**Lab Write up #2**

**Introduction**

Worker’s earnings vary as they age. As workers gain experience, their wages go up. The correlation of age on average hourly earnings (AHE) 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** | **Observations** | **Mean** | **Std. Dev.** | **Definition** |
| AHE in U.S. Dollars | 7986 | 16.77115 | 8.758696 | Average Hourly Earnings |
| bachelor | 7986 | 0.455798 | 0.498074 | 1 if the subject had a bachelor’s degree, 0 if not |
| Age | 7986 | 29.75445 | 2.891125 | Age measured in years |

**Results**

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| Table 2. Regression of AHE on Age, by Education Level | | | | | |
|  | **Coefficient** | **95% Conf. Interval for Coefficient** | **Constant** | **95% Conf. Interval for Constant** | **Observations** |
| Combined | 0.452\*\*\*  (0.0344) | [0.387, 0.517] | 3.324\*\*\*  (0.966) | [1.431, 5.217] | 7986 |
| High School Graduates | 0.256\*\*\*  (0.0344) | [0.188, 0.323] | 6.200\*\*\*  (1.016) | [4.209, 8.191] | 4346 |
| College Graduates | 0.690\*\*\*  (0.0529) | [0.587, 0.794] | -0.233  (1.548) | [-3.267, 2.802] | 3640 |

Standard Errors in brackets, R2= 0.0223, \*p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table 2 shows a regression of AHE on age. On average, AHE increases by $0.452 per year of a worker’s career. It increases by $0.256 for high school graduates and $0.690 for college graduates. The coefficients and constants are all significant at more than 99% confidence, except the constant for college graduates.

The constant for college graduates is not significant at the 95% confidence level. A possible explanation for a higher, statistically significant constant for high school graduates is that many earn minimum wage. From the data, it is evident that college graduate’s AHE increases faster with age, with a difference in the increase of $0.434 per year. Age accounts for 0.0223 percent of the variation in earnings.

**Conclusion**

The data shows that any income disparity between high school and college graduates increases with age. College graduates’ AHE increases faster than high school graduates as they age. On average, workers’ AHE has increased by $0.452 per year. AHE has increased by $0.256 for high school graduates and $0.690 for college graduates.