Sudan University of science & technology
College of graduate studies

Appropriate Choice of Statistical Technique

Dr. Hamid Humaida
Dept. of Statistics
What Is Statistics

Statistics is a set of tools and techniques that provide the user with input to make wise decisions in the face of uncertainty.

Statistics is a science (some would call it an art) of data: obtaining data, analyzing data, and interpreting data.
TYPE OF DATA

● **Qualitative Data:**
  1. Nominal data
  2. Ordinal data

● **Numerical or Quantitative Data:**
  1. Numerical discrete data
  2. Numerical continuous data
Displaying Data

- **Histogram.** (for displaying quantitative Data)
- **Bar chart.** (for displaying categorical data)
- **Pie chart.** (for displaying categorical data)
- **Scatter plot.**
SUMMARIZING DATA

- Measurement of central Tendency
- Measurement of Dispersion or Variability
- Measurement of symmetry
Measurement of Central Tendency

- Mean or average
- Median
- Mode
Measurement of Dispersion or Variability

- The range
- The standard deviation (std)
- The variance
Measurement of symmetry

- Skewness
The Normal Distribution

- ‘bell-shaped’ distribution
- Described by two parameters
- The mean
- The standard deviation
The Normal Distribution

- One mathematical property of the normal distribution is that exactly 95% of the distribution lies between:

  - **Mean** - 1.96*STD and **Mean** + 1.96*STD
The Normal Distribution

- The Standard Error
- The Confidence interval
  - mean - 1.96*S.E. to mean + 1.96*S.E.