Parkland College
Arba Minch
Short Term Trainings Programs

Advanced Statistical Analysis using SPSS

About the Course

In the socioeconomic and business context, conducting research, data management and data analysis are imperative for informed decision making. The availability of several datasets and research techniques open the gateway of conducting systematic research which will be helpful for consumers, businesses and organizations. A sound knowledge about the use of SPSS Software as a data management and analysis tool is very beneficial for the researchers. This course introduces you to a range of advanced statistical modelling techniques within SPSS Software Statistics and covers how and when they should be used.

Target Participants

Anyone who has worked with IBM SPSS Statistics Software for Windows and wants to become better versed in the more advanced statistical capabilities of SPSS Statistics Software. Anyone who has a solid understanding of statistics and wants to expand their knowledge of appropriate statistical procedures and how to set them up using SPSS Statistics.

Course Duration

- 15 Days at 8 hours a day

What you will learn

By the end of this course the participants will be able to:

- A broad range of advanced statistical models
- Issues best addressed by certain statistical techniques
- Data considerations for choice of optimal techniques
- Evidence based modeling and reporting

Course Outline

1. Regression Analysis
    1.1 Introduction
    1.2 Simple Linear Regression
    1.3 Simple Linear Regression Assumptions
    1.4 Requesting Simple Linear Regression
    1.5 Simple Linear Regression Output
    1.6 Procedure: Simple Linear Regression
    1.7 Demonstration: Simple Linear Regression
    1.8 Multiple Regression
    1.9 Multiple Linear Regression Assumptions

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6.5. Proportionality Assumption

6.6. Example - Diabetes Data Set

7. Cluster Analysis

7.1. Introduction

7.2. Introduction to unsupervised machine learning methods

7.3. Introduction to clustering

7.4. Overview of clustering uses for learning analytics

7.5. Overview of k-means and hierarchical clustering methods

7.6. K-means clustering theory

7.7. K-means full example

7.8. Hierarchical clustering theory

7.9. Hierarchical clustering full example

7.10.   Practical considerations

7.11.   Practical considerations

7.12.   How to interpret clustering results

7.13.   Overview of more advanced clustering methods

8. Principal Components Analysis

8.1. Singular Value Decomposition (SVD)

8.2. Principal Components

8.3. Principal Components Analysis (PCA)

8.4. Geometric Interpretation

8.5. Example - Data Set

9. Factor analysis

9.1. Introduction to Exploratory Factor Analysis

9.2. Factor Analysis Applications

9.3. CFA and Path Analysis with SPSS

9.4. 10. Log-Linear Models

9.5. Log-Linear Models for Two-way Tables

9.6. Log-linear Models for Three-way Tables

9.7. Example: Data Set

Training Approach

This course is delivered by our seasoned trainers who have vast experience as expert professionals in the respective fields of practice. The course is taught through a mix of practical activities, theory, group works and case studies.

Training manuals and additional reference materials are provided to the participants.

Certification

Upon successful completion of this course, participants will be issued with a certificate.

Prerequisites

Basic statistical knowledge and prior working knowledge of SPSS software are required for this course.

Tailor-Made Course

We can also do this as tailor-made course to meet organization-wide needs. A training needs assessment will be done on the training participants to collect data on the existing skills, knowledge gaps, training expectations, and tailor-made needs.