Hypothesis Tests: Assumptions

Assumptions for Hypothesis Tests with z-scores:

1. Random sampling

2. Value of σ unchanged by treatment

3. Sampling distribution normal

4. Independent observations

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Assumptions of a Single Sample t test

1. Values in sample must consist of <u>independent</u> observations

2. Population sampled must be normal

3

Assumptions Underlying the Independent-Measures t statistic

1. The observation within each sample must be independent

2. The two populations from which the samples come must be normal

3. The two populations from which the samples are selected must have equal variances - <u>homogeneity of variance</u>

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Assumptions for Related-Samples t test

1. Observations within each treatment must be independent

2. The population distribution of difference scores must be normal

3. <u>Note</u>: #2 is not a concern as long as sample size is 30 or greater

Assumptions for Independent Measures ANOVA

1. Observations in each sample are independent.

2. Populations from which samples are selected must be normal.

3. Populations from which samples selected must have equal variances (<u>homogeneity of variance</u>)

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Assumptions of the Repeated Measures ANOVA

1. Observations within each treatment condition must be independent

2. Population distribution within each treatment must be normal

3. Variances of the population distributions for each treatment must be equivalent (<u>homogeneity of variance</u>)

4. Homogeneity of covariance.