

Confidence Interval Assumptions

One-population Mean Assumptions

- The quantitative sample data should be collected randomly or be representative of the population.
- Data values within the sample should be independent of each other.
- The sample size should be at least 30 or have a nearly normal shape.

One-population Proportion Assumptions

- The categorical sample data should be collected randomly or be representative of the population.
- Data values within the sample should be independent of each other.
- There should be at least ten successes and at least ten failures.

One-Population Variance or Standard Deviation Assumptions

- The quantitative sample data should be collected randomly or be representative of the population.
- Data values within the sample should be independent of each other.
- The sample data must be normal.

Two-population Mean Assumptions (Matched Pair Observational Study)

- The quantitative ordered pair sample data should be collected randomly or be representative of the population.
- Data values within the sample should be independent of each other.
- There should be at least thirty ordered pairs or the differences should have a nearly normal shape.

Two-population Mean Assumptions (Matched Pair for Experiments. Same people measured twice.)

- Quantitative ordered pair data
- Data values within the sample should be independent of each other.
- There should be at least thirty ordered pairs or the differences should have a nearly normal shape.

Two-population Mean Assumptions (Not Matched Pair, Independent groups, Observational study)

- The two quantitative samples should be collected randomly or be representative of the population.
- Data values within each sample should be independent of each other.
- Data values between the two samples should be independent of each other.
- The sample sizes should be at least 30 or have a nearly normal shape.

Two-population Mean Assumptions (Independent groups for Experiment)

- The two quantitative samples should be randomly assigned from the people or objects in the experiment.
- Data values within each sample should be independent of each other.
- Data values between the two samples should be independent of each other.
- The sample sizes should be at least 30 or have a nearly normal shape.

Two-population Proportion Assumptions (Observational Study)

- The two categorical samples should be collected randomly or be representative of the population.
- Data values within each sample should be independent of each other.
- Data values between the samples should be independent of each other.
- There should be at least ten successes and at least ten failures in both samples.

Two-population Proportion Assumptions (Experiment)

- The two categorical samples should be randomly assigned from the people or objects in the experiment.
- Data values within each sample should be independent of each other.
- Data values between the samples should be independent of each other.
- There should be at least ten successes and at least ten failures in both samples.

Bootstrap Assumptions (Observational Study)

- The sample data should be collected randomly or be representative of the population.
- Data values within each sample should be independent of each other.
- If multiple samples were collected that were not matched pair, then the data values between the samples should be independent of each other.