1. Which of the following measures is not a measure of central tendency?
a) Mean
b) Median
c) Mode
d) Range

Answer: d) Range

Explanation: The range is a measure of dispersion, not central tendency. It is calculated as the difference between the highest and lowest values in a dataset.

2. If a dataset has a positively skewed distribution, which measure of central tendency will be greater?
a) Mean
b) Median
c) Mode
d) Standard Deviation

Answer: a) Mean

Explanation: In a positively skewed distribution, the tail of the distribution extends towards higher values, pulling the mean in that direction, making it greater than the median.

3. Which measure of dispersion is most affected by outliers?
a) Range
b) Mean Absolute Deviation
c) Variance
d) Standard Deviation

Answer: a) Range

Explanation: Range is highly sensitive to outliers as it depends solely on the difference between the highest and lowest values in the dataset, making it susceptible to extreme values.

4. Kurtosis is a measure of:
a) Central tendency
b) Dispersion
c) Symmetry
d) Skewness

Answer: d) Skewness

Explanation: Kurtosis measures the peakedness or flatness of a distribution. It’s a measure of the tails of the distribution relative to the tails of a normal distribution.

5. Which coefficient indicates a perfect positive linear relationship between two variables?
a) -1
b) 0
c) 1
d) 0.5

Answer: c) 1

Explanation: A correlation coefficient of 1 indicates a perfect positive linear relationship, meaning that as one variable increases, the other variable increases proportionally.

6. In a sample, if the p-value of a test of significance is less than the significance level (alpha), what does it indicate?
a) Fail to reject the null hypothesis
b) Reject the null hypothesis
c) Cannot conclude anything
d) Need more data

Answer: b) Reject the null hypothesis

Explanation: If the p-value is less than the significance level (alpha), it indicates that there is enough evidence to reject the null hypothesis in favor of the alternative hypothesis.

7. Which moment represents the spread of the distribution about the mean?
a) First moment
b) Second moment
c) Third moment
d) Fourth moment

Answer: b) Second moment

Explanation: The second moment, also known as the variance, measures the spread of the distribution about the mean by calculating the average of the squared deviations from the mean.

8. Which measure of central tendency is unaffected by extreme values or outliers?
a) Mean
b) Median
c) Mode

d) Standard Deviation

Answer: b) Median

Explanation: The median is unaffected by extreme values because it only depends on the middle value of the dataset when arranged in ascending or descending order.

9. What does a negative skewness value indicate about a distribution?
a) The distribution is symmetrical
b) The tail of the distribution extends towards higher values
c) The tail of the distribution extends towards lower values
d) The distribution is uniform

Answer: c) The tail of the distribution extends towards lower values

Explanation: Negative skewness indicates that the tail of the distribution extends towards lower values, meaning that the distribution is skewed to the left.

10. Which measure of dispersion is the square root of the variance?
a) Range
b) Standard Deviation
c) Mean Absolute Deviation
d) Interquartile Range

Answer: b) Standard Deviation

Explanation: The standard deviation is the square root of the variance. It provides a measure of the dispersion of a set of values from its mean.

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