

## **Introduction to SPSS**

- Introduction to IBM SPSS Statistics
- Using the IBM SPSS Statistics Help System
- Reading Excel and text data files
- Entering data directly into the Data Editor Window
- Defining variable attributes and labels
- Working with multiple data sources
- Summarizing individual variables: Frequencies and Descriptive
- Basic operations for modifying data values
- Describing relationships between variables: Crosstabs
- Creating and editing charts
- Selecting subsets of cases
- Editing and saving IBM SPSS Statistics Output
- Working with Multiple Response Variables

## **Basic Statistical Analysis**

- Introduction to Statistical Analysis
- Describing Categorical Data
- Measures of Central Tendency and Dispersion
- Comparing Categorical Variables: Crosstabs, Chi-square, and Measures of Association
- Mean Differences between Groups: T Test
- Bi-variate plots and correlations
- Introduction to Regression
- Mean differences between Groups: One-Factor ANOVA
- Introduction to Multiple Regression

## **Understanding of Data**

- Distribution Plots for Categorical and Scalar Variables
- Explore Boxplots and Inter-quartile Range
- Descriptives, Crosstabs and Means Procedure Output
- Chart Builder, Chart Editor and Pivot Table Editor
- Exporting Tables and Charts

## **Data Management**

- Adding Cases to a Dataset
- Adding Variables to a File
- Selecting Cases
- Aggregating Variables
- Identifying Duplicate Cases

## **Inferential Statistics**

- Crosstabs and Chi-Square
- Correlations and Scatter plots
- Regression Analysis Output Tables
- Sample Size, Hypothesis Testing and Statistical Errors
- T-Tests: Independent-Samples vs. Paired Samples

## **Advanced Statistical Analysis**

- Factor analysis
- Repeated Measures ANOVA
- Discriminant analysis
- Binary logistic regression
- Multinomial logistic regression

## **Regression in Depth**

- Running stepwise regression
- Stepwise regression output
- Running multiple regression
- Assumptions of the linear model
- Residuals and influential points
- Introduction to regression
- Simple regression output
- Fitting lines to data
- Logistic regression output
- Running logistic regression
- Influential points and multi co linearity
- Examining the data
- Running simple regression
- Multiple regression output

## **ANOVA in Depth**

- Introduction to analysis of variance (ANOVA)
- ANOVA assumptions
- One-way Univariate ANOVA
- Multi-way Univariate ANOVA
- Multivariate analysis of variance
- Mixed model ANOVA

## **TIME SERIES Analysis**

- Bulk Forecasting using Expert Modeler
- Evaluating the Model & Interpreting it
- Saving the model for future use

- Re-forecasting using saved models
- Evaluating model fitment statistics
- Expert Modeler to determine significant predictors
- ARIMA Model parameter table & Interpretation
- Experimenting with Predictors
- Seasonal decomposition models
- Removing seasonality from data
- Interpretation of the Output