CALCULATION OF COEFFICIENT OF QUARTILE DEVIATION FOR DETERMINING RAINFALL DISPERSION

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DISPERSION:

"Dispersion is the measure of the variation of the items" (A.L. Bowley)

"The degree to which numerical data tend to spread about an average value is called the variation or dispersion of the data" (Spiegal)

MEASURES OF DISPERSION:

- 1) **ABSOLUTE:** When dispersion is measured and is expressed in terms of original data. The dispersion is expressed in the unit in which the data are collected.
- 2) **RELATIVE**: Absolute measure of dispersion cannot be used for comparison, specifically when there are two series of data with different units. Two series can be compared only if absolute measure of dispersion of each series is expressed as a ratio or percentage of the average. For comparing variability even if the distributions are in the same units, the relative measure of dispersion is calculated. Thus, coefficient of dispersion should be calculated to compare two series.

METHODS OF MEASURING DISERSION:

• ABSOLUTE MEASURE

- 1) RANGE
- 2) MEAN DEVIATION
- 3) STANDARD DEVIATION
- 4) QUARTILE DEVIATION/SEMI-INTER-QUARTILE RANGE

• **RELATIVE MEASURE**

- 1) COEFFICIENT OF MEAN DEVIATION
- 2) COEFFICIENT OF VARIATION
- 3) COEFFICIENT OF QUARTILE DEVIATION

FOR DETERMINING VARIABILITY OF RAINFALL, COEFFICIENT OF QUARTILE DEVIATION IS CALCULATED

QUARTILE DEVIATION: It is an absolute measure of dispersion. It is calculated by the formulae-

Q.D.=(Q3-Q1)/2

COEFFICIENT OF QUARTILE DEVIATION: It is a relative measure of dispersion. It is calculated by the formulae-

C.Q.D.= (Q3-Q1)/(Q3+Q1)

EXAMPLE:

IF Q1= 0.105 INCHES

Q2= 0.55 INCHES

Q3= 0.9475 INCHES

C.Q.D.= (0.9475-0.105) / (0.9475+0.105) = 0.8425/1.0525= 0.80047

References:

Pillai, R.S.N. and Bagavathi (2019), "Statistics theory and practice", S.Chand and Company Limited, New Delhi.