SABRE

EXERCISE 2 Longitudinal Logit

File: WEMP2.DAT

THE VARIABLES

case	individual identifier
femp	wife's employment status; 1=employed, 0=unemployed
mune	husband's employment status; 1=unemployed, 0=employed
time	calendar time (year-1975)
und1	children aged < 1 year old; 1=yes, 0=no
und5	children aged 1 - 5 years old; 1=yes, 0=no
age	mother's age

1. Declare the variables; read the data; specify the response variable.
You should have read in 1580 observations.

2. To keep a log of your work.

<S> outfile out2

3. Fit a cross-sectional (i.e. pooled) logistic regression model with mune as an explanatory variable.

<S> lfit int mune

4. Note the deviance and degrees of freedom for this model.

5. Fit a longitudinal logistic regression model with mune as an explanatory variable.

<S> fit int mune

6. Note the deviance and the degrees of freedom of this model.

7. Is the longitudinal model an improvement?

8. Is there significant residual heterogeneity?

9. Compute a Z score, Wald test for the variable mune.

10. Construct a 95% confidence interval for the estimate of mune. Could the true value of the parameter estimate be zero?

11. What do these measures suggest about the effects of husband's employment status on a wife's labour market participation?

12. Now look at the effects of the other variables und1 und5 & age. Fit each variable in turn and note the change in deviance and degrees of freedom.

13. Which variables are significant?

14. Add the time variable to this model. Is it significant?

15. What can we conclude?

16. Some theorists argue that the effects of age are not linear. Let us construct a variable called for age^2.

<S> tran agesq age ^ 2   or   <S> tran agesq   age * age

17. Add both age and agesq to the model (with int mune und1 und5). What might we conclude?

18. Could we fit just agesq in the model?

<S> fit - age

19. Overall, what is our most appropriate model and why?

20. What substantive conclusions can we draw from this our analysis of this dataset?

21. Now exit SABRE and take a look in the log file out2.