

Technical Paper 14

Ten-step procedure

1. State your question.
 - a. Is it a good scientific question?
 - b. Identify your population.
 - c. Identify your dependent variable.
 - d. Identify your independent variable.
2. State your hypothesis set.
 - a. Verbal hypothesis.
 - b. Statistical hypothesis (H_0 , H_A).
 - c. Is your hypothesis set exhaustive?
 - d. Is your hypothesis set exclusive?
3. State your significance level.
4. Select the appropriate test.
 - a. Variable scales.
 - i. Dependent variable
 - Converted or transformed?
 - ii. Independent variable
 - Converted or transformed?
 - b. What information is given or available?
 - i. Sample data?
 - ii. Parameters?
 - c. Number of samples?
 - d. Are the data paired or unpaired?
 - e. What aspect of the variable do you want to compare?
 - i. Association
 - ii. Causation
 - iii. Central tendency
 - iv. Correlation
 - v. Goodness of fit
 - vi. Variability
 - f. State the test to be used:
 - i. Are the assumptions of the test met? (Normality, equal variances, etc.)
 - If no can the data be transformed?
 - Non-parametric test appropriate?
5. Conduct your sampling.
6. Graph the data
7. Summarize the data.
8. Calculate your test statistic.
9. Retain or reject your null hypothesis based on your test statistic.
10. Interpret the results in biological terms.