**Does Commute Time Affect Student Sleep?**

**An Observational Study of Moses Brown AP Statistics Students**

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# Abstract

The survey was completed by 16 of 19 (84% response rate) AP Statistics students and includes data from one AP Statistics teacher for a total sample size of 17. Commute time was skewed right with a mean commute time of 14 minutes and a median commute time of 4 minutes. Most students live in Providence county and the fewest number of students come from Newport county. Hours of sleep the night before was roughly normal with a mean of 7.8 hours and a median of 8 hours. There was a moderately strong, negative linear relationship between commute time and hours of sleep (r2 = 22.5%), indicating that the longer a student’s commute, the less time they have to sleep.

# Figure 1: Commute Time



# Figure 2: County



# Figure 3: Hours of Sleep



# Table 1: Descriptive Statistics for Commute Time and Hours of Sleep

Variable Mean StDev Minimum Q1 Median Q3 Maximum

Commute 14.03 14.82 1.00 2.25 4.00 25.00 45.00

Sleep 7.794 1.437 5.000 7.000 8.000 8.000 10.500

# Figure 4: Scatterplot of Sleep vs. Commute Time



# Figure 5: Residual plot for Sleep vs. Commute Time



# Table 2: Regression Results for Sleep vs. Commute

**Regression Analysis: Sleep versus Commute**

The regression equation is

Sleep = 8.44 - 0.0460 Commute

Predictor Coef SE Coef T P

Constant 8.4388 0.4429 19.05 0.000

Commute -0.04595 0.02205 -2.08 0.055

S = 1.30672 R-Sq = 22.5% R-Sq(adj) = 17.3%