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FACULTY OF ENGINEERING & TECHNOLOGY

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LECTURE- 10

BSc (AG)
2nd Year , IIIrd Sem.
Statistical Methods
AES-213

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Outline of lecture

- Measure of Central Tendency
- Mode definition & formula
- Merits of Mode
- Demerits of Mode
- Relation between Mean, Median & Mode
- Test Your Skills (Questions based on Lecture)
- Suggested Readings & References

Mode

Mode is the value or number whose frequency is maximum in given data or observations.

The set of observations which has only one mode is called unimoded, two modes is called bimoded and observations have more than two modes is called multimoded.

When data is classified into class interval and frequency then we can use median formula-

$$Mode = L_1 + \frac{L_2 - L_1}{2f - f_1 - f_2}(f - f_1)$$

where

$L_1 = lower\ limit\ of\ mode\ class$

$L_2 = upper\ limit\ of\ mode\ class$

$f = frequeny\ of\ mode\ class$

$f_1 = frequency\ before\ mode\ class$

$f_2 = frequency\ after\ mode\ class$

Properties of Mode

Merits or Advantages of Mode:

- Mode is easy to understand.
- Mode is easy to calculate.
- Mode is easily determined by inspection.
- Mode is rigidly defined by a mathematical formula.
- Mode is not affected by extreme values.

Demerits or Disadvantages of Mode:

- Mode is not depend on all the observations.
- It only focuses on number whose frequency is maximum.
- Mode is not capable for further mathematical calculations.
- As compared with mean, mode is very much affected by fluctuation of sampling.
- Mode ill defined. It is not always possible to clearly define mode.

Relation between Mean, Median & Mode

Mode = 3. Median – 2. Mean

Example: In a certain distribution, mean is 5.9 & median is 7.2 then find mode.

Ans. Mode = 3 . Median – 2. Mean

= 3. (7.2) – 2. (5.9)

= 21.6 – 11.8

= 9.8

Test Your Skills (Fill in the blanks)

1. Why we use mode ……
2. Write one merit of mode…….
3. Write the relation between mean, median and mode …..
4. Write the formula of mode when data is given in class interval form ……..
5. Give reason why we use mode in shoes industry ……..
6. Find the mode of the numbers 4, 3, 7,4, 8, 3, 4, 6, 4, 3, 4, 6, 4, 5, 4, 7, 4, . …….

Suggested Readings & References

1) Statistical Methods: P.N. Arora, Sumeet Arora & S. Arora; S. Chand & Company Ltd.

2) Fundamental of Mathematical Statistics: S.C. Gupta & V. Kapoor; Sultan Chand & Sons.

3) Statistics: M.R. Spiegel; Schaum's Outline Series, Mc-Graw Hill Publication.

4) Advanced Engineering Mathematics: Erwin Kreyszig; John Wiley & Sons Inc.

5) Elements of Statistics: J.P. Chauhan & S. Kumar; Krishna Publication.

* THANK YOU *