INTRODUCTION

As a student of Stephen F. Austin State University, I was intrigued to find a relationship between student living habits and cumulative college GPA (grade point average). The manner in which we conducted our project was to randomly distribute and collect surveys from the student body. Our survey consisted of many variables that were analyzed to study how they impact a student’s cumulative college GPA. After running the regression equation against our actual GPA’s, we have inferred that our statistical model is on average a reasonable estimate of actual GPA's.

EVALUATING THE REGRESSION

Goodness of Fit
Our Adjusted R² was .23 which means that 23% of the variation in Current GPA is explained by our model. Our Adjusted R² of .23 was fairly good considering that human behavior is known to be difficult to model, as expected.

Significant Variables
The significant variables in our regression are HS GPA and White because both of their p-values fall under our alpha of 0.05. HS GPA has a p-value of 0.003 and White has a p-value of 0.007. The next closest significant variables in our regression that was deemed relevant was Parrying per Week, with a p-value of 0.06, and Exercise per Week, with a p-value of 0.08, because their p-values fell under an alpha of 0.1. The other variables in our regression had p-values greater than or equal to alpha 0.1 so they were not significant variables.

Signs and Magnitudes
When looking at the signs and magnitudes of our variables in our regression we agree that the coefficients of our variables correctly state the relationship we expected with our dependent variable, Current GPA. We expected the variables of Female, HS GPA, Exercise per Week, and White to have positive coefficients because these variables are expected to increase Current GPA. Parrying per Week was expected to have negative coefficients as an increase in these variables would decrease Current GPA.

Sample Size
Large samples always lead to more accurate predictions. For our project we sampled over 100 people on campus. While sampling people we assumed that their information would be kept private and anonymous by having a box for their results and in return we hoped for their honest results. If we had every student on campus take this survey our prediction of a student’s Current GPA should be closer to their actual Current GPA than the prediction we have obtained with only 100 samples.

Potential Variables Left Out
Potential variables left out that would have contributed to our project would be if they’re in a relationship or not, if they are a part of the university Greek system, and a rating of their test taking abilities from 1 – 10.

Irrelevant Variables
The variable with the highest p-value in our regression was Female. This indicated that whether or not the student was Female had a minimal effect on their current GPA. Although, with an alpha just over .1 we deemed it as minimal because we were mainly concerned with variables having an alpha below .1 or .05 as these variables impacted GPA much more greatly.

EXECUTIVE SUMMARY

As a student of Stephen F. Austin State University, I was intrigued to find a relationship between student living habits and cumulative college GPA (grade point average). The manner in which we conducted our project was to randomly distribute and collect surveys from the student body. Our survey consisted of many variables that were analyzed to study how they impact a student’s cumulative college GPA. After running the regression equation against our actual GPA’s, we have inferred that our statistical model is on average a reasonable estimate of actual GPA’s.

CONCLUSION

The purpose of our project was to effectively prove that certain aspects of a student’s weekly activities have a positive or negative relationship when comparing to their cumulative college GPA. We have come to the conclusion that having a high High School GPA, the ability of the student, if the student is male or female, and the amount of hours a student exercises per week are clear positive affective factors in adequately predicting changes to Current GPA.

In the future our research can be furthered by increasing the sample size and including omitted variables in the survey to get a more accurate regression equation for more efficacious predictions of student’s Current GPA.

DATA

Current GPA: The average current GPA is 2.889, the minimum GPA was 1.4, and the maximum GPA was 4.5. This average of current GPA was relatively close to other averages estimated by previous projects.

Female: The average mean of females is 0.614, which means that females are on average 61% of the population here at Stephen F. Austin State University. The female variable was a dummy variable in our regression equation.

HS GPA: The high school school GPA was 3.391 on a 4.0 scale. The minimum high school GPA was 2.5 and the maximum was 4.5. We believe that this range is an accurate sample of the population.

Parrying per Week: The average number of nights a student parties per week is 1.515, according to our summary statistics. The minimum number of nights a student parties to is 0 while the maximum number of nights is 7. This maximum number seems unlikely because it is highly unlikely that someone parties every day of the week for every week of the year.

Exercise Hours per Week: The average number of exercise hours per week is 5.411 hours. The minimum exercise hours is 0 and the maximum is 28 hours.

White: This variable is a dummy variable in our regression and it was chosen because White had the greatest percentage of all ethnicities we sampled. It had a mean of 0.446.

GPA PREDICTION

\[ \hat{y} = 1.365 + 0.406(\text{Female}) + 0.389(\text{High School GPA}) - 0.72(\text{Parrying per Week}) - 0.012(\text{Exercise per Week}) + 0.292(\text{White}) \]

* Submitted by: Justin Rodriguez
* Prepared by: Justin Rodriguez, Malcolm Recinos, and Carla Torres
* Faculty Sponsor: Ryan Phelps (Economics and Finance)
* Nelson Rusche College of Business at Stephen F. Austin State University