ALMS8

TAILORED LEARNING, PERSONALIZED PROGRESS

LEARNING MODULE 2

Draw Conclusions from Statistical Data Using the Measures of Central Tendency

GRADE 8

2 DRAW CONCLUSIONS FROM STATISTICAL DATA USING THE MEASURES OF CENTRAL TENDENCY

Welcome!

Hey, data detectives! In this learning adventure, we'll explore how measures of central tendency become our trusty sidekicks in decoding and understanding data. From unraveling the 'typical' values to making informed decisions using real-life scenarios, we're about to embark on a journey where numbers tell compelling stories. Let the learnings begin!

Learning Objectives:

At the end of this module, students will be able to:

- Analyze statistical data sets using measures of central tendency to draw accurate conclusions
- Manipulate data in spreadsheet software to organize, input, and graphically calculate measures of central tendency.
- Recognizing the significance of measures of central tendency in interpreting data, simplifying and summarizing information.

Concluding with Central Tendency

Usually there is no good way to write a statistic. It rarely sounds good, and often interrupts the structure or flow of your writing. Oftentimes the best way to write descriptive statistics, i.e., measures of central tendency, is to be direct.

To give you an idea, see the provided conclusions to the given examples solved in module 1.

MODE

Example 1: Consider this dataset showing the retirement age of 11 people, in whole years:

54, 54, 54, 55, 56, 57, 57, 58, 58, 60, 60

What is the mode from the given dataset?

Answer: 54

Conclusion: The most occurring value is 54, therefore the mode of this distribution is 54 years old.

Example 2: Consider the given dataset – 5, 4, 2, 3, 2, 1, 5, 4, 5.

What is the mode?

Answer: 5

Conclusion: Since the mode represents the most common value. Hence, the most frequently repeated value in the given dataset is 5

MEDIAN

Example 1: Consider the given dataset with the odd number of observations arranged in descending order – 23, 21, 18, 16, 15, 13, 12, 10, 9, 7, 6, 5, and 2. Identify the median.

Answer: 12

Conclusion: Here, 12 is the middle or median number that has 6 values above it and 6 values below it.

Example 2: Now, consider another example with an even number of observations that are arranged in descending order – 40, 38, 35, 33, 32, 30, 29, 27, 26, 24, 23, 22, 19, and 17. Find the median.

Answer: 28

CONCLUSION

Therefore, the median for the given data distribution is 28.

MEAN

Example 1:

Looking at the retirement age distribution again:

Participants	1	2	3	4	5	6	7	8	9	10	11
Age	54	54	54	55	56	57	57	58	58	60	60

Compute the mean.

Answer: 57

Conclusion: Therefore, the mean age for retirement of 11 participants is approximately 57 years old.

Example 2:

You measure the reaction times in milliseconds of 5 participants and order the dataset. Calculate the mean.

Participants	1	2	3	4	5
Time	287 ms	298 ms	345 ms	365 ms	380 ms

Answer: 335 ms

Conclusion: Therefore, the mean reaction time of the 5 participants is 335 milliseconds.