

1 **Appendix A
Statistics**

2 **Preview of Appendix A**

- Statistics
- Descriptive Statistics
- The Normal Curve
- The Correlation Coefficient
- Inferential Statistics

3 **Statistics**

4 **What is Statistics?**

- Numerical facts that provide useful information about measures or scores
- Population
 - Complete group of people, animals or measures
- Sample
 - Part of a population

5 **Descriptive Statistics**

6 **What is Descriptive Statistics?**

- Branch of statistics that provides information about distributions of scores

7 **Frequency Distributions**

- Ordered data set that indicates how often scores appear
 - Ordered in class intervals
- Graphing frequency distributions
 - Frequency histogram
 - Frequency polygon

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9 **Measures of Central Tendency**

- Mean
 - True average
- Median
 - Central score
- Mode
 - Most frequently occurring score
 - Bimodal – having two modes

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11 **Measures of Variability**

- Inform about the spread of the scores – typical distance from average score
 - Range of scores – High score minus low score
 - Standard deviation – Obtained by formula, better at showing distribution from the mean

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13 **The Normal Curve**

14 **Normal Curve**

- Normal distribution
 - Mean, median and mode all fall at the same data point

- Normal curve (Bell-shaped curve)
 - Graphic presentation of a normal distribution

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16 **Correlation Coefficient**

- Statistic that describes the relationship between variables
 - May suggest but do not demonstrate cause and effect
- Correlation coefficient
 - Sign (+ or -) indicates direction of relationship
 - Number (0 to 1.00) indicates extent of relationship

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19 **Inferential Statistics**

20 **Inferential Statistics**

- Branch of statistics concerned with the confidence with which conclusions about a sample can be inferred to the population

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22 **Statistically Significant Differences**

- Differences unlikely to be due to chance fluctuation
 - Probability (p) due to chance less than 1 in 20 ($p < .05$)
 - More comfortable at less than 1 in 100 ($p < 01$)
- Calculated using a formula
 - Involves mean and standard deviations

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25 **Samples and Populations**

- Inferential statistics determine whether sample scores can be generalized to the population
 - Sample must be representative of the population
- Random sampling