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Introduction to Statistical Analysis Using IBM SPSS Statistics (v24)  
Information

**Length:** 2.0 Days  
**Ref:** 0G515G-X  
**Delivery method:** Classroom  
**Price:** EUR

Overview

Introduction to Statistical Analysis Using IBM SPSS Statistics (v24) provides an application-oriented introduction to the statistical component of IBM® SPSS® Statistics. Students will review several statistical techniques and discuss situations in which they would use each technique, the assumptions made by each method, how to set up the analysis, as well as how to interpret the results. This includes a broad range of techniques for exploring and summarizing data, as well as investigating and testing underlying relationships. Students will gain an understanding of when and why to use these various techniques as well as how to apply them with confidence, interpret their output, and graphically display the results. This course uses the IBM SPSS Statistics Base features.

Public

- Anyone who has worked with IBM SPSS Statistics and wants to become better versed in the basic statistical capabilities of IBM SPSS Statistics Base
- Anyone with limited or no statistical background
- Anyone who wants to refresh their knowledge and statistical experience that were gained many years ago

Prerequisites

- General computer literacy.
- Completion of the "Introduction to IBM SPSS Statistics" course or experience with IBM SPSS Statistics (Version 18 or later) including familiarity with opening, defining, and saving data files and manipulating and saving output.

Objective

Please refer to course overview.

Topics

1. Introduction to statistical analysis
  - Explain the difference between a sample and a population
  - Explain the difference between an experimental research design and a non-experimental research design

- Explain the difference between independent and dependent variables
2. Examine individual variables
    - Describe the levels of measurement used in IBM SPSS Statistics
    - Use graphs to examine variables
    - Use summary measures to examine variables
    - Explain normal distributions
    - Explain standardized scores and their use
  3. Test hypotheses-theory
    - Explain the difference between a sample and a population
    - Design a test of a hypothesis
    - Explain the alpha level
    - Explain the difference between statistical and practical significance
    - Describe the two types of errors in testing a hypothesis
  4. Test hypotheses about individual variables
    - Explain the sampling distribution of a statistic
    - Explain the difference between the standard deviation and the standard error
    - Use the One-Sample T Test to test a hypothesis about a population mean
    - Use the Paired-Samples T Test to test on a "before-after treatment" effect
    - Use the Binomial Test to test a hypothesis about a population proportion
  5. Test the relationship between categorical variables
    - Use the Chart Builder to graphically illustrate the relationship between two categorical variables
    - Use percentages in Crosstabs to describe the relationship between two categorical variables
    - Use the Chi-Square test in Crosstabs to test the relationship between two categorical variables
  6. Test the difference between two group means
    - Use the Chart Builder to graphically illustrate the difference between two group means
    - Use Explore and Means to describe the differences between groups
    - Use the Independent-Samples T Test to test whether the difference between two group means is statistically significant
  7. Test the differences between more than two group means
    - Use One-Way ANOVA to determine whether there are statistically significant differences between means of three or more groups
    - Use post hoc tests to detect differences between group means
  8. Test the relationship between scale variables
    - Chart the relationship between two scale variables
    - Use Pearson's correlation coefficient to examine the relationship between two scale variables
    - Test hypotheses on Pearson's correlation coefficient
    - Assumptions for using Pearson's correlation coefficient
  9. Predict a scale variable
    - Use Linear Regression to predict a scale variable with one or more scale variables
    - Use Automatic Linear Modeling to predict a scale variable with categorical and scale variables

## 10. Explore nonparametric tests

- Describe when Nonparametric Tests should and can be used
- Use Nonparametric Tests for two or more independent samples
- Use Nonparametric Tests for two dependent samples

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