

Cox Regression

GET TO KNOW THE DATA

1. What is the mean time (months) for spell 2 to begin? *3.21 months*
2. What is the mean time (months) for spell 2 to end? *15.41 months*
3. What proportion of families earn less than £30K net? *.654 (or 65.4%)*
4. How many boys and how many girls are in the study? *172 boys & 169 girls*
5. How old is the youngest mother? *19 years*
6. How old is the oldest mother? *45 years*
7. What is the mean and standard deviation of mothers age (years)?
28.13 years s.d.=5.691
8. Compute the mean and the standard deviation of this variable.
12.199 months s.d.=7.48
9. How many cases are censored? *52 – but there are 38 cases with time =24*

13.

<u>Covariate</u>	<u>Mean</u>
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inc p<.001

£30K + net	16.18
Up to £30K net	10.08

gender p=.808

Boy	12.09
Girl	12.30

childm p=.895

no	12.22
yes	12.10

nursery p<.001

no	15.61
yes	5.82

14. What do these results suggest?

Income and nursery care are significant; gender and childminder care are not.



$r=-.013$ $p=.817$

15. What does this suggest?

Mother's age is not significant.

16. Which covariates are significant?

inc, childm and nursery.

17. What are the effects of family income and type of childcare?

Families with a net income of up to £30K have an increased hazard (i.e. lower duration) for childcare spell number 2 compared with families with a net income of £30K plus.

Mothers who use either childminders or nurseries have an increased hazard (i.e. lower duration) for childcare spell number 2 compared with mothers who use a relative (i.e. extended family member).

18. Could type of childcare have a different effect depending on family income?
Yes.

19. Which variables are significant?

inc, childm, nursery, inc*childm, inc*nursery

21. Which variables are significant?

inc, type, inc*type

23. Examine the distribution of this new variable and the compute its mean and standard deviation. 2.16 s.d. = .96769

24. Which variables are significant? ***inc, childm, nursery***

25. What do you notice about the signs of the estimates (B) compared with the Cox model? *The signs are reversed.*

26. Why might this be? *Because we are now modelling \log_e time rather than the hazard.*

27. Why is this model inappropriate? *Because it does not take account of the 38 (11%) of censored cases.*