**Chapter 3 Exercises: Solutions**

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| . recode gunlaw (1=1) (2=0), generate (gun)(339 differences between gunlaw and gun). logit gun i.sex educ ageIteration 0: log likelihood = -737.66849 Iteration 1: log likelihood = -718.64738 Iteration 2: log likelihood = -718.48465 Iteration 3: log likelihood = -718.48463 Logistic regression Number of obs = 1276 LR chi2(3) = 38.37 Prob > chi2 = 0.0000Log likelihood = -718.48463 Pseudo R2 = 0.0260------------------------------------------------------------------------------ gun | Coef. Std. Err. z P>|z| [95% Conf. Interval]-------------+---------------------------------------------------------------- sex | female | .6709692 .1290066 5.20 0.000 .4181209 .9238174 educ | .0047306 .0210362 0.22 0.822 -.0364995 .0459607 age | .0118549 .0037871 3.13 0.002 .0044323 .0192775 \_cons | .0493324 .3520676 0.14 0.889 -.6407074 .7393722------------------------------------------------------------------------------ |

2. LR chi2(3) = 38.37 and the associated *p* value, Prob > chi2 = 0.0001, indicate that the overall model with three predictor variables is significant.

3. Deviance = 1436.969.

4. *R2*L = .026, AIC = 1444.969, AIC divided by *N* = 1.132, and BIC = 1465.575.

5. For the educ predictor, logit coefficient = .005, the Wald *z* = .22, *p* = .822, and the 95% CI is [–.036, .046].

6. OR for educ = 1.005, *p* = .822, which indicates that educational level does not impact the odds of favoring gun permits.

OR for age = 1.012, which indicates that for each one-unit increase in age, the odds of favoring gun permits increase by 1.012.