



BS (4 Years) for Affiliated Colleges

Code	Subject Title	Cr. Hrs	Semester
GS-404	Introduction to Statistical Data Analysis (SPSS)	3	VII
Year	Discipline		
4	Gender Studies		

This is a basic course in data analysis techniques for the beginners. It is assumed that the students taking this course are computer literate and have ability to use MS Office to fair extent. The course intends to take students through the basic concepts to understand, perform and interpret the descriptive and inferential statistical techniques. The students will be given ample opportunity of hands-on practice using purposely structured data sets for each exercise.

Course Contents

Introduction to SPSS

- Planning the study
- Choosing appropriate scales and measures
- Preparing a questionnaire
- Designing a study
- Preparing a codebook

Starting SPSS

- Working with data files
- SPSS windows; Menus
- Dialogue boxes
- Closing and Saving SPSS File

Preparing the data file

- Defining the variables; Entering data; Modifying the data file; Data entry using Excel;
- Creating a data file and entering data
- Screening and cleaning the data
- Checking for errors ; Finding and correcting the error in the data file; Case summaries

Data Handling in SPSS

- Sorting Cases
- Merging Files
- Aggregating Cases
- Splitting Files
- Selecting Cases
- Recoding Values
- Computing New Variables

Preliminary Analyses

- Descriptive statistics
- Categorical variables; Continuous variables; Missing data; Assessing normality; Checking for outliers; Additional exercises
- Using graphs to describe and explore the data
- Histograms; Bar graphs; Line graphs; Scatterplots; Boxplots; Editing a chart or graph; Importing charts and graphs into Word documents; Additional exercises

- Manipulating data
- Calculating total scale scores; Transforming variables; Collapsing a continuous variable into groups; Collapsing the number of categories of a categorical variable; Additional exercises
- Checking the reliability of a scale
- Details of example; Interpreting the output from reliability; Presenting the results from reliability; Additional exercises
- Choosing the right statistic
- Overview of the different statistical techniques; The decision-making process; Key features of the major statistical techniques; Summary table of the characteristics of the main statistical techniques;

Statistical techniques to explore relationships among variables

- Correlation
- Preliminary analyses for correlation; Interpretation of output from correlation; Presenting the results from correlation; Obtaining correlation coefficients between groups of variables; Comparing the correlation coefficients for two groups; Testing the statistical significance of the difference between correlation coefficients; Additional exercises

Statistical techniques to compare groups

- Assumptions; Type 1 error; Type 2 error; Effect size; Missing data

Non-parametric statistics

- Chi-square; Mann-Whitney U Test; Additional exercises

T-Tests

- Independent-sample t-test; Paired-samples t-test; Additional exercises

One-way analysis of variance

- One-way between ANOVA; Additional exercises

Two-way between-groups ANOVA

- Details of example; Interpretation of output from two-way ANOVA; Presenting the results from two-way ANOVA; Additional analysis

Basic Readings

- Agresti, A. (2007). **An Introduction to categorical data analysis**. Canada: John Wiley & Sons.
 - Field A. (2013). **Discovering Statistics using SPSS Statistics** (4th. Ed). London: SAGE Publications.
 - Pallant J.(2007). **SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS for Windows** (3rd Ed.) England: Open University Press.
 - Gaur A. S. & Gaur S.S. (2009). **Statistical Methods for Practice and Research: A Guide to Data Analysis Using SPSS** (2nd. Ed). Singapore: SAGE Publications
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