



WHITE PAPER SERIES

Student Attitudes About Attending College Fall 2019

Decision Support and
Institutional Research

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EXECUTIVE SUMMARY

Last summer, a 16-item survey was administered at the freshmen Registration, Orientation and Welcome (ROW) event to determine student attitude about attending Austin Peay State University. A total of 1,442 respondents completed the survey and were successfully matched to the student database.

Analysis of the survey specifically focused on the differences between responses of Pell versus non-Pell recipients as well as first generation students versus non-first generation students. A regression model was also run to determine what factors may be related to student success. According to the study:

- Pell students believed, to a greater extent over non-Pell students, that they would make good grades during the first semester.
- Pell students believed, to a greater extent over non-Pell students, that money was not a stressor in life.
- Pell students, however, were more apprehensive, to a greater extent over non-Pell students, about their ability to purchase textbooks and other supplies.
- The non-first generation group believed, to a greater extent over the first generation group, that they had the talent necessary to complete the first semester of college.
- The non-first generation group believe, to a greater extent over the first generation group, that money was not a stressor in life.
- The non-first generation group believed, to a greater extent over the first generation group, that they would be able to purchase textbooks and supplies.
- The non-first generation group believed, to a greater extent over the first generation group, that many of their friends would be attending college.
- A regression analysis indicated that student's perception of their family's support, financial situation, and how well their class load fits their interests are significantly related to their level of apprehension in coming into college.
- The regression analysis also indicated that high school GPA had no significant effect on apprehension towards college academic performance.

INTRODUCTION

As the business community and corporate world continue to move forward, the need to have a bachelor's degree increases. Researchers consistently find that employers favor hiring those who have a bachelor degree over those who have an associate's degree or a high school diploma (Arkes, 1999).

This knowledge creates a demand for higher education to generate capable bachelor degree holders who are ready for the work force. Thousands of students enter college every year; however, a significant portion of them leave college prematurely and do not finish their degree.

According to the National Center for Educational Statistics, retention rate is defined as, "those who are first-time undergraduate students that return to the same university the next year." The national retention rate in 2016-2017 of 4-year public universities was 81% (NCES, 2019). This statistic means that 19% of students who started at a 4-year public institution did not return to the university after the first year.

In 2018, Austin Peay State University's (APSU) retention rate of all freshmen was 63%, meaning that 37% of freshmen at APSU are not continuing their education at the institution. APSU's retention rate is also significantly lower than the Consortium for Student Retention Data Exchange (CSRDE) national comparator average for moderately selective institutions. Furthermore, the aspirational retention rate goal set by APSU administration in 2019 is 71%, ensuring that the institution will have focus on keeping more of its new freshmen. With an increasing demand for bachelor degree holders and large numbers of student not completing college, it is clear that higher education administrators should evaluate potential causes of premature departure from college.

The most obvious and commonly known reason students do not finish college is a lack of funds to pay for their degree. According to the PELL Institute (2008), students who identified as, "low income and first generation" were 25% more likely to leave college within or after the first year than students who identified otherwise. According to Austin Peay's DSIR retention report (2013-2018), students who were Pell eligible had a lower retention rate than those students who were not Pell eligible.

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For mental health purposes, Beiter *et al* (2014) conducted a survey testing the overall depression, stress, and anxiety and to what specific college-factors those emotions correlated of their already-enrolled students. They found that depression, stress, and anxiety were most greatly correlated with, "academic performance, pressure to succeed, post-graduation plans, financial concerns, quality of sleep, relationships with friends, relationships with family, overall health, body image and self-esteem" out of the 19 measured factors (p. 93). When testing specific demographic groups that felt the most depression, stress, and anxiety, students who did not live on campus, transfer students, and upper classmen reported higher levels.

Being aware of this problem, researchers from Wayne State University created a "survival analysis framework for early prediction" of students who are more likely to leave college without a degree (Ameri et al, 2016). Their model was not only able to predict what students were at risk for dropping out and why, but also when they are most likely to drop out down to the semester.

From 2000 to 2009, researchers studied student retention and determined that their model predicted at-risk students and when they were more likely to drop out with notable accuracy. With this information, they began preventative programs targeting students at the time they were most likely to drop out as indicated by their model (Ameri et al, 2016).

