Additional Empirical Exercise 7.1

Use the data set **CPS12** described in Empirical Exercise AEE4.1 to answer the following questions.

a. Run a regression of average hourly earnings (*AHE*) on age (*Age*). What is the estimated intercept? What is the estimated slope?

b. Run a regression of *AHE* on *Age*, gender (*Female*), and education (*Bachelor*). What is the estimated effect of *Age* on earnings? Construct a 95% confidence interval for the coefficient on *Age* in the regression.

c. Are the results from the regression in (b) substantively different from the results in (a) regarding the effects of *Age* and *AHE*? Does the regression in (a) seem to suffer from omitted variable bias?

d. Bob is a 26-year-old male worker with a high school diploma. Predict Bob's earnings using the estimated regression in (b). Alexis is a30-year-old female worker with a college degree. Predict Alexis's earnings using the regression.

e. Compare the fit of the regression in (a) and (b) using the regression standard errors, R^2 and $\overline{R}^2$. Why are the R^2 and $\overline{R}^2$ so similar in regression (b)?

f. Are gender and education determinants of earnings? Test the null hypothesis that *Female* can be deleted from the regression. Test the null hypothesis that *Bachelor* can be deleted from the regression. Test the null hypothesis that both *Female* and *Bachelor* can be deleted from the regression.

g. A regression will suffer from omitted variable bias when two conditions hold. What are these two conditions? Do these conditions seem to hold here?