

M. Gallucci, L. Leone, M. Berlingeri, *Modelli statistici per le scienze sociali.* Pearson, 2017 [Gli argomenti del programma sono trattati nei capp. 2-3, 5-7].

***TEACHING METHOD***

Lectures.

***ASSESSMENT METHOD AND CRITERIA***

The assessment consists of a written exam made by 3 exercises and 2 theoretical questions with open-ended answers.

 Students attending class regularly have the possibility to substitute the written exam with two partial tests which contribute equally to the final evaluation: the first test is planned during the class period on the contents of the first module and the second one during the winter exam session on the contents of the second module. More detailed information about the assessment process is available on the e-learning platform *Blackboard.*

Aim of the exam is to assess reasoning analytic abilities on the course subjects. Language properties and communication abilities are also assessed.