

GV903: Advanced Research Methods

Class 19 Survival Models

Read directly in R the dataset from this link:

<http://socserv.mcmaster.ca/jfox/Books/Companion/data/Rossi.txt>

1. Keep the first 10 variables and have a quick look at the dataset.
2. Fit a Cox proportional hazards model using the `coxph` function without any covariates. The model will be

```
coxph(Surv(week, arrest) ~ 1)
```

but remember to use the dataset! Also store this fit into an object.

3. Plot the survival curve using `plot(survfit(cox0))` where `cox0` is the model fit from the previous step. You'll probably want to adjust the plot, find out how.
4. Fit a Cox model using the financial aid variable as covariate. Store this fit into an object and examine the effect of financial aid.
5. Print the output of the model using *stargazer* but report the Odds Ratios.
6. In order to plot the survival curves for the two values of `fin` we need to use it in the model as `strata(fin)`. You might want to change the colours or the types of the lines.
7. Now fit a Cox model on financial aid and race. Examine the effects and plot the survival curves.
8. Fit a Cox model using more variables that are available in the dataset.