Week 6 Categorical data

Interval Estimation of Binomial Parameters

`snack`

A random sample of 50 consumers was selected to taste a new snack food. The consumers were proposed to choose among the three answers: "`does-not-like`", "`indifferent`" or "`like`".

1. Use an 80% confidence interval to estimate the proportion of consumers who like the new snack food and interpret your result.

`oilspill`

The spillage amount and cause of puncture for 50 major spills from oil tankers.

1. Use an appropriate graphical method to display the causes of oil spillage for the 50 tankers, and state whether the graph suggests that one cause is more likely to occur than any other.
2. Compute a point estimate for the proportion of major oil spills that are caused by hull failure.
3. Compute a 95% confidence interval for the point estimate, and discuss your result.

Chi-squared tests

`football`

Staff regularly play five-a-side football against students. Over many matches, the number of players that scored goals were recorded, classified according to whether or not they are staff or students. Perform a chi-square test to see whether staff or students scored significantly more goals. Test the hypothesis that students score more goals than staff.