

## Statistical Analysis Using IBM SPSS Statistics (V26)

**Duration: 2 Days    Course Code: 0G51BG    Delivery Method: Virtual Learning**

### Overview:

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, and 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 and how to apply them with confidence, interpret their output, and graphically display the results.

### Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

### Target Audience:

- IBM SPS Statistics users who want to familiarize themselves with the statistical capabilities of IBM SPSS Statistics Base.
- Anyone who wants to refresh their knowledge and statistical experience.

### Objectives:

- Introduction to statistical analysis
- Describing individual variables
- Testing hypotheses
- Testing hypotheses on individual variables
- Testing on the relationship between categorical variables
- Testing on the difference between two group means
- Testing on differences between more than two group means
- Testing on the relationship between scale variables
- Predicting a scale variable: Regression
- Introduction to Bayesian statistics
- Overview of multivariate procedures

### Prerequisites:

Experience with IBM SPSS Statistics (version 18 or later), or  
Completion of the IBM SPSS Statistics Essentials course

## Content:

|                                                                                                          |                                                                                                        |                                                                                                            |
|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Introduction to statistical analysis                                                                     | <ul style="list-style-type: none"> <li>• Chart the relationship</li> </ul>                             | <ul style="list-style-type: none"> <li>• Describe the relationship</li> </ul>                              |
| <ul style="list-style-type: none"> <li>• Identify the steps in the research process</li> </ul>           | <ul style="list-style-type: none"> <li>• Describe the relationship</li> </ul>                          | <ul style="list-style-type: none"> <li>• Test the hypothesis of independence</li> </ul>                    |
| <ul style="list-style-type: none"> <li>• Identify measurement levels</li> </ul>                          | <ul style="list-style-type: none"> <li>• Test the hypothesis of independence</li> </ul>                | <ul style="list-style-type: none"> <li>• Assumptions</li> </ul>                                            |
| Describing individual variables                                                                          | <ul style="list-style-type: none"> <li>• Assumptions</li> </ul>                                        | <ul style="list-style-type: none"> <li>• Treatment of missing values</li> </ul>                            |
| <ul style="list-style-type: none"> <li>• Chart individual variables</li> </ul>                           | <ul style="list-style-type: none"> <li>• Identify differences between the groups</li> </ul>            | Predicting a scale variable: Regression                                                                    |
| <ul style="list-style-type: none"> <li>• Summarize individual variables</li> </ul>                       | <ul style="list-style-type: none"> <li>• Measure the strength of the association</li> </ul>            | <ul style="list-style-type: none"> <li>• Explain linear regression</li> </ul>                              |
| <ul style="list-style-type: none"> <li>• Identify the normal distribution</li> </ul>                     | Testing on the difference between two group means                                                      | <ul style="list-style-type: none"> <li>• Identify unstandardized and standardized coefficients</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Identify standardized scores</li> </ul>                         | <ul style="list-style-type: none"> <li>• Chart the relationship</li> </ul>                             | <ul style="list-style-type: none"> <li>• Assess the fit</li> </ul>                                         |
| Testing hypotheses                                                                                       | <ul style="list-style-type: none"> <li>• Describe the relationship</li> </ul>                          | <ul style="list-style-type: none"> <li>• Examine residuals</li> </ul>                                      |
| <ul style="list-style-type: none"> <li>• Principles of statistical testing</li> </ul>                    | <ul style="list-style-type: none"> <li>• Test the hypothesis of two equal group means</li> </ul>       | <ul style="list-style-type: none"> <li>• Include 0-1 independent variables</li> </ul>                      |
| <ul style="list-style-type: none"> <li>• One-sided versus two-sided testing</li> </ul>                   | <ul style="list-style-type: none"> <li>• Assumptions</li> </ul>                                        | <ul style="list-style-type: none"> <li>• Include categorical independent variables</li> </ul>              |
| <ul style="list-style-type: none"> <li>• Type I, type II errors and power</li> </ul>                     | Testing on differences between more than two group means                                               | Introduction to Bayesian statistics                                                                        |
| Testing hypotheses on individual variables                                                               | <ul style="list-style-type: none"> <li>• Chart the relationship</li> </ul>                             | <ul style="list-style-type: none"> <li>• Bayesian statistics and classical test theory</li> </ul>          |
| <ul style="list-style-type: none"> <li>• Identify population parameters and sample statistics</li> </ul> | <ul style="list-style-type: none"> <li>• Describe the relationship</li> </ul>                          | <ul style="list-style-type: none"> <li>• The Bayesian approach</li> </ul>                                  |
| <ul style="list-style-type: none"> <li>• Examine the distribution of the sample mean</li> </ul>          | <ul style="list-style-type: none"> <li>• Test the hypothesis of all group means being equal</li> </ul> | <ul style="list-style-type: none"> <li>• Evaluate a null hypothesis</li> </ul>                             |
| <ul style="list-style-type: none"> <li>• Test a hypothesis on the population mean</li> </ul>             | <ul style="list-style-type: none"> <li>• Assumptions</li> </ul>                                        | <ul style="list-style-type: none"> <li>• Overview of Bayesian procedures in IBM SPSS Statistics</li> </ul> |
| <ul style="list-style-type: none"> <li>• Construct confidence intervals</li> </ul>                       | <ul style="list-style-type: none"> <li>• Identify differences between the group means</li> </ul>       | Overview of multivariate procedures                                                                        |
| <ul style="list-style-type: none"> <li>• Tests on a single variable</li> </ul>                           | Testing on the relationship between scale variables                                                    | <ul style="list-style-type: none"> <li>• Overview of supervised models</li> </ul>                          |
| Testing on the relationship between categorical variables                                                | <ul style="list-style-type: none"> <li>• Chart the relationship</li> </ul>                             | <ul style="list-style-type: none"> <li>• Overview of models to create natural groupings</li> </ul>         |

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### Further Information:

For More information, or to book your course, please call us on 00 971 4 446 4987

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