# Lab Session 8

Outline of lab session:

- some follow-up from lecture (8L−14/15/16),
- Minitab software hint for two-way tables[1]: use menu

  `* Stat-Tables-Cross Tabulation and Chi Square`,

- individual work on the exercises: 9:39,36,38,48,**50**,52; x:**16**; 9:40,**20**,44 (9:62; AI:8; **final2014:1**) — note suggested order!
- summary worksheets: S.8:9, S.11:2 (`jobsatisf`).

Notes and questions for specific exercises:

- Don't forget the models and the conclusions! (two-way table analysis is more than computing the $X^2$-statistic!),
- 9.20: try Fisher's exact test (using software), and compare with the $X^2$-test,
- 9.36, 9.38: maybe use the `Graph-Bar Chart` menu to display charts for status and gender, and combined,
- 9.44: on Simpson's paradox (might be fun!),
- x.16: practice of model choice in 2-way tables,
- final 2014.1: old exam problem involving non-parametric methods and statistical reporting (article at media page).

[1] Stata: `Stat-Summaries-Frequency Tables-Twoway table/Table calculator`; R functions: `xtabs`, `chisq.test`, `fisher.test`.

# Notes on Mid-term Exam

- marks generally lower than for home assignments (this is "normal"): mean/median $\approx 11/15$, but with some variation...,
- most trouble in **e)**, part *i)*: a sign test was not asked for, only a confidence interval (with interpretation),
- issues in descriptive analysis **b)**:
  - assessment of outliers belongs in any description of distributions,
  - a (barely) non-significant normality test does not mean the distribution *is* normal,
- use of $z^*$ instead of $t^*$ for quantitative data is rarely justified,
- models/assumptions and hypotheses often not stated (no penalty this time...),
- some instances of ineffective exam technique:
  - "forgetting" to provide what was asked for: e.g., both parts in **a)** or the estimate in **e)**, part *i)*,
  - doing calculations already in the Minitab listing: e.g., $t$-test for differences in **d)**,
  - not determining and/or focusing on the question asked,
  - some cases of running out of time for **e)**,

  $\Rightarrow$ what can be learned:
  - read very carefully, perhaps underline questions asked,
  - don't forget the (non-technical) conclusions!,
  - spend some time to understand the Minitab listings,
  - distribute your time more equally on the questions,
- final exam: lots of time/opportunity to prepare yourself.