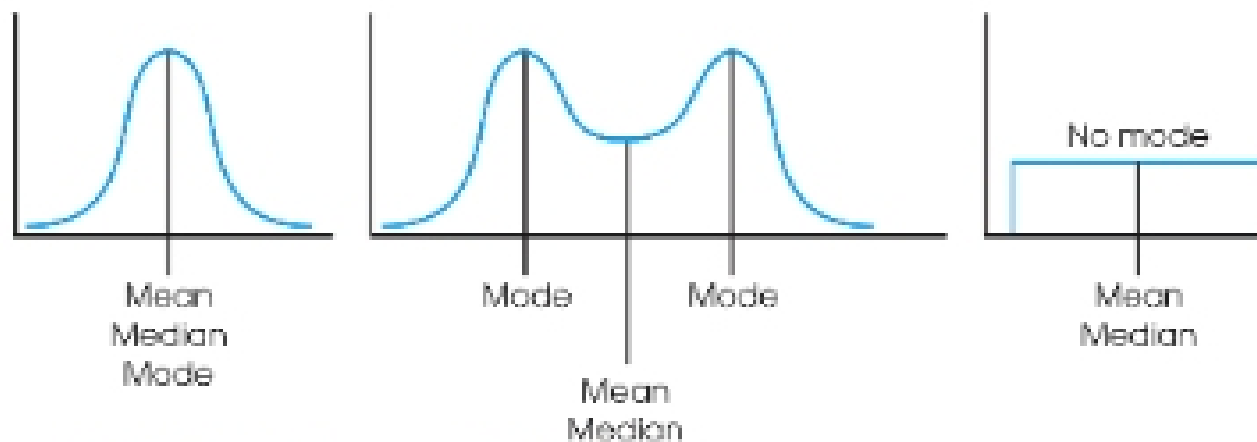


SCALE	CHARACTERISTICS	EXAMPLES
Nominal	<ul style="list-style-type: none"> Label and categorize No quantitative distinctions 	<ul style="list-style-type: none"> Gender Diagnosis Experimental or Control
Ordinal	<ul style="list-style-type: none"> Categorizes observations Categories organized by size or magnitude 	<ul style="list-style-type: none"> Rank in class Clothing sizes (S,M,L,XL) Olympic medals
Interval	<ul style="list-style-type: none"> Ordered categories Interval between categories of equal size Arbitrary or absent zero point 	<ul style="list-style-type: none"> Temperature IQ Golf scores (above/below par)
Ratio	<ul style="list-style-type: none"> Ordered categories 	<ul style="list-style-type: none"> Number of correct answers

$$\text{proportion} = p = \frac{f}{N}$$

Percentage = proportion × 100

	APPROPRIATE WHEN ...	NOT WHEN...
Mean	No situation precludes it	<ul style="list-style-type: none"> Extreme scores Skewed distribution Undetermined values Open-ended distribution Ordinal scale Nominal scale
Median	<ul style="list-style-type: none"> Extreme scores Skewed distribution Undetermined values Open-ended distribution Ordinal scale 	<ul style="list-style-type: none"> Nominal scale
Mode	<ul style="list-style-type: none"> Nominal scales Discrete variables Describing shape 	<ul style="list-style-type: none"> Interval or ratio data, except to accompany mean or median



$$\text{Range} = \text{URL for } X_{\max} - \text{LRL for } X_{\min}$$

$$\text{Deviation score} = X - \mu$$

- If $\text{Mean} - \text{Median} > 0$, the distribution is positively skewed.
- If $\text{Mean} - \text{Median} < 0$, the distribution is negatively skewed.

$$\text{Variance} = \frac{\text{sum of squared deviations}}{\text{number of scores}}$$

$$\sigma^2 = \frac{\sum (X - \mu)^2}{N}$$

$$\text{Standard Deviation} = \sqrt{\text{Variance}}$$

$$\sigma = \sqrt{\sigma^2}$$

TWO FORMULAS FOR SS

$$SS = \sum (X - \mu)^2$$

$$SS = \sum X^2 - \frac{(\sum X)^2}{N}$$

SCORES

$$\text{variance of sample} = s^2 = \frac{SS}{n - 1}$$

$$\text{standard deviation of sample} = s = \sqrt{\frac{SS}{n - 1}}$$