

Computing Lab

Data analysis using Statistical Package for Social Sciences (SPSS)

Course category : Proficiency course

Schedule of offering : 4th Semester

Course credit structure : 1 credit

Lab sessions : 1 session of 2 hours/week

Contact hours per week : 1 session/week

Course Instructor : Sarin Dominic

Introduction

SPSS (Statistical Package for Social Sciences) is a versatile software package designed to undertake a range of statistical procedures. It is widely used by researchers in the field of social sciences. Present course is designed to familiarize students in using SPSS for research purposes.

Course objectives

Upon successful completion of this course, the student should be able to:

- Understand the basic features of SPSS software
- Use the SPSS Graphical User Interface effectively
- Perform descriptive and inferential statistical analysis using SPSS
- Prepare tables and charts using SPSS

Pre-requisites

A good knowledge of basic descriptive and inferential statistics. The student should also be familiar with operating a computer and has a working knowledge in using a spreadsheet application software.

Module-wise topics

Module 1 : Introduction to SPSS

General description of the software, history and versions, salient features, uses and benefits, windows of SPSS, menus and commands, layout of SPSS, terminology in SPSS (case, variables and levels, missing values, identification numbers, case numbers) data : discrete and continuous data, frequency data, parametric and non-parametric data, file management

Module 2 : Entering and modifying data in SPSS

Preparing a codebook, creating and deleting variables and cases, defining variables (name, type, width, decimals, label, values, missing, columns, align, measure), manual input of data, automated input of data, importing data from spreadsheet softwares, grouping data, sorting and filtering data, data transformation (computing new variables, recoding variables, automatic recode, visual binning, ranking cases)

Module 3 : Data analysis using SPSS

Descriptive statistics using SPSS : frequencies, measures of central tendency (mean, median and mode), measures of dispersion (range, minimum, maximum, standard deviation, variance), skewness and kurtosis, Performing inferential statistical analysis using SPSS : T-test (independent, paired), analysis of variance (one-way ANOVA, two-way ANOVA, post-hoc tests), correlation (pearson product moment, spearman's rank correlation), chi-square test

Module 4: Creating tables and charts using SPSS : bar-diagrams, line charts, scatter diagrams, area charts and pie diagrams

Readings and Reference

Antony T., (2019). *Software for business and research*. Prathibha Publications

Field, A., (2019). *Discovering Statistics Using IBM SPSS Statistics*. Sage Publications.

McCormick, K., & Salcedo, J. (2015). *SPSS For Dummies, 3rd Edition*. John Wiley & Sons.

Pandya, K., Bulsari, S., Sinha, S. (2011). *SPSS in Simple Steps*. KoGENT Learning Solutions Inc.;

Pedagogy

The teaching-learning of the course would be organized through lectures and lab sessions. Each lecture will be followed by a computer lab session, where students put their knowledge to practice, and perform tasks that revolve around visualizing data and conducting statistical analyses.

Evaluation Pattern

The mode of evaluation would be through lab examination (40%), lab assignments (30%) and home-work assignments (30%).