Muraskin (1997) offers several points to improve student retention. He refers to them as his "best practices" and include:

- **Provide a stable first year.** Students need help transitioning into college life. Structured first years are characterized by heavy instructor involvement, specifically when choosing what classes students will take and how to register.
- **Stress the presence of academic support:** Incoming students will not naturally be aware to all of the academic help that is available to them. The transition from high school to college is stressful enough without poor academic performance. Academic support programs that encourage "interactive approaches to learning" seem to work best for college students.

- **Ensure Advisors are active:** Advisors should be meeting with those students they advise multiple times through the semester and be tracking their academic performance.

One program APSU implemented to improve student retention was APSU 1000. All freshmen coming to APSU are required to enroll in APSU 1000, a one credit hour class. This class is designed to connect a group of students with a professor and an upper classman peer mentor and introduce them to campus life and college studies.

The curriculum includes topics of study tips, navigating library databases and web self-service, as well as support that is available on campus. According to Ameri *et al* (2016), freshmen are more likely than any other class of students to drop out from college. Therefore, APSU 1000 is specifically targeted at incoming freshmen and assisting them as they transition from high school senior to college student.

Clearly students leave college for various reasons. One student may not have enough money to finish their degree. One student may feel unable to handle the academic rigor of college, while another student may have a family emergency that demands attention. If increasing student retention is a central objective for universities (Ameri *et al*, 2016), then they must make it their business to know why their students are leaving prematurely.

The purpose of this study was to test the incoming freshmen cohort on potential factors in their life that might cause them to be apprehensive about coming to college. A short survey was administered during freshmen registration. Later, demographic information of the sample was collected to attempt to find patterns in demographic groups and apprehension.

It is thought that apprehension and stressful factors in students' lives may cause them to leave APSU before graduating. Therefore, these students were surveyed to identify what factors or demographic groups are more likely to be at-risk for dropping out.

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METHODOLOGY

The survey used for this study was created by Dr. David Denton, professor within the department of Leadership and Organizational Administration. Once the survey had been evaluated and finalized, it included 16 items. These items measured apprehension about future academic performance, family and friends support, financial obstacles, and whether their course load matched their interests. To answer these questions, participants had seven options ranging from “strongly disagree” to “strongly agree”.

One item asked the participants for their university identification number in order to cross-reference the questionnaire data with the student data system within the DSIR office to perform computations by demographic and other variables. To perform both the descriptive and inferential calculations, SAS 9.4 was used.

Data used in the statistical analysis were survey responses from 1,442 incoming freshmen at APSU. Responses were originally collected from 1,749 participants; however, 307 participants' data were excluded because they either did not complete more than half of the survey or they entered an invalid university identification number. Ages ranged from 16-61. Approximately 61.72% of the sample was female and 38.28% of the sample was male.

Surveys were administered at the freshmen Registration, Orientation and Welcome (ROW) event while incoming freshmen registered for their classes for the fall semester of 2019. As students were working on a university computer in the APSU Web Self-Service to enroll in their classes, the survey was presented to them. Students had the option to consent and proceed with the survey or decline the opportunity to take the survey without being penalized for doing so. ROW started in the end of May 2019 and finished in August 2019.

After all survey response were gathered, DSIR used the students' university identification numbers in order to merge the survey file with a student data file that contained their demographic information. The information selected from the participants' records included:

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- Gender
- Age
- Ethnicity
- Whether they are a first generation college student
- High School grade point average (GPA)
- Pell eligibility
- Whether or not they had transferred from another university

These demographic variables were chosen because DSIR believed, as indicated by the literature, that these could be demographic factors that could help to explain why a student is apprehensive about coming to college.

To begin the statistical analysis, frequency distributions of each of the demographic variables were computed. Age was transformed into four groupings: younger than 18, 18-20, 21-24 and older than 25. Ethnicity was also abridged into three subcategories: Caucasian, African American, and Other because smaller numbers of students in certain ethnic categories would make the statistical tests less powerful. Other demographic variables were not transformed.

The objective of running frequency distributions is to visually review the data. Grouping responses into meaningful categories gives the researcher a better picture of the participants within the survey and to observe whether or not there are enough participants representing each demographic group for statistical power during computations. For example, there were only three respondents from students whose military status was “reserve”. In this example, three people do not create a large enough sample to have statistical power. Combining demographic responses into subcategories then allows a designated sample to be significant for the purpose of the computations.

