DATA ANALYSIS

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Steps in your research process:

- Step 1: Define Your Questions
- Step 2: Set Clear Measurement Priorities
  - *A) Decide What To Measure*
  - *B) Decide How To Measure It*
- Step 3: Collect Data
- Step 4: Analyze Data
- Step 5: Interpret Results

Variable

- A characteristic that varies from one subject to the other in a given population e.g height, weight, sex, marital status, occupation.
- Dependent and Independent Variables
  - Independent variable(experimental/predictor)>> manipulated in an experiment in order to observe the effect on a dependent variable,
  - Dependent variable>>>variable of interest>outcome (outcome variable*)*
- Qualitative (**categorica**l) variables >>> non-numerical measurements
- quantitative (numerical) variables >>> numerical information
  - *Discrete >> have absolute value/measurement*
  - *Continuous>>don't have absolute value can only be approximated(rounded off)*

Scales

- Nominal scale>>> merely **nam**es e.g occupation, sex ,...
- Ordinal scale>>>**or**der, scale e.g likert scale
- Ratio variables >>>0 (zero) of the measurement indicates that there is none of that variable. E.g height, mass, distance
- Interval variables >>> measured along a continuum have numerical value e.g temperature measured in degrees Celsius or Fahrenheit)..

Data analysis steps:

- Ensure a good data set to start
  - Generally use Excel
  - Entries: extreme outliers
  - missing values)
  - Good data age vs age category
  - Consistency in statistical software
- Refer to the research process
  - *Literature*
  - Specific objectives
- Use dummy results

Data analysis steps:

- 1. First describe and present your data, e.g. frequency distributions in tables or charts
- 2. Calculate basic statistics where possible, e.g. means and standard deviations
- 3. Start to interpret your data – what might it mean?
- 4. Select specific items for closer attention (based on your research hypotheses) 5. Select and carry out the right kind of test
- 5. Interpret your findings in terms of significance levels
- 6. Modify and repeat if necessary

Describing data by tables and graphs

- Qualitative variable>>> number of observations in a particular class (or category) of the qualitative variable is called the frequency (or count) of that class.
- A table listing all classes and their frequencies is called a frequency distribution.
- Percentage of a class>>> dividing the frequency of the class by the total number of observations and multiplying the result by 100.
- Relative frequency of the class >>>Frequency in the class/ Total number of observation
- A table listing all classes and their relative frequencies is called a relative frequency distribution.

HANDS ON!

Epi info

STATA