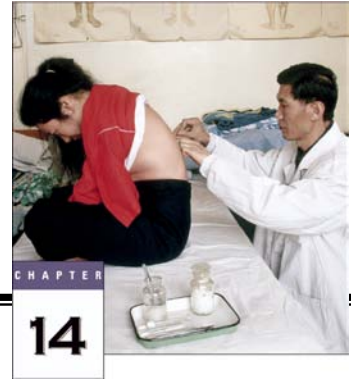


Chapter 14: Inference for Distributions of Categorical Variables: Chi-Square Procedures



Key Vocabulary:

- chi-square test for goodness of fit
- segmented bar chart
- chi-square statistic
- expected count
- observed count
- degrees of freedom
- chi-square distribution
- components of chi-square
- cell counts
- r x c table
- cell

Calculator Skills:



- sum ()
- χ^2 cdf (leftbound, rightbound, df)
- χ^2 pdf (X, df)
- Shade χ^2 (leftbound, rightbound, df)
- χ^2 -Test

14.1 Test for Goodness of Fit (pp.834-848)

1. What does the term *expected count* mean, and how is it calculated?
2. What is the *chi-square statistic*?
3. What is the difference between the notation X^2 and χ^2 ?
4. How many degrees of freedom does the *chi-square distribution* have?

5. State the general form for the null hypotheses for a χ^2 goodness of fit test.
6. State the general form for the alternative hypotheses for a χ^2 goodness of fit test.
7. What conditions must be met in order to use the *goodness of fit test*?
8. What is the shape of a *chi-square distribution*? What happens to the shape as the degrees of freedom increases? (Illustrate with a diagram)
9. What is meant by a *component* of chi-square?
10. What does the largest *component* of chi-square signify?
11. Why is it necessary to perform follow-up analysis to a chi-square test?

14.2 Inference for Two-Way Tables (pp.849-885)

1. What information is contained in a two-way table for a chi-square test?
2. State the null and alternative hypotheses for comparing more than two population proportions.
3. How do you calculate the expected count in any cell of a two-way table assuming the null hypothesis is true?
4. How many degrees of freedom does a chi-square test for a two-way table with r rows and c columns have?
5. What requirements must be checked before carrying out a Chi-square test?
6. Summarize how to carry out a Chi-square Test for Homogeneity of Populations:

7. State the null and alternative hypotheses for a Chi-square test for Association/Independence.
8. Summarize how to carry out a Chi-square Test for Association/Independence: