

StatHarbor-004: Analysis of Variance (ANOVA)

Overall Objective:

This course aims to introduce participants to the analysis of how a quantitative variable behaves in relation to one or more categorical variables.

Specific Objectives:

By the end of this course, participants will be able to:

- Comprehend the fundamental concepts underlying the analysis of variance.
- Select the appropriate ANOVA model for a given dataset.
- Interpret the results obtained from ANOVA models.
- Validate ANOVA models using suitable methods.

Prerequisite:

StatHarbor-001: Introduction to Descriptive Statistics.

StatHarbor-002: Introduction to R Software.

Course Content:

1. Comparison of Two Means
2. One-Way ANOVA (One-factor model)
3. Multiple Comparison Techniques
4. Two-Way ANOVA (Two-factor model)
5. Examination of Experimental Designs, including Completely Randomized Designs and Randomized Block Designs

Learning Process:

The course will be conducted online, requiring participants to actively engage with the course material and complete exercises. Spanning two months, it includes 16 hours of instruction, organized into weekly 2-hour sessions. These sessions are designed to address participants' queries and facilitate a deeper understanding of the subject. Participants will have access to practical exercises using R or Excel software, along with relevant data files for statistical analysis. Additional learning resources include video materials. The course commences with a placement test and concludes with a final assessment. Successful participants will receive a certificate of completion.