1 Lecture 2 Notes

Important Distinction:

1. **Descriptive Statistics**: - _____

2. **Inferential Statistics**: - _____

Summarizing the Data

1. **Frequency**: - _____

2. **Frequency Distribution**: - _____

Example 1: Frequency distribution of cotinine (a metabolite of nicotine) level of smokers. A sample of 40 smokers and their cotinine level) in ng/ml (1st edition)

1	0	131	173	265	210	44	277	32	3
35	112	477	289	227	103	222	149	313	491
130	234	164	198	17	253	87	121	266	290
120	167	250	245	48	86	284	1	208	173

Procedure for Constructing a Frequency Distribution

1. Select number of bins (between 5-20), lets choose 5

2. Calculate Width:

$$\text{Class Width} = \frac{Max - Min}{\#\text{ of bins}} = \frac{491 - 0}{5} = 98.2 \approx 100$$

   Round up to make life easier.

3. **Find the Lower limits (LL)** for each bin. Choose the lowest number in the data set and add the Class Width

4. **Find Upper limit (UL)** Use the Lower Limit of the next bin to find the UL

5. Make a list of the LL and UL, as follows:

6. Go through the data and determine the occurrences within each bin:

7. Determine Relative Frequency

8. Determine Cumulative Frequency

LL	UL	Frequency	Relative Frequency	Cumulative Frequency

Types of Plots (purposes)

1. Histograms - _____

2. Frequency Polygons - _____

3. Bar Graphs & Bar Plot - _____

4. Pareto Charts - _____

5. Scatter Plots - _____

6. Time Serie Plots - _____

7. Others: Dot Plots, Stem-and-Leaf Plots, and Pie Charts

Central Tendency (Measures of the Center) New Notation

N :

n :

x_i

$\sum$:

1. Mean - _____

$$\mu = \sum_{i=1}^{N} = \frac{x_i}{N}$$

$$\bar{x} = \sum_{i=1}^{n} = \frac{x_i}{n}$$

2. Median - _____

   • - _____

   • - _____

3. Mode - _____

4. Midrange - _____

5. Weighted Mean - _____

Problem 1 5.40,1.10, 0.42, 0.73, 0.48, 1.10

1. Mean

2. Median

3. Mode

Problem 2 27, 27, 27, 55, 55, 55, 88, 88, 99

1. Mean

2. Median

3. Mode

Problem 3 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

1. Mean

2. Median

3. Mode