OSS-3 Test of Proportions

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Test of Proportions

- Used when you want to know whether two groups differ significantly for some characteristic
- Groups
  - Relevant questions
  - Comparison questions
- Characteristic
  - Number of artifacts

Test of Proportions - Formula

$$\frac{(\overline{p}_1 - \overline{p}_2) - 0}{\sqrt{\overline{p}(1 - \overline{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

Test of Proportions - Requirements

- Number of RQs
- Number of CQs
- Number of artifacts at RQs
- Number of artifacts at CQs

Test of Proportions - Results

- Z-value
  - Interpreted as a p-value

Test of Proportions - Hypothesis

- Differences in the observed characteristic are statistically significant
  - Differ from random at a statistically significant level
- Observed differences are not likely to occur due to random chance alone
- Non-random differences are systematic or strategic

Test of Proportions – Null Hypothesis

- No difference in the observed characteristic for the two groups
- Observed differences are random and are likely to be commonly observed due to random chance

Using the Test of Proportions

- Determine the alpha level for statistical significance
  - Software default to a = .05
- Mark the artifacts at RQs and CQs

Test of Proportions

- If the probability is sufficiently low that observed differences are random, then the data support a conclusion that the observed data are systematic in some way

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