**Lab #3**

**Introduction**

Worker’s earnings vary as they according to multiple factors, including age, gender, and education. The correlation of Average Hourly Earnings (AHE) on education, gender, and age was computed and conclusions were drawn.

**Data and Methods**

The Bureau of Labor Statistics conducts the Current Population Survey, which provides data on the U.S. workforce. 65,000 households are randomly surveyed each month. The sample is selected by picking random addresses from a database of addresses, kept up to date with new units. The random sampling procedure is complicated and can be read about in the *Handbook of Labor Statistics.*

Data was used from the March 2005 Survey for full-time workers, working more than 35 hours per week for at least 48 weeks in the previous year. Only observations of the subject’s average hourly earnings, education level, and age are used. Table 1 the lists variables used and their definitions.

For this investigation, average hourly earnings were regressed on age using ordinary least squares regression with heteroskedastic-consistent standard errors. Stata was used to perform the regressions.

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| Table 1. Variables and Summary Statistics | | | | |
| Variable | **Number (N)** | **Mean** | **Definition** | **Std. Dev.** |
| Year | 15052 | 2001.886 | The year the observation was made | 9.999679 |
| AHE (USD) | 15052 | 15.66179 | Average Hourly Earnings | 9.44204 |
| Bachelor | 15052 | .4595403 | 1 if the subject had a bachelor’s degree, 0 if not | .4983769 |
| Female | 15052 | .4252591 | 1 if the subject was female, 0 if male | .4943987 |

**Results**

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| Table 2. Regressions of AHE on Age, Female, and Bachelor | | | | |
|  | **(1)** | | **(2)** | |
| **Regressor** | **Coefficient** | **95% Confidence Interval** | **Coefficient** | **95% Confidence Interval** |
| Age | 0.4392042\*\*\* | [0.380100, 0.498308] | 0.4519313\*\*\* | [0.387306, 0.516555] |
|  | (0.0301511) |  | (0.0329673) |  |
| Female | -3.157864\*\*\* | [-3.50206, -2.81366] |  |  |
|  | (0.1755882) |  |  |  |
| Bachelor | 6.86515\*\*\* | [6.502444, 7.22785] |  |  |
|  | (0.1850291) |  |  |  |
| Constant | 1.883798\* | [0.124969, 3.642626] | 3.324185\*\*\* | [1.43116, 5.21720] |
|  | (0.8972419) |  | (0.9656963) |  |
| Observations | 7986 |  | 7986 |  |
| Adjusted *R*2 | 0.190 |  | 0.022 |  |
| *R*2 | 0.19 |  | 0.0223 |  |
| SER | 7.8843 |  | 8.6612 |  |
| ***F* Statistics and *t-*Tests** | | | | |
| Female=0 | 75.2403\*\*\*  (0.0055137) |  |  |  |
| Bachelor=0 | 81.7793\*\*\*  (0.0055735) |  |  |  |
| Bachelor, Female=0 | 752.95\*\*\*  (0.0000) |  |  |  |

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001 Robust standard errors in parenthesis. p-values are under f-statistics and Standard Errors are under t-tests and coefficients.

Table 2 shows a regression of AHE on age, female, and bachelor. On average, AHE increases by $0.452 per year of a worker’s career holding everything else constant. Accounting for the other factors, AHE increases by $0.439 per year of a worker’s career. Women earn $3.157 less than men per hour and college graduates earn $6.865 more than high school graduates. The coefficients and constants are all significant at 95% confidence.

**Conclusion**

AHE increased by $0.452 per year of a worker’s career, ceteris paribus, but it accounts for a smaller change accounting for gender and education. Having a bachelor’s degree has the same effect on earnings of 15.63 years of experience and being male has the same effect as 7.187 years of experience.