Chi-Square Goodness-of-fit, Part One

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1. Choose the statement that is NOT true about the Chi-square test.

(1/1 point)

- (●) Values for chi square can be negative, positive or zero. ✔
- ( ) The chi square test should only be performed on categorical data.

Reading Check due May 03, 2016 at 17:00 UTC

Lecture Videos
Comprehension Check due May 03, 2016 at 17:00 UTC

R Tutorial Videos

Pre-Lab
Pre-Lab due May 03, 2016 at 17:00 UTC

Lab
Lab due May 03, 2016 at 17:00 UTC

Problem Set
Problem Set due May 03, 2016 at 17:00 UTC

- The shape of the chi square distribution depends on degrees of freedom.
- The equation for calculating chi square is the same for the test of goodness of fit and the test of independence.

2. A major snack food company claims that its chips are "America's favorite." A statistics class tests this claim by asking a sample of 90 random students on campus to select their favorite chip from the company's (Brand A) and two other brands (Brand B and Brand C). Below are the results of how many students selected each brand in their taste test.

Brand A	Brand B	Brand C
38	28	24

(1/1 point)

2a. What is the distribution model for the null hypothesis?

- 50% Brand A, 25% Brand B, 25% Brand C
- 0% for Brand A
- 33.3% for all three categories. ✔
- Cannot be determined; it is not specified.

2b. Input or identify the following values necessary for this chi-square test. Assume a confidence level of 0.05.

(4/4 points)

Expected value of Brand A: *(Report as a whole number.)*

30 ✔

Answer: 30

30

Expected value of Brand B: *(Report as a whole number.)*

30 ✔

Answer: 30

30

Expected value of Brand C: *(Report as a whole number.)*

30 ✔

Answer: 30

30

Degrees of freedom: *(Report as a whole number.)*

2 ✔

Answer: 2

2

(1/1 point)

Chi-square statistic: *(Rounded to 2 decimal places.)*

- -2.54
- 6.02
- 3.47 ✔
- 2.24

(1/1 point)

Chi-square critical value: *(Rounded to 2 decimal places.)*

- 4.78
- 2.25
- 6.56
- 5.99 ✔

(1/1 point)

2c. What conclusion should be drawn about the popularity of Brand A?

- There were more people that liked Brand A in our sample, so Brand A is the favorite of Americans.
- There is no evidence to suggest that Americans prefer Brand A to the other brands tested. ✔
- The proportion of people that liked Brand A best was significantly higher than the proportion that liked Brand B or Brand C.
- We violated the assumption of minimum cell size, so the results of this test are not reportable.