

Solution to exercise 4-6

Background

Summary data from a published paper on the association between smoking habits and mortality.

Statistical methods

The mortality was analyzed using a binomial model and estimates with 95% confidence intervals (CI) are presented. The chi-square test was used to evaluate the hypothesis for no association between smoking habits and mortality.

Results

1. *Estimate the mortality in each of four categories.*
Test the hypothesis of no association between mortality and smoking habits.
2. Discuss the findings.

The mortality proportion were among non-smokers 6.0 % (95% CI: 5.0-7.2%), among smokers of only pipe or cigar 6.5% (95% CI: 4.8-8.6%), among smokers of only cigarettes 9.0% (95% CI: 8.4-9.5%) and among smokers of cigarettes and other 7.5% (95% CI: 7.1-7.9%). There is a statistical significant difference in mortality between the smoking habits groups ($p<0.001$), were the lowest mortality was seen in among non-smokers and the highest mortality was seen in group of only cigarettes smokers. It thus seems that smoking of cigarettes is the most important risk factor.

Do file

```
*****
* Exercise 4.6
*****
* Q1
cii prop 1896 114
cii prop 719 47
cii prop 10770 965
cii prop 14510 1087
tabi 114 47 965 1087 \ 1782 672 9805 13423 , chi column

* Q2
* There is an association but the test does not say what kind of association.
* It looks like cigarettes is the important risk factor.
```