**Chapter 3 Exercises: Solutions**

1.

|  |
| --- |
| . recode gunlaw (1=1) (2=0), generate (gun)  (339 differences between gunlaw and gun)  . logit gun i.sex educ age  Iteration 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 = 0.0000  Log 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.