**Chapter 9 Exercises: Solutions**

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| . svyset vpsu [pw=wtss], strata(vstrat)  pweight: wtss  VCE: linearized  Single unit: missing  Strata 1: vstrat  SU 1: vpsu  FPC 1: <zero>  . xi: svy: ologit fechld i.sex educ age kidjob sibs  i.sex \_Isex\_1-2 (naturally coded; \_Isex\_1 omitted)  (running ologit on estimation sample)  Survey: Ordered logistic regression  Number of strata = 66 Number of obs = 1251  Number of PSUs = 132 Population size = 1261.6534  Design df = 66  F( 5, 62) = 15.29  Prob > F = 0.0000  ------------------------------------------------------------------------------  | Linearized  fechld | Coef. Std. Err. t P>|t| [95% Conf. Interval]  -------------+----------------------------------------------------------------  \_Isex\_2 | -.6777094 .1346173 -5.03 0.000 -.9464814 -.4089374  educ | -.0905095 .0177448 -5.10 0.000 -.1259382 -.0550808  age | .0041061 .003479 1.18 0.242 -.0028399 .0110521  kidjob | -.3047047 .0607817 -5.01 0.000 -.4260594 -.18335  sibs | .0560435 .0197599 2.84 0.006 .0165916 .0954954  -------------+----------------------------------------------------------------  /cut1 | -3.34777 .435071 -7.69 0.000 -4.216417 -2.479123  /cut2 | -1.160974 .412637 -2.81 0.006 -1.98483 -.3371176  /cut3 | .8907578 .4075036 2.19 0.032 .0771507 1.704365  ------------------------------------------------------------------------------  . xi: svy: ologit, or  Survey: Ordered logistic regression  Number of strata = 66 Number of obs = 1251  Number of PSUs = 132 Population size = 1261.6534  Design df = 66  F( 5, 62) = 15.29  Prob > F = 0.0000  ------------------------------------------------------------------------------  | Linearized  fechld | Odds Ratio Std. Err. t P>|t| [95% Conf. Interval]  -------------+----------------------------------------------------------------  \_Isex\_2 | .5077788 .0683558 -5.03 0.000 .3881042 .6643558  educ | .9134657 .0162093 -5.10 0.000 .8816693 .9464087  age | 1.004115 .0034933 1.18 0.242 .9971642 1.011113  kidjob | .7373411 .0448169 -5.01 0.000 .6530776 .8324767  sibs | 1.057644 .0208989 2.84 0.006 1.01673 1.100204  -------------+----------------------------------------------------------------  /cut1 | -3.34777 .435071 -7.69 0.000 -4.216417 -2.479123  /cut2 | -1.160974 .412637 -2.81 0.006 -1.98483 -.3371176  /cut3 | .8907578 .4075036 2.19 0.032 .0771507 1.704365  ------------------------------------------------------------------------------ |

3. The number of strata is 66, and the number of PSUs is 132.

4. *F*(5, 62) = 15.29, *p* < .001.

5. The odds ratios for sex, educ, and sibs are .508, .913, and 1.058, respectively.

6.

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| . ologit fechld i.sex educ age kidjob sibs  Iteration 0: log likelihood = -1494.7622  Iteration 1: log likelihood = -1428.1165  Iteration 2: log likelihood = -1427.3919  Iteration 3: log likelihood = -1427.3912  Iteration 4: log likelihood = -1427.3912  Ordered logistic regression Number of obs = 1251  LR chi2(5) = 134.74  Prob > chi2 = 0.0000  Log likelihood = -1427.3912 Pseudo R2 = 0.0451  ------------------------------------------------------------------------------  fechld | Coef. Std. Err. z P>|z| [95% Conf. Interval]  -------------+----------------------------------------------------------------  sex |  female | -.745441 .108661 -6.86 0.000 -.9584125 -.5324694  educ | -.1029107 .0180097 -5.71 0.000 -.1382091 -.0676122  age | .0063142 .0030288 2.08 0.037 .0003778 .0122506  kidjob | -.2954451 .0502405 -5.88 0.000 -.3939147 -.1969755  sibs | .0519803 .0173974 2.99 0.003 .017882 .0860787  -------------+----------------------------------------------------------------  /cut1 | -3.362494 .3569524 -4.062108 -2.66288  /cut2 | -1.195837 .3445906 -1.871222 -.5204518  /cut3 | .8535894 .3557519 .1563284 1.55085  ------------------------------------------------------------------------------ |

In the conventional PO model, the logit coefficient for sex is –.745 with a standard error of .109; in the PO model with complex sampling survey designs, the logit coefficient for sex is –.678 with a linearized standard error of .135.