Flowchart for Selecting the Appropriate Hypothesis Test

TYPE OF OUTCOME MEASURE

Nominal (e.g., counts)	Ordinal (e.g., ranks)	Interval/Ratio (e.g., test scores)

Cross-classified observations?

Yes → X^2 Test of Independence

No → X^2 Goodness-of-Fit Test

Relationships between variables or group differences?

Relationships → **Number of Variables?**

- Two → Correlation
- More than Two → Regression

Group Differences → **Paired Observations?**

- Yes → **Number of Groups?**
  - Two → Paired Samples t-test
  - More than Two → Repeated Measures ANOVA
- No → **Number of Independent Variables?**
  - One → **Number of Groups?**
    - One → One Sample t-test
    - Two → Independent Samples t-test
    - More than Two → One Factor ANOVA
  - More than One → Factorial ANOVA

Relationships between variables or group differences? (Ordinal)

Relationships → r_s Rank Correlation

Group Differences → **Paired Observations?**

- Yes → **Number of Groups?**
  - Two → Wilcoxon Signed Rank Test
  - More than Two → Friedman Test
- No → **Number of Groups?**
  - Two → Mann-Whitney U Test
  - More than Two → Kruskal-Wallis H Test