

MATH 101 Project One–FALL 2008
A Statistical Study Using Chi-Square Testing

General Directions:

You are to gather the information for this project as joint work with your assigned team of 3-4 students. However, you are to write an individual report on the project – NOT one report for the team. And the report is NOT to consist of a single write-up copied four times.

Your recitation instructor will assign you to a team and will assign you the specific study (called a Form) your team is to conduct, together with the null hypothesis. The study will involve polling a set of NIU students regarding a question Q.

Procedure:

1. In a team meeting determine a) the level of significance your team will use for the chi-square test; and b) how your team will obtain a good sample of 100 students to be polled.
2. Conduct the poll of the students in your sample asking the question Q and allowing responses of "yes", "no", or "no opinion/no response". Tabulate the number of each type of answer.
3. As a team, work out the expected distribution for the responses to Q assuming the null hypothesis and the three possible responses.
4. Determine the number of degrees of freedom for the chi-square test for the null hypothesis and the value of the chi-square statistic which would cause rejection of the null hypothesis. Determine the alternative hypothesis.
5. Compute the chi-square statistic for the data gathered, and tell if the null hypothesis should be rejected.

Report

Your individual project report should include a COVER SHEET containing your name, ZID, recitation section number, assigned seat in lecture, and the form number for your study. In addition, on this cover sheet include a record of the complete names of all your team members.

The BODY of your report should be an orderly written presentation of your project including the following numbered sections:

- I) The description of your study and its null hypothesis. Also include your statement of the alternative hypothesis.
- II) The manner in which your sample was collected and a discussion of whether this is a good sample. If you believe there are flaws with your sample, discuss them.
- III) A table of your survey data showing the total number of responses received for each answer (this should be aggregate data from the whole team) and a tabulation of the expected distribution for responses based on the null hypothesis.
- IV) The number of degrees of freedom, the value of the chi-squared statistic which would cause rejection of the null hypothesis, and the value of the chi-square statistic for your team data.
- V) A discussion of the rejection or nonrejection of the null hypothesis for your study along with any insightful statements you can make in conclusion.