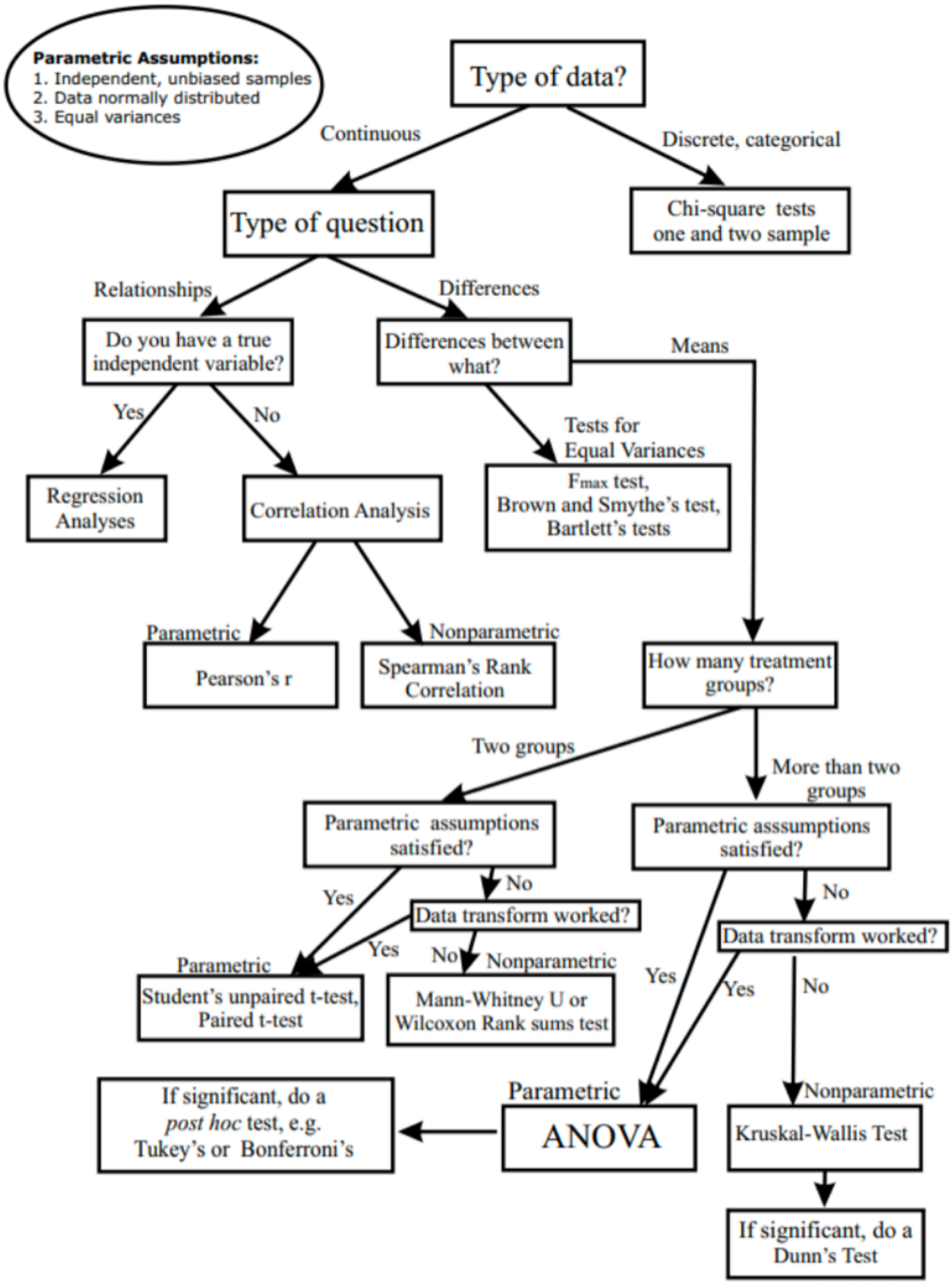
Flow Chart for Selecting Commonly Used Statistical Tests



According to the decision chart provided in the lecture slides, the most appropriate statistical test for examining the relationship between the democracy level and female visual representation in my dataset is Spearman's Rank Correlation, since both variables are not guaranteed to follow a normal distribution.

Hypothesis Formulation
H_0: rho = 0
(There is no association between democracy level and female representation in news images.)
H_1: rho > 0
(Countries with higher democracy scores tend to have higher female representation.)

Test Results
Using the spearmanr() function from SciPy, the Spearman correlation coefficient was calculated as:
rho = 0.4724
This indicates a moderate positive relationship between the two variables.

The corresponding p-value returned by the test was:
$p = 5.59 \times 10^{-9}$,
which is far below the conventional significance threshold of 0.05.

Conclusion
Since the p-value is significantly smaller than 0.05, the null hypothesis (H_0) is rejected. Therefore, the results provide strong statistical evidence for a positive association: countries with higher levels of democracy tend to depict women more frequently in diplomacy-related news imagery.

Sources
https://docs.scipy.org/doc/scipy/reference/generated/scipy.stats.spearmanr.html
https://isaacscience.org/concepts/cm_stat_srcc_hypothesis_testing
https://www.youtube.com/watch?v=QoK7gCTal90&t=1s