

Home assignment 3
Analysis of Survival Data, fall 2025

Criteria to get your home assignment approved (NOTE: not the same as for the previous assignments):

1. Your report must be complete and handed in on time. See the document 'Home assignment information' for further information.
2. The content of the report is to be presented in the shape of a numbered list, based on the tasks. Please repeat the task/question in each heading.

Information:

Your report (only one per group) needs to be electronically registered (pdf version) at Studium before the deadline noted in the schedule.

All documents you need are to be found at Studium, module "Home assignments".

This home assignment is based on the contents from lectures L1-L7.

If you pass this home assignment on the first try you get 2 bonus points to be added to the points you score on the final exam.

Article to review:

Choose one of the following two options:

- a) Find a recent article where some methodological aspect of the Kaplan-Meier estimator, the Nelson-Aalen estimator, or Cox regression has been investigated, i.e. a statistical research article related to something that we've learned about in class.
- b) Find an applied article from your field of interest where some aspects of survival analysis that we haven't covered in class has been used. Some examples: multilevel (Cox) regression analysis, repeated measurements, causal inference, etc.

A list of articles reviewed by former students is to be found in Studium, make sure your chosen article has not been reviewed previously.

Good luck!

/Inger

Tasks

- 1) Provide a reference to the chosen article.
- 2) What is the purpose of the study?
- 3) Describe the analysis method used/investigated.
- 4) Depending on which article option you've chosen, answer either a) or b) below.
 - a) Why is the investigated methodological aspect of interest?
 - b) Is the choice of method motivated in the article? If not, why do you think this method has been chosen?
- 5) Depending on which article option you've chosen, describe
 - a) how censoring is taken into consideration
 - b) the type(s) of censoring and/or truncation that could be present (if any), and how many (or degree of) censored observations there are and for what reason they are censored.
- 6) Depending on which article option you've chosen:
 - a) If a simulation study is described, how do they motivate the choice of sample size and number of replications? If your article doesn't contain a simulation study, is the sample size aspect discussed in any other way?
 - b) How many observations/events is the analysis based upon, and what happened to any ones not included in the analysis (why weren't they included)?
- 7) Depending on which article option you've chosen:
 - a) How is the aspect of covariates discussed?
 - b) Which covariates are included in the analysis (if any)?
- 8) Are the assumptions of the method evaluated in the article? If not, is it reasonable that they hold? If the assumptions don't hold, what impact does that have on the conclusions?
- 9) Do you miss anything in the article? Think in terms of assumptions, regression diagnostics, ethics considerations, etc.
- 10) Summarize the results/conclusions of the article.