TYPES OF DATA ANALYTICS

4 types of Data Analytics

Value

Prescriptive

Predictive

Diagnostic

Descriptive

Complexity
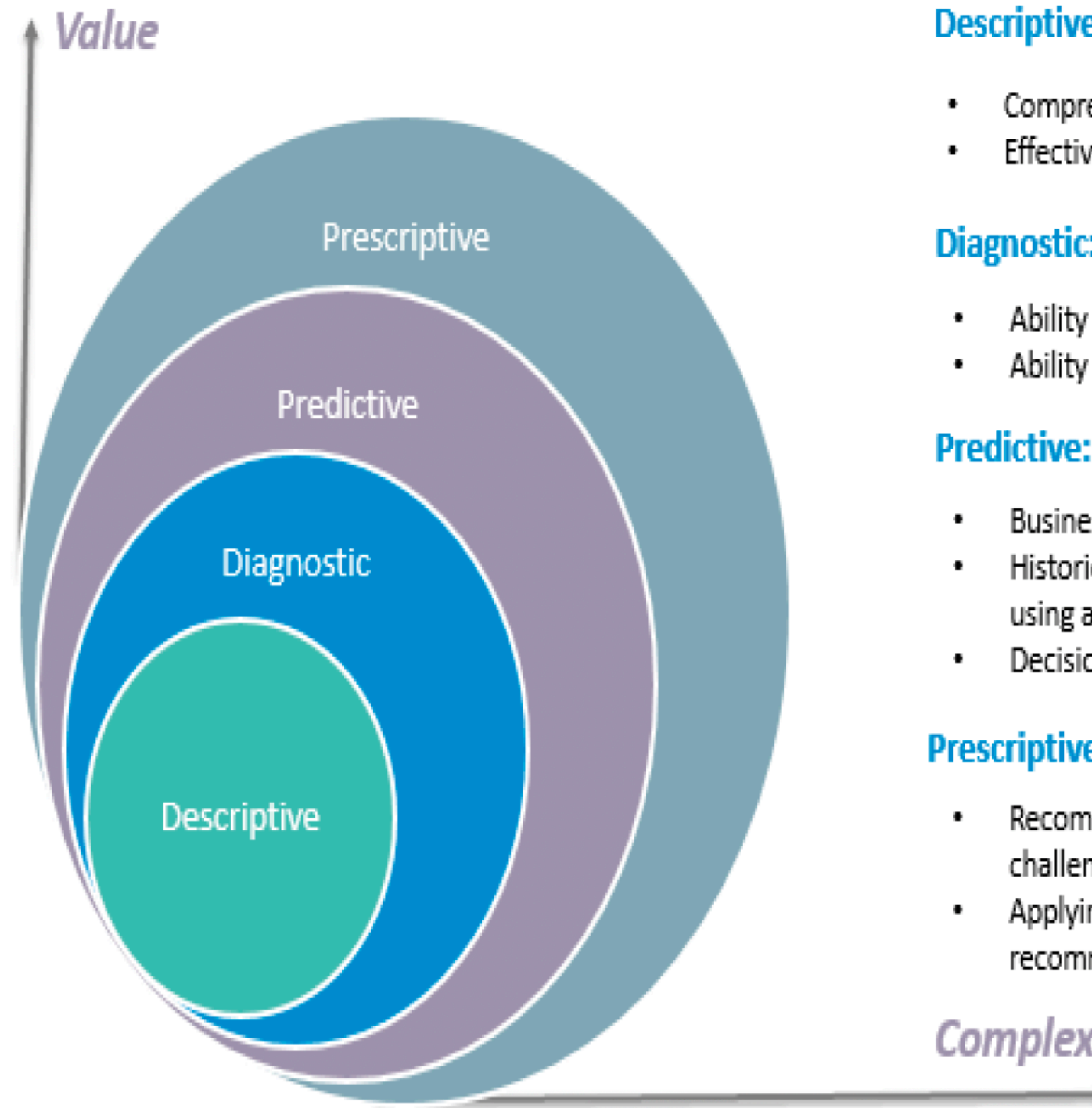
What is the data telling you?

