

## Lab Exercise #3 Categorical Data, Crosstabs, and Chi-square

### Tutorial Objectives

- 1) Learn how to describe variables using Stevens classification system.
- 2) Learn how to prepare crosstabulations (tables) for 2 categorical variables.
- 3) Understand the Chi-square statistic and other measures of association.

1. Using the survey questionnaire handouts, label each variable on pages 1-10 using the Steven's classification system.

2. Using the Anchorage Parks Survey data, run crosstabulations and generate the Chi-square statistics (pp. 688-693 in Field text) for the Q-5 (type of parks most needed) and Q-25 (type of dwelling) variables.

- a. Is there a relationship between the two variables?
- b. How many cells have an expected count less than 5?
- c. Now, remove the "Mobile home" and "Other" category responses (using SPSS "Select Cases" option) and re-run the crosstabs. This should produce a 4x2 table. Is the result the same?
- d. Have any assumptions about the Chi-square test been violated in the table?

3. Using the Anchorage Parks Survey data, test the hypothesis that there is a significant association between gender (Q-27) and athletic club membership (Q-32).

- a. Is there a significant association between the two variables?

4. Using the Anchorage Parks Survey data, test the hypothesis that there is a significant association between a household's use of school facilities (Q-17) and athletic club membership (Q-32). To do this test, first recode Q-17 into 2 categories (0-5 times) and 6 or more times (use SPSS recode command). The result should be a 2x2 table.

- a. Is there a significant association between athletic club membership and use of school facilities?
- b. Is this result what you would have expected?

5. Using the Anchorage Parks Survey data, test the hypothesis that there is a significant association between gender (Q-27) and whether more parkland should be developed (Q-16). Eliminate the No Opinion responses first so that you have a 2x2 table.

- a. Is there a significant association?
- b. What is the strength of the association? (Refer to Field text, p. 693 for interpretation of Phi and Cramer's V)
- c. Which response would you characterize as the more "environmental" response?
- d. Can we conclude that women are more environmental than men?

