Statistical Test Flow Chart
Geo 441: Quantitative Methods
Group Comparison and Association

Normal
- One group
  - Variance known → 1 Sample z Test
  - Variance unknown → 1 Sample t Test
    - Not Significant → 2 Sample (Independent) t Test for equal variances
    - Significant → 2 Sample (Independent) t Test for unequal variances
- Compare two groups
  - Non-paired data → F Test
  - Paired data → Paired Sample t Test
- One level
  - 1-Way AOV → Multiple Comparison (post hoc) Test
- Most than one level
  - 2-Way AOV → Multiple Comparison (post hoc) Test
  - Hierarchical levels → Nested AOV → Multiple Comparison (post hoc) Test
- Association between two groups → Pearson’s Correlation

Non-Normal
- One group → Wilcoxon 1-Sample Median Test
- Compare two groups → Mann-Whitney U Test
- Compare more than two groups → Kruskal-Wallis H Test
- Association between two groups → Spearman’s Ranked Correlation

Interval or Ratio Data → Normality Test