Descriptive: *What's happening in my business?*

- Comprehensive, accurate and live data
- Effective visualisation

Diagnostic: *Why is it happening?*

- Ability to drill down to the root-cause
- Ability to isolate all confounding information

Predictive: *What's likely to happen?*

- Business strategies have remained fairly consistent over time
- Historical patterns being used to predict specific outcomes using algorithms
- Decisions are automated using algorithms and technology
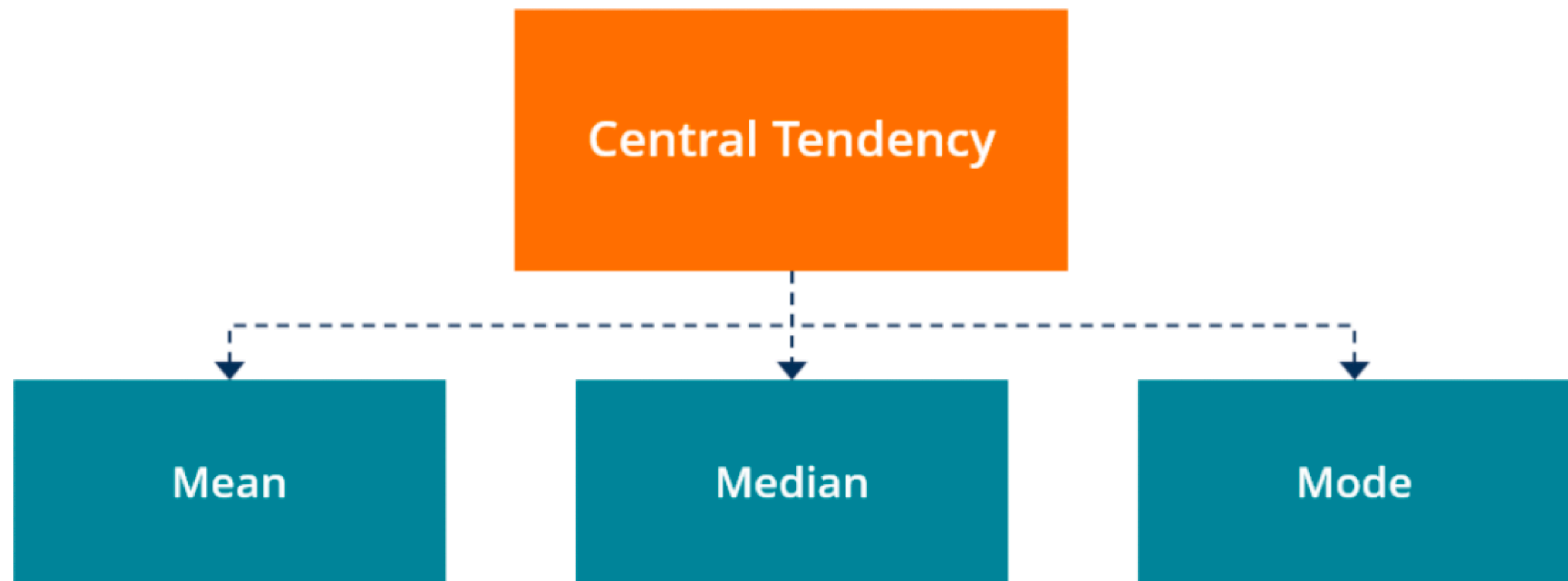
Prescriptive: *What do I need to do?*

- Recommended actions and strategies based on champion / challenger testing strategy outcomes
- Applying advanced analytical techniques to make specific recommendations

