### Examining Regression Results

**Vartanian: SW 540**

#### Example 1
**DV:** Years of Education  
**IV:** # of siblings

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs = 4627</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>455.234223</td>
<td>1</td>
<td>455.234223</td>
<td>$F(1, 4625) = 90.33$</td>
</tr>
<tr>
<td>Residual</td>
<td>23308.0569</td>
<td>4625</td>
<td>5.03957987</td>
<td>Prob &gt; $F$ = 0.0000</td>
</tr>
<tr>
<td>Total</td>
<td>23763.2911</td>
<td>4626</td>
<td>5.13689821</td>
<td>Adj R-squared = 0.0189</td>
</tr>
</tbody>
</table>

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| grademax | Coef.  | Std. Err. | $t$ | $P>|t|$ | [95% Conf. Interval] |
|----------|--------|-----------|-----|--------|---------------------|
| kds      | -0.1848503 | 0.0194491 | -9.50 | 0.000   | -0.2229799 to -0.1467208 |
| _cons    | 13.47645 | 0.0625277 | 215.53 | 0.000   | 13.35387 to 13.59903 |

Determining the 95% confidence interval:

The formula for the 95% confidence interval is

$$b \pm SE \times CV =$$

$$b \pm 0.194491 \times 1.96 =$$

$$-0.18485 \pm 0.03724 =$$

$$-0.1467, and -0.22297$$

With a relatively large sample size, we can use the $t$ value of 1.96. $CV$ is the critical value. We are thus 95% confident that the population B lies between these two values. Because the confidence interval does not contain 0, we can reject the null hypothesis.
Example 2:

We’re examining the effects of the number of siblings while growing up on adult family income-to-needs. A value of 1 for family income-to-needs right at the poverty line. A value of 2.7 for family income-to-needs indicates that the person is at 2.7 times the poverty line.

```
Source    SS       df       MS               Number of obs =    4627
-------------+------------------------------            F(  1,  4625) =   136.79
Model       459.559652     1  459.559652           Prob > F      =  0.0000
Residual    15538.6954  4625  3.35971792           R-squared     =  0.0287
-------------+------------------------------            Adj R-squared =  0.0285
Total       15998.2551  4626  3.45833443           Root MSE      =   1.833
-------------+------------------------------
     endfmns |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+---------------------------------- ------------------------------
       kds |  -.1857265   .0158801   -11.70   0.000    -.2168591   -.1545938
       _cons |   3.151962   .0510536    61.74   0.000     3.051872    3.252051
```

Example 3

We’re examining the effects of the age of the head of household when the child was age 14 on their income as an adult.

```
Source    SS       df       MS               Number of obs =    4627
-------------+------------------------------            F(  1,  4625) =   17.35
Model      3.6042e+10     1  3.6042e+10           Prob > F      =  0.0000
Residual   9.6078e+12  4625  2.0774e+09           R-squared     =  0.0037
-------------+------------------------------            Adj R-squared =  0.0035
Total      9.6439e+12  4626  2.0847e+09           Root MSE      =   45578
-------------+------------------------------
     income |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+---------------------------------- ------------------------------
      hdag |   353.7284   84.92259     4.17   0.000     187.2396    520.2171
      _cons |   44359.33   3664.267    12.11   0.000     37175.62    51543.04
```