

## Chapter 2

1. What are numerical measures and what questions do they answer?

*The mean, median and mode. On questions about the location of the center of a data set.*

2. What measures are used for categorical data?

*Median or mode*

3. What measures are used for numerical data?

*Mean or median*

4. How do you know which way the skewness of the distribution is?

*Skewness is positive if the distribution is skewed to the right, negative for distributions skewed to the left.*

5. How do you know whether the distribution is symmetrical?

*If the skewness is zero and the distribution is bell-shaped.*

6. What is the five-number summary?

*Refers to the five descriptive measures: minimum, first quartile, median, third quartile, and maximum.*

7. How do you calculate the interquartile range?

*The third quartile – the first quartile:  $Q3-Q1$ .*

8. Which graph shows the shape of the distribution in terms of the five-number summary?

*Box-and-whisker plot (boxplot)*

9. How do you calculate the variance?

*The sum of the squared differences between each observation and the population mean divided by the sample or population size.*

10. What is the difference between Chebyshev's theorem and the z-score?

*Chebyshev's theorem: The number of observations in a sample within  $k$  standard deviations of the mean.*

*Z-score: A value that indicates the number of standard deviations a value is from the mean.*

11. What have covariance and correlation coefficient in common?

*Both of them measure the direction of a linear relationship between two variables. The correlation coefficient also indicates the strength of the relationship between two variables.*

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