Statistical Analysis Using IBM SPSS Statistics (V25)

Course#:0G51AG
Duration:2 Days
Price:1800.00

Course Description

This course 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, 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 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.

Learning Journeys that reference this course:

Data Science
iBM SPSS Statistics V25.x
Machine Learning

Objectives

Introduction to statistical analysis
Examine individual variables
Test hypotheses about individual variables
Test the relationship between categorical variables
Test on the difference between two group means

Test on differences between more than two group means

Test the relationship between scale variables

Predict a scale variable: Regression

Introduction to Bayesian statistics

Overview of multivariate procedures

Audience

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 who wants to refresh their knowledge and statistical experience.

Prerequisites

Familiarity with basic concepts in statistics, such as measurement levels, mean, and standard deviation.

Familiarity with the windows in IBM SPSS Statistics either by experience with IBM SPSS Statistics (version 18 or later) or completion of the IBM SPSS Statistics Essentials (V25) course.

Content

Introduction to statistical analysis

Identify the steps in the research process

Principles of statistical analysis

Examine individual variables

Identify measurement levels

Chart individual variables

Summarize individual variables

Examine the normal distribution

Examine standardized scores

Test hypotheses about individual variables

Identify population parameters and sample statistics

Examine the distribution of the sample mean

Determine the sample size

Test a hypothesis on the population mean

Construct a confidence interval for the population mean

Tests on a single variable: One-Sample T Test, Paired-Samples T Test, and Binomial Test

Test the relationship between categorical variables
 Chart the relationship between two categorical variables
 Describe the relationship: Compare percentages in Crosstabs
 Test the relationship: The Chi-Square test in Crosstabs
 Assumptions of the Chi-Square test
 Pairwise compare column proportions
 Measure the strength of the association

Test on the difference between two group means
 Compare the Independent-Samples T Test to the Paired-Samples T Test
 Chart the relationship between the group variable and scale variable
 Describe the relationship: Compare group means
 Test on the difference between two group means: Independent-Samples T Test
 Assumptions of the Independent-Samples T Test

Test on differences between more than two group means
 Describe the relationship: Compare group means
 Test the hypothesis of equal group means: One-Way ANOVA
 Assumptions of One-Way ANOVA
 Identify differences between group means: Post-hoc tests

Test the relationship between scale variables
 Chart the relationship between two scale variables
 Describe the relationship: Correlation
 Test on the correlation
 Assumptions for testing on the correlation
 Treatment of missing values

Predict a scale variable: Regression
 What is linear regression?
 Explain unstandardized and standardized coefficients
 Assess the fit of the model: R Square
 Examine residuals
 Include 0-1 independent variables
 Include categorical independent variables

Introduction to Bayesian statistics

Bayesian statistics versus classical test theory

Explain the Bayesian approach

Evaluate a null hypothesis: Bayes Factor

Bayesian procedures in IBM SPSS Statistics

Overview of multivariate procedures

Overview of supervised models

Overview of models to create natural groupings