SYLLABUS DEL CORSO

Campionamento per l'Audit (audit Sampling)

2425-1-F7701M137-F7701M137-1

Learning objectives

At the end of the course, students will be able to perform various sampling techniques for auditing. Specifically, students will be able to:

- Understand the basic principles of statistical and non-statistical sampling and their importance in the context of auditing.
- Apply sampling techniques to select and test samples using specific software and tools.
- Improve the effectiveness and efficiency of auditing through appropriate use of sampling, understanding the impact of sample size and selection on results.
- Apply sampling techniques in real audit scenarios through case studies and simulations, developing the ability to solve practical problems.

Contents

The course will cover the following aspects in depth:

- Italian Regulatory References for Audit Sampling
- Audit Risk Model and Audit Procedures
- Statistical Concepts Related to Operational Audits
- Sampling Methods for Auditing

Detailed program

1. Statistical Sampling

1.1 Use of sampling in business auditing.
1.2 Probabilistic and non-probabilistic sampling.
1.3 Sampling errors and non-sampling errors.

2. Simple Random Sampling with and without Replacement/In Blocks
2.1 Introduction.
2.2 Sample mean.
2.3 Sample proportion.
2.4 Estimator of the total.
2.5 Estimator of the accounting error.
2.5.1 Estimator of the total accounting error (average per unit method, average rate method).
2.5.2 Determination of the upper limit of the accounting error and auditor's decision.

3. Methods of Selecting a Sample with or without Replacement
3.1 Definition of the sampling base.
3.2 Random extraction from a list of elements.
3.3 Systematic sampling.
3.4 Problems related to sample selection.

4. Stratified Sampling
4.1 Sample mean.
4.1.1 Proportional stratified sampling.
4.1.2 Optimal stratified sampling for a fixed sample size.
4.1.3 Efficiency gain due to stratification.
4.1.4 Confidence intervals for the mean, choice of sample size, and hypothesis testing.
4.2 Sample proportion.
4.2.1 Proportional stratified sampling.
4.2.2 Optimal stratified sampling for a fixed sample size.
4.2.3 Efficiency gain due to stratification.
4.2.4 Confidence intervals for the mean, choice of sample size, and hypothesis testing.
4.3 Estimator of the total.
4.4 Estimator of the accounting error.
4.4.1 Estimator of the total accounting error (average per unit method for proportional stratified sampling).
4.4.2 Determination of the upper limit of the accounting error and auditor's decision.

5. Sampling for Monetary Units
5.1 Introduction and definition.
5.2 Sample selection method.
5.3 Estimator of the accounting error.
5.3.1 Conservative approach.
5.3.1.1 Tables of reliability factors: reading and interpretation.
5.3.1.2 Determination of sample size.
5.3.1.3 Determination of total accounting error.
5.3.1.4 Determination of the upper limit of the accounting error and auditor's decision.
5.3.2 Conventional approach.
5.3.2.1 Determination of sample size.
5.3.2.2 Determination of total accounting error.
5.3.2.3 Determination of the upper limit of the accounting error and auditor's decision.

Prerequisites

Basic course of statistics, probability and inference (refer to the course * Metodi Statistici per le amministrazione

delle imprese *, 2nd year, Bachelor's Degree Course in Economia ed amministrazione delle imprese -ECOAMM-
https: //elearning.unimib.it /course/view.php?id=38771)

Teaching methods

The course includes 25 hours of didactic activities (frontal classroom lectures) and 10 hours of interactive activities in the statistical laboratory (use of Excel and R).

If the laboratories are unavailable due to building renovations, part of the laboratory activities will be conducted in-person (approximately 4 hours) and part remotely (approximately 6 hours).

During the lectures, exercises and demonstrations will be assigned and must be submitted to the instructor through the MOODLE platform.

Assessment methods

The examination consists of a written test with theoretical questions, exercises, and result interpretation, as well as the submission of a project involving the analysis of business cases using Excel and/or R software.

The written test is designed to assess the understanding of the introduced methods, the ability to select the most appropriate statistical method for a given purpose, and the ability to interpret the obtained results.

The project is intended to evaluate the ability to implement the analysis using Excel and/or R software.

Submission of the project is mandatory.

The project will be graded from 0 to 3 points, which will be added to the written test score if the latter is 18 or higher.

Textbooks and Reading Materials

Pollastri Angiola *Elementi di Teoria dei Campioni,* CUSL, Milano

Pollastri Angiola *Esercizi di Teoria dei Campioni,* CUSL, Milano

Gruppo24Ore Le tecniche di campionamento nella revisione

Commissione Europea Guida ai metodi di campionamento per le autorità di audit (cap 4-5; 6.3: pagg 89-99)

Guy, D.M., Carmichael, D. R., Whittington, R. (2002) *Audit Sampling. An Introduction* (Fifth edition), Wiley

Reading Materials provided by the teacher.

Semester

First semester

Teaching language

Italian language

Sustainable Development Goals

INDUSTRY, INNOVATION AND INFRASTRUCTURE