Data Analysis
Stages in Data Analysis

- Pre-analytical or Data Preparation
- Data Analysis
- Interpretation of Results
Pre-analytical Stage

Preparing your data to answer your research questions
- Data editing
- Variable Development
- Data Coding
- Error Check
- Pre-analytical Computer Check
Pre-analytical Stage

Data editing

• *Ensure clarity, readability, consistency, competeness*

• *Done immediately*

Variable Development

• *To form composite indices*

• *Issue: Can all variables of interest be generated from items collected?*
Pre-analytical Stage

Data coding

- Translating responses to numbers
- Issues: Pre-coding; Open-ended items; Codebook

Feel for Data

- How good are the scales used?
- How well the coding and data entry done?
- Techniques: Descriptive statistics and Correlation
Pre-analytical Stage

Goodness of Data

• *To determine validity and reliability*

• *Techniques: Cronbach alpha*

Pre-analytical Computer Check

• *Final screening for clarity and consistency*

• *Techniques: Listing and Frequencies*
Data Analysis - Categorization

Purpose of Study
- Exploratory; Test of Differences; Establishing Relationships

Number of Variables
- Univariante; Bivariante; Multivariante

Level of Measurements
- Nominal, Ordinal, Interval & Ratio
Determining the Right Technique

Research Question
- Concern for Central Tendency; Comparing groups; Relationships

Number of Variables
- Univariate; Bivariate; Multivariate

Level of Measurements
- Parametric and Non-parametric
Questioning Sequence

- What is the purpose of the analysis?
- What is the level of measurement?
- How many variables are involved?
Descriptive Analysis

Purpose: To describe the distribution of the variables of interest

Techniques

- **Frequencies Distribution** - if 1 ordinal or nominal variable,
- **Cross-tabulation** - if 2 ordinal or nominal variables
- **Means** - if 1 interval or ratio level variable
- **Means of subgroups** - if 1 interval or ratio level variable by subgroups
Test of Differences

**Purpose:** To evaluate the differences between 2 or more groups with respect to a variable of interest

**Techniques depends on**
- Levels of Measurement of the Variable
- Number of Groups
- Independence of the Groups