

LEARNING CHECK

1. Explain what is meant by a test for “goodness of fit?” In other words, what is being “fitted” and to what is it being “fitted?”

A: We are “fitting” sample data to the population. If the data are a good fit, it suggests that the null hypothesis is correct and cannot be rejected. If the data are a bad fit, it suggests that the null hypothesis is incorrect and should be rejected.

2. How is the χ^2 test for goodness of fit different from both the independent and paired samples t tests?

A: It differs from the independent samples t test because the χ^2 test for goodness of fit compares frequencies of nominal data, whereas the independent samples t test compares two distinct groups on a scale outcome measure. In addition, the paired samples t test compares scores in a repeated-measures design in which each respondent provides two datapoints as opposed to the one datapoint each respondent provides in the χ^2 test for goodness of fit.

3. The Humane Society is interested in learning whether more small dogs (less than 25 pounds) or large dogs (more than 25 pounds) end up in shelters. After conducting a national survey of animal shelters across the United States, the Society learned that of a total of 1,000 dogs that ended up in their shelters, 450 were small dogs and 550 were large dogs.

Conduct a χ^2 test of goodness of fit to see whether there is a difference between the frequency of small and the frequency of large dogs in the shelters. Assume that the expected frequencies are equal, and use an alpha of .05.

Questions to Answer:

- a) What is the hypothesis that is being tested?

A: There will be no difference between the number of small dogs and the number of large dogs in shelters.

(Continued)