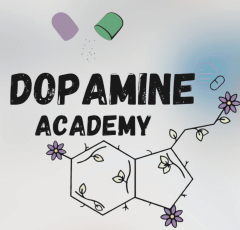


Statistics

Subject: Lecture 5



لجان الرفعات



Subject :

• منه يمكن معرفة التوزيع distribution يندرج تحت نوع التوزيعات

إذا كانت المنحنية positive skew أما إذا كانت لليسار negative skew

• mean المتوسط الحسابي

Measures of Dispersion :-

Data مجموعة من البيانات

1. Range
2. Variance
3. Standard deviation
4. Coefficient of variation

- If values are the same, there is no dispersion
- If values are not all the same, there is dispersion
- If values are close to each other the dispersion is small.
- If values are widely scattered the dispersion is greater

Reason of Variation in experiments :-

1. instrument used for analysis
2. analyst (المحلل)
3. sample "chosen"
4. unidentified error "noise"

Range :- is the difference between the largest and smallest value in a set of data.

$$\text{Range} = \text{largest value} - \text{smallest value}.$$

properties :- 1. Simplicity 2. Poor measure of dispersion

► Subject:

2. **Variance** : it measure dispersion relative to the scatter of the values about the mean.

3. **Standard deviation** : the square root of variance
 $\pm$: means more or less

- Standard deviation has a unit

4. **Coefficient of variation** : expresses variation relative to the magnitude of data.

- and it's used to compare two set of data.

• العلاقة طردية بين CV مع dispersion

Measures of Dispersion for grouped frequency Table :-

1. Find midpoint for each interval (x)
2. multiply the frequency with each midpoint (fx)
3. find the Sum ($\sum fx$)
4. find the square value for ($\sum fx$)²
5. $(\sum fx)^2 \div n(\sum f)$
6. find the square of the mid point for each interval (x^2)
7. multiply f with each squared x^2 (fx^2)
8. find the Sum ($\sum fx^2$)