Group 3: Class Group Exercise Two Fall 2020

Our group wanted to examine the relationship between students' credit hours and work hours. This topic was chosen because work life balance is important, and our group wanted to investigate whether students typically prioritized school over work. To do this we crafted the following research question - "Do students who take more credit hours a semester, work fewer hours a week?". Our hypotheses are as follows:

H0: Students who take more credit hours do not work fewer hours.
H1: Students who take more credit hours work fewer hours.

The independent variable in our study is credit hours taken per semester and our dependent variable is the number of hours typically worked per week. We operationalized the variables through our survey design, and selected 30 students to complete the following survey:
1. How many credit hours are you currently taking?
   a. _____ credit hours
2. Do you currently have a job?
   a. Yes (Go to Q3)
   b. No (End survey)
3. Did you have this job when this semester started?
   a. Yes
   b. No
4. How many hours do you typically work a week?
   a. _____ hours
5. Did you change the number of hours worked to accommodate the credit hours you are currently taking?
   a. Yes
   b. No

We converted the responses of yes/no to binary variables, with Yes assigned a 1 and No assigned a 0. This data was gathered through oral interviews and tracked on an Excel spreadsheet. Using data analysis software (STATA and RStudio), we analyzed the data through descriptive and inferential statistics. Through inferential statistics we found that our independent variable (credit hours) and dependent variable (work hours) had a significant relationship with a correlation coefficient of -0.5630 at a 99% confidence interval, indicating a negative correlation between the variables. Next we ran an F test to see if there was any statistically significant variance between students who report having a job and students who report not currently working. The F test did show statistically significant differences in variance at the 95% confidence level. We used this information to run a t test with unequal variances to test our hypothesis. Stata generated our p value at 0.0000 which is also considered $p<0.001$. This very small p-value allows us to reject the null hypothesis since we would only obtain this result by chance fewer than 1 time in 1,000. These results support our alternative hypothesis H1, that students who take more credit hours work fewer hours and reject the null hypothesis H0 that students who take more credit hours do not work fewer hours. In conclusion, there are a few issues that will significantly limit generalizability due to our sample; our respondents were treated as a sample drawn from a

population as our survey collection methodology used convenience sampling and as such was not a true random sample. If it were possible to perform a longer survey, that could help account for some of the following additional factors as this survey did not consider the possibility of switching jobs during the semester, and some participants reported a range of hours which was then converted into a mean for use in statistical analysis. The pandemic has had a large impact in

the employment rate, it likely affected our sample in unpredictable ways. We were not able to account for factors like whether work was done in person or remotely. More research could be done to take another sample post-Covid-19 to see if the results vary.

Regression Table

	Dependent Variable: Work Hours
Credit Hours	-2.5***
	(0.7)
Job	11.3
	(16.3)
Job at Start of Semester	3.5
	(9.8)
Change of Hours Worked	-3.0
	(6.9)
Constant	43.7**
	(16.6)
Observations	24
R2	0.6
Adjusted R2	0.5
Residual Std. Error	13.1 (df = 19)
F Statistic	6.0*** (df = 4; 19)
Note:	*p<0.1; **p<0.05; ***p<0.01

Relationship between Credit Hours and Work Hours

Credit Hours vs Work Hours

■ credithrs ■ workhrs