Principa

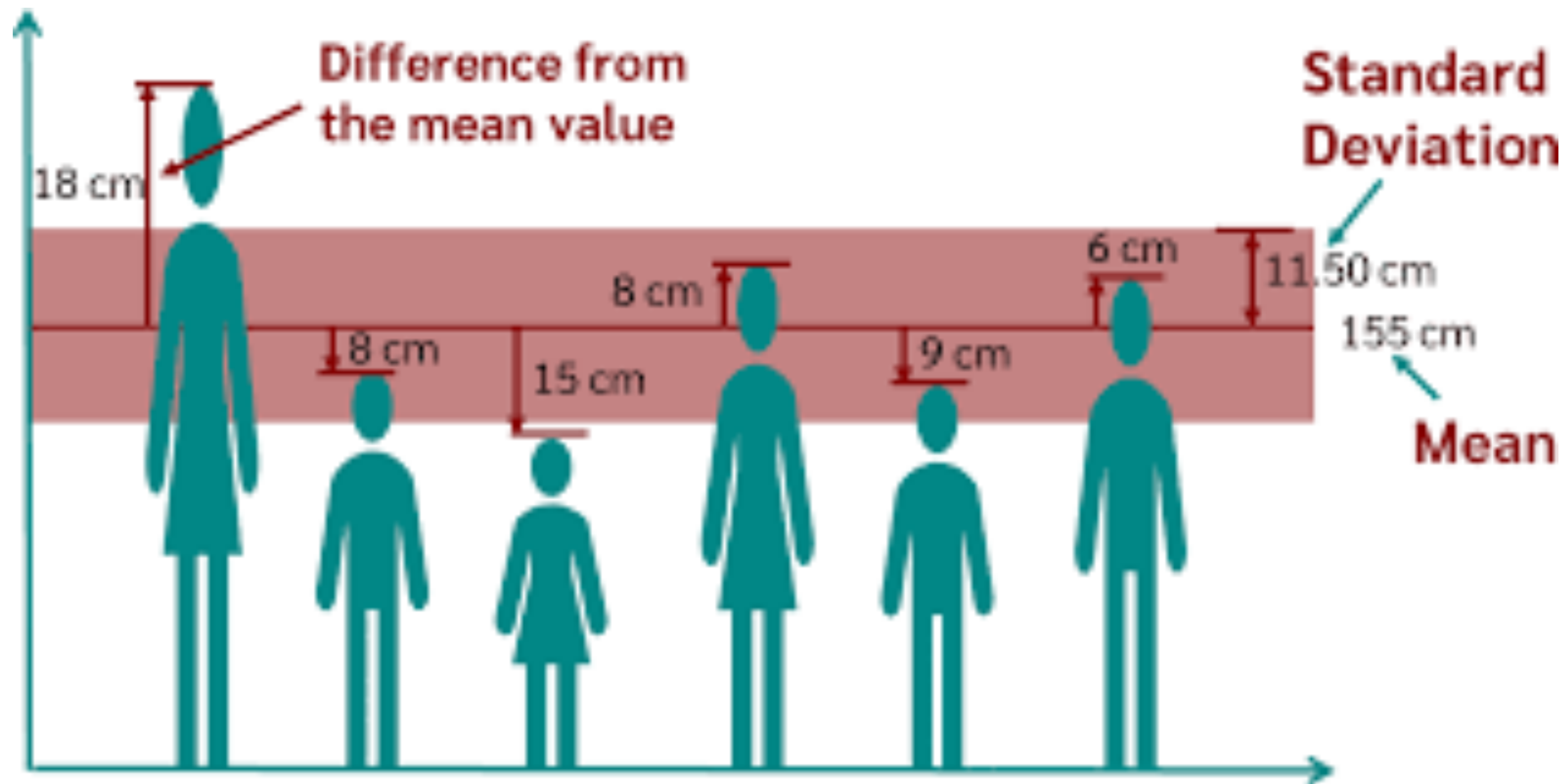www.principa.co.za

DESCRIPTIVE STATISTICS
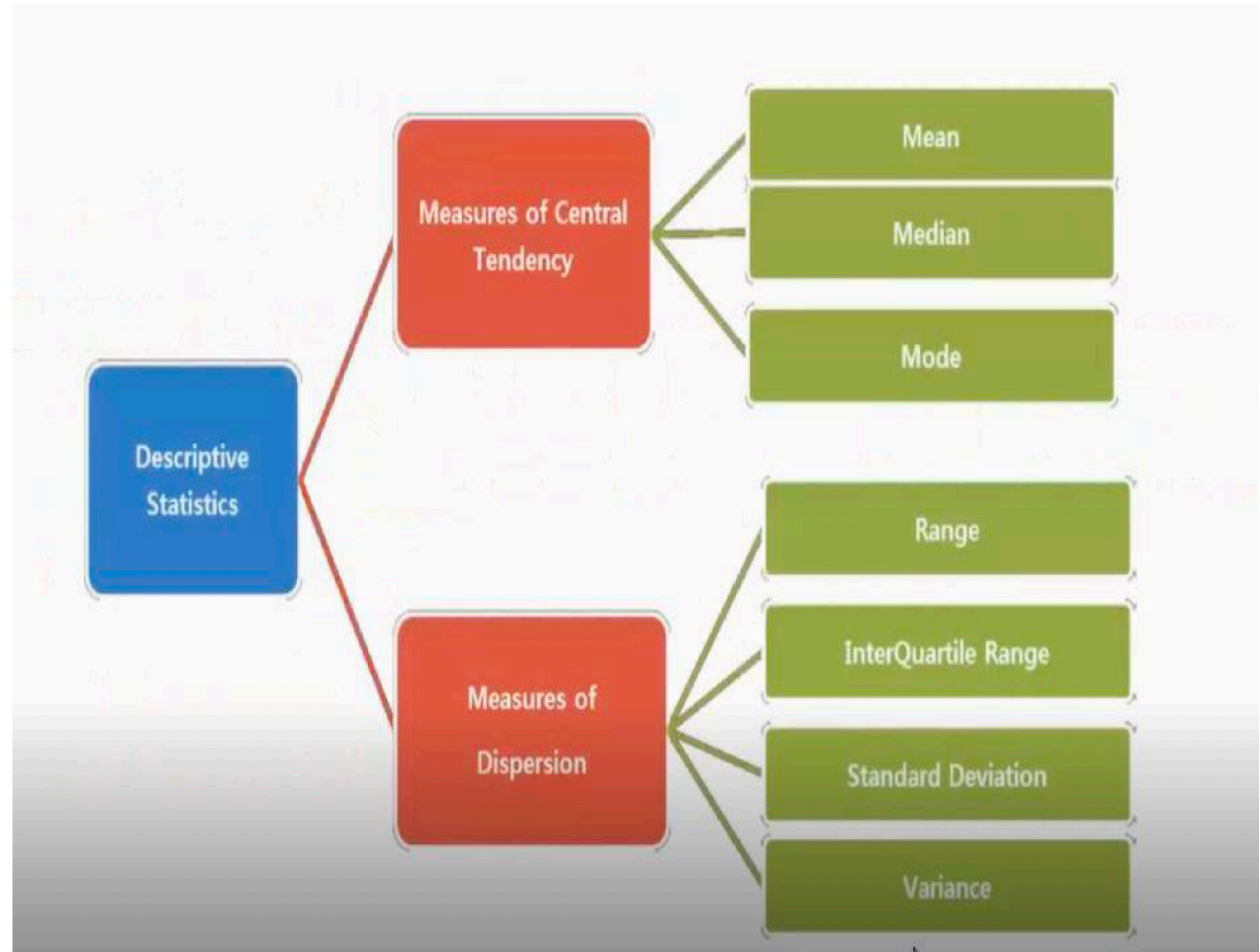
MEASURE OF CENTRAL TENDANCIES

- One number that best summarizes the entire set of measurements.
- It is also called measure of central location.
- A number that is in some way "central" to the set.
- Depending upon the application various methods are used.

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            ┌──────────────────┐
            │ Central Tendency │
            └──────────────────┘
       ┌───────────┼───────────┐
       ▼           ▼           ▼
  ┌────────┐  ┌────────┐  ┌────────┐
  │  Mean  │  │ Median │  │  Mode  │
  └────────┘  └────────┘  └────────┘
```

Standard Deviation

Standard Deviation

- Standard deviation is the squared root of variance:

$$\sigma = \sqrt{\frac{\sum_{i=1}^{n}(\bar{x} - x_i)^2}{n}}$$

Note: If the data points are too far from the mean, there is higher deviation within the data set.

x_i	$x_i - \bar{x}$	$(x_i - \bar{x})^2$
6	$6 - 9 = -3$	9
7	$7 - 9 = -2$	4
10	$10 - 9 = 1$	1
12	$12 - 9 = 3$	9
13	$13 - 9 = 4$	16
4	$4 - 9 = -5$	25
8	$8 - 9 = -1$	1
12	$12 - 9 = 3$	9
		$\sum(x_i - \bar{x})^2 = 74$

Standard deviation of above case

= root(variance)

= root(9.25)

=3.041