LIFETIME DATA ANALYSIS

Information on the practical work

Delivery: January 7, 2022.

1   Contents

The practical work consists of analyzing a data set and writing a report that should have the following structure:

1. Introduction (1 Point)

2. Descriptive analysis (1.25)

3. Nonparametric analysis (2)

- Estimation of the survival function.

- Estimation of the median survival time.

- Comparison of survival functions by means of nonparametric tests such as the logrank test.

4. Fit of a parametric survival model (2.25)

- Fit of a Weibull, log-logistic, or lognormal model.

- Interpretation of the model fit.

- Interpretation of the model parameters in terms of relative hazards or relative odds, and the accelerating factor.

5. Fit of a semi-parametric model (2.25)

- Fit of the proportional hazards models.

- Interpretation of the model fit.

- Interpretation of the model parameters in terms of relative hazards.

- Analysis of the residuals to check the model's goodness-of-fit.

6. Conclusions (0.75)

The report can be written in either Catalan, Spanish, or English and it should comprise approximately 10 to 12 pages with a maximum number of five tables and five figures. Half a point is given for a good presentation of the work.

2   Data sets

Data set	Students
`AIDS.txt`	Àlex & Helena
	Arvin & Johanna
	Elena
`BreastCancer.txt`	Clara & Jordi
	Elise & Tess
	Nuria Bot.
`Burn.txt`	Carlota & Carlota
	Nina
	Grace
`Pbc.txt`	Núria Bos. & Oriol M.
	Nuria S.
	Hugo
`KidneyCancer.txt`	Esther & Maialen
	Oriol P.
	Isabel
`ProstateCancer.txt`	Johannes & Ulrik
	Adrià
	Ernest
`STD.txt`	Alexander & Rodrigo
	Alba & Pere
	Hai Yen