Statistical Analysis Using IBM SPSS Statistics (V25)

Introduction to statistical analysis
• Identify the steps in the research process
• Principles of statistical analysisExamine individual variables
• Identify measurement levels
• Chart individual variables
• Summarize individual variables
• Examine the normal distribution
• Examine standardized scoresTest 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 TestTest 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 associationTest 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 TestTest 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 testsTest 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 valuesPredict 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 variablesIntroduction to Bayesian statistics
• Bayesian statistics versus classical test theory

- Explain the Bayesian approach
- Evaluate a null hypothesis: Bayes Factor
- Bayesian procedures in IBM SPSS StatisticsOverview of multivariate procedures
- Overview of supervised models
- Overview of models to create natural groupings