

What are Crosstabs?

- Cross tabulation is an analytic tool that allows you to make comparisons on nominal/categorical data.
- You create “contingency tables” in Qualtrics using your results. These tables are typically 2x2 or 2x3, but they can be set up with as many columns (banners) and rows (stubs) as you’d like.
- The data in these tables are “counts” or “frequencies” of responses. It is not good enough to simply “eyeball” the results, a statistical test of significance is important to conduct. Why? Sometimes “error” gets in the way, and we think a result is significant when, in fact, it is not.

Chi-square χ^2 tests are used with frequency data to test the hypothesis in research questions such as:

- What proportion of male FSW students persist to graduation within 3 years?
- What proportion of parents visit FSW during the academic year?
- What proportion of out-of-state students is admitted to FSW annually?

Goodness of Fit Test (chi-square type 1)

- Used in one-way designs
- Tests how closely observed frequencies from a sample “fit” expected frequencies.
- Ex. What proportion of FSW students prefer S-building food to Dunkin Donuts food?

Test of Independence (chi-square type 2)

- Used with two-way/two-factor or more variables/factors
- Tests the “null hypothesis” that two factors are independence of each other in the population.
- Ex. Is the proportion of male FSW students that prefer S-Building food to Dunkin Donuts food the same as that of female FSW students?
- **TWO FACTORS** – gender and dining location.

Reporting language for the results of a chi-square test of independence (one-way design)

- 1) A chi-square test of independence was performed to examine the relation between religion and college interest. The relation between these variables was significant, $\chi^2 (2, N=170) = 14.14, p < .01$.
- 2) There was a significant relationship between level of self-esteem and academic performance, $\chi^2 (2, N=150) = 8.22, p < .05$.
- 3) Students who entered college with stronger ethnic identities were more likely to have joined an ethnic organization by the end of freshman year than students with weaker ethnic identities ($\chi^2 = 20.73, N = 107, p < .05$)

Reporting language for the results of a chi-square test of goodness of fit (two-way/three-factor, etc.)

- 1) A chi-square test of goodness of fit was performed to determine whether the three sodas were equally preferred. Preference for the three sodas was not equally distributed in the population, $\chi^2 (2, N=55) = 4.53, p < .05$
- 2) The students showed a significant preference on the question concerning factors involved in course selection, $\chi^2 (2, N=210) = 7.24, p < .10$
- 3) Women were found to prefer three titles for a new literary magazine equally, “FSW Today” and “Buc Life,” $\chi^2 (2) = 3.2, N=60, p < .05$.