Chi-Square: Test for Independence

$$\chi^2 = \sum {}^*\frac{(f_{observed} - f_{expected})^2}{f_{expected}} \qquad {}^*sum$$

Observed frequency - number in the cell

Expected frequency - $(R_{total} * C_{total})/N$ OR: Row total times column total divided by N OR:

$$\frac{Row\ sum\ *\ column\ sum}{Grand\ sum}$$

1. Find observed frequencies for each cell
2. Find expected frequencies for each cell
3. Subtract expected frequencies from observed frequencies for <u>each</u> cell
4. Square that number
5. Divide by expected frequency <u>for each cell</u>
6. Add these numbers together
7. Compare to critical value
  • Choose .05 or .01
  • Find df for χ^2 = (R-1)(C-1) R = number of rows and C = number of columns