Problem Set 4

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Due: April 16, 2023

Instructions

- Please show your work! You may lose points by simply writing in the answer. If the problem requires you to execute commands in `R`, please include the code you used to get your answers. Please also include the `.R` file that contains your code. If you are not sure if work needs to be shown for a particular problem, please ask.
- Your homework should be submitted electronically on GitHub in `.pdf` form.
- This problem set is due before 23:59 on Sunday April 16, 2023. No late assignments will be accepted.

Question 1

We're interested in modeling the historical causes of child mortality. We have data from 26855 children born in Skelleftea, Sweden from 1850 to 1884. Using the "child" dataset in the eha library, fit a Cox Proportional Hazard model using mother's age and infant's gender as covariates. Present and interpret the output.

```
## Import Data
data(child)

## Coz-Harzard
add_surv <- coxph(Surv(enter, exit, event) ~ m.age + sex, data = child)
summary(add_surv)
stargazer(add_surv, title = "Child Survivial")
```

Interpretation:
Holding other covariates constant, when mother's age increases by 1 year, the log hazard of children's death increases by 0.008 on average.

Holding other covariates constant, when the gender of infants moves from the category of male to female, the log hazard of children's death decrease by 0.082 on average.

Table 1: Child Survivial

	Dependent variable:
	enter
m.age	0.008^{***}
	(0.002)
sexfemale	-0.082^{***}
	(0.027)
Observations	26,574
R^2	0.001
Max. Possible R^2	0.986
Log Likelihood	$-56{,}503.480$
Wald Test	22.520^{***} (df = 2)
LR Test	22.518^{***} (df = 2)
Score (Logrank) Test	22.530^{***} (df = 2)
Note:	*p<0.1; **p<0.05; ***p<0.01