Categorical Data Analysis, autumn 2015

Lecturer: Pekka Pere

Scope: 5 cr

Type: Intermediate studies. The course can be updated to advanced studies by conducting a statistical analysis of real data and writing a careful report of the analysis.

Prerequisites: Statistical inference II. Linear models I is recommendable (the associated matrix algebra is not utilised).

Description: Likelihood based methods for analysis of categorical data are explored. These include confidence intervals and tests for proportions and differences of them, testing for independence, small sample adjustments and methods and logistic regression. McNemar’s test for matched pairs data is also presented. R software is used in homework assignments.

Aspiration: Theory of statistical inference becomes alive in students’ minds in the context of categorical data. Students become aware of potential exciting applications, develop a skill to do them themselves and a desire to learn more.


Other material:

On the relation between the score, likelihood ratio and Wald test.


Satunnaistetut kokeet ja julkinen valta

Naisten ja miesten palkkaerot

Teaching schedule: Detailed schedule. Lectures are on Thursdays 12-14 and Fridays 10-12 (B120). Exercise classes take place on Fridays 12-14 (B120).

3.9. (Thu) 4.9. (Fri)
10.9. (Thu) 11.9. (Fri) + 1. exercise class
17.9. (Thu) 18.9. (Fri) + 2. exercise class
24.9. (Thu) 25.9. (Fri) + 3. exercise class
1.10. (Thu) 2.10. (Fri) + 4. exercise class
8.10. (Thu) 9.10. (Fri) + 5. exercise class
15.10. (Thu) 16.10. (Fri) The last lecture + 6. exercise class
22.10 (Thu) 7. exercise class - at the usual class time!

The exam is on 23.10. (Fri) 12.00-15.00 (sharp) in B120. Sketches for solutions.

Renewal examination takes place at the general examination on the 10.12. Please register as usual to the general examination if you need to renew your examination.

Exercises:

Working out of exercises is rewarded as extra points in the grading of the final examination (details to be explained at the first lecture). Exercises can be solved in groups. An exercise can be marked completed if it appears correct to you and you are ready to present it at the exercises. The rewarded points apply if the student has reached the minimum points from the final examination for passing the course (half of the total points).

1. set of exercises Suggested solutions 1 (finetuned 31.10.)
2. set of exercises Suggested solutions 2 (finetuned 20.9.)
3. set of exercises (revised 24.9., figure added 19.10.) Suggested solutions 3 (finetuned 11.10.)
4. set of exercises Suggested solutions 4 (finetuned 31.10.)
5. set of exercises (Exc. 2 finetuned 11.10.) Suggested solutions 5 (suggestion 2 finetuned 11.10.)
6. set of exercises (Exc. 2 tuned 16.10.) Suggested solutions 6
7. set of exercises (misprints in Excs. 3 and 4 corrected 22.10.) Suggested solutions 7

Register for the course

Did you forget to register? Send e-mail to tilasto-into[at]helsinki.fi.