Content from different reference book suggested by Dr. Anita Morey Mam and mentioned in CDA Syllabus file, Presentations, Notes provided in 2023

NOTES ON BASIS OF CDA PPT DESCRIPTIVE ANALYSIS 18 SLIDES

Descriptive Statistics Notes:

1. Introduction to Descriptive Statistics:
- Descriptive statistics summarize and organize characteristics of a data set.
- A data set consists of responses or observations from a sample or entire population.
- In quantitative research, the first step is describing the characteristics of the responses, like averages or relationships between variables.
- Inferential statistics come next, helping determine if data confirms hypotheses and can be generalized.

2. Types of Descriptive Statistics:
- Three main types: distribution, central tendency, and variability or dispersion.
- Distribution: Frequency of each value.
- Central Tendency: Averages of values.
- Variability/Dispersion: Spread of values.

3. Research Example:
- Studying leisure activity popularity by gender.
- Survey about past-year activities: library, movie theater, national park.
- Descriptive stats reveal activity frequency, averages, and spread.

4. Frequency Distribution:
- Data set consists of values, summarized in frequency distribution.
- Tabulate or graph frequency of each possible value of a variable.
- Example: Gender - Male: 182, Female: 235, Other: 27.

5. Measures of Central Tendency:
- Measures the center or average of a data set.
- Mean, median, and mode are common ways to find average.
- Example calculation using first 6 survey responses:
  - Mean = (15 + 3 + 12 + 0 + 24 + 3) / 6 = 9.5

6. Measures of Variability:
- Describes spread in response values.
- Range, standard deviation, and variance capture different aspects.
- Example calculation of standard deviation:
  - Steps include finding deviations, squaring them, summing, and taking the square root.
  - Standard deviation = 9.18.

7. Univariate Descriptive Statistics:

- Focuses on one variable at a time.
- Use multiple measures for distribution, central tendency, and spread.
- Example:
  - Visits to the library: Mean = 9.5, Median = 7.5, Mode = 3, SD = 9.18, Variance = 84.3, Range = 24.

8. Bivariate Descriptive Statistics:
- Explores relationships between two variables.
- Bivariate analyzes frequency, variability, and central tendency.
- Contingency tables and scatter plots help understand relationships.

9. Contingency Table:
- Intersection of two variables.
- Independent variable (e.g., gender) on vertical axis, dependent on horizontal.
- Percentages make interpretation easier.

10. Scatter Plots:
- Visualizes relationship between two or three variables.
- Data points represented on a chart.
- Used to assess correlations and perform regression tests.

These notes cover the concepts of descriptive statistics, different types of statistics, their calculations, and practical examples of their applications.