Running Specific Frequency Distributions and T-tests

Based on the evidence found in the literature, DSIR was particularly interested in the effects of Pell eligibility and first generation status on college apprehension. It was hypothesized that the responses of students who were eligible for the Pell Grant would indicate more apprehension than students who were not eligible. A similar postulate was made for students who were

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first generation college students. It was expected that the responses of first generation student would imply that they were more apprehensive about coming to college than those who were not.

According to the preliminary frequency distributions, 48.13% of the sample was Pell eligible and 51.87% of the sample was not Pell eligible. Approximately 25.52% of the sample did identify as first generation college students and 74.48% of the sample did not.

For the initial analyses, a frequency distribution of the survey responses was run breaking down Pell eligible verses not Pell eligible by gender and then the same for first generation status for each survey question. The objective of running a frequency distribution for each question was to get a picture of the raw data and observe overall patterns before running further statistical tests.

Observations of which demographic group responded more apprehensively to the survey could have been made based off of these frequency distributions. However, observations based upon descriptive data will not be as strong or valid as inferential analysis. Therefore, to test whether the two groups significantly differed, two sample t-tests of the responses for each survey question were performed.

The two-sample t-test is one of the most commonly used inferential tool used in education work. It is applied to compare whether the average difference between two independent groups is really significant or if it is due instead to random chance. It is mostly used when the data sets would follow a normal distribution and may have unknown variances. A t-test is used as a hypothesis testing tool, which allows testing of an assumption applicable to a population. It helps to answer questions like whether the average success rate is higher in one group over another or whether students who use library resources are more likely to stay in school over students who do not.

The two-sample t-test is used when one nominal variable and one measurement variable is present, and the desire is to compare the mean values of the measurement variable. The nominal variable must have only two values, such as "male" and "female" or "treated" and "untreated." For the purpose of

the t-test, the statistical null hypothesis is that the means of the measurement variable are equal for the two categories.

The t-test is explained in the following formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

The test statistic, t_s , is calculated using a formula that has the difference between the means in the numerator; this makes t_s get larger as the means get further apart. The denominator is the standard error of the difference in the means, which gets smaller as the sample variances decrease or the sample sizes increase. Thus t_s gets larger as the means get farther apart, the variances get smaller, or the sample sizes increase.

Mathematically, the t-test takes a sample from each of the two sets and establishes the problem statement by assuming a null hypothesis that the two means are equal. Based on the applicable formulas, certain values are calculated and compared against the standard values, and the assumed null hypothesis is accepted or rejected accordingly.

If the null hypothesis qualifies to be rejected, it indicates that data readings are strong and are not by chance. The t-test is just one of many tests used for this purpose. The probability of getting the observed t_s value under the null hypothesis can be calculated using the t-distribution. The shape of the t-distribution and, therefore, the probability of getting a particular t_s value, depends on the number of degrees of freedom. The degrees of freedom for a t-test is the total number of observations in the groups minus 2, or n_1+n_2-2 .

For the purpose of this study, two separate sets of t-tests were run. One set tested the effect of Pell eligibility. For these t-tests, the two samples were Pell eligible students and non-Pell eligible students. The other set of t-tests were run to observe the effect of first generation status on apprehension towards college. For these t-tests, the two samples were students who identified as first generation students and those who identified as not first generation students.

Using the null hypothesis to postulate that there will be no significant difference between the two groups within both sets of data, analysis from the t-test procedure will aid the researcher to determine if the null should be rejected (significance) or accepted (non-significance).

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Regression Analysis

A basic multiple regression model suggests the continuous variable of college apprehension is dependent on a number of explanatory variables, such as money issues, family support, and academic preparedness. This relationship can be expressed mathematically as:

$$y = a + b_1x_1 + b_2x_2 + \dots + b_nx_n + e$$

where a is a numerical constant representing average apprehension score if all other explanatory factors are 0. The b 's are the regression coefficients that represent the size of the relationship between the dependent variable y with the corresponding explanatory variables x_i where $i = 1, 2, \dots, n$ as the amount average apprehension score changes with a one-unit increase in x when all other variables are controlled. A positive or negative sign on the b coefficient indicates whether the apprehension score will increase or decrease with an increase in the corresponding x . The residual error, e , is the random factor that captures every influence on the apprehension score that has not been controlled for in the model (i.e. random chance or a hard to quantify characteristic such as dedication). Residual error is defined to be deviations of observations from their expected values as predicted by the model; here, the error term is predicted apprehension score minus actual, observed apprehension score.

The a and b 's from the above mathematical equation are estimated based on data collected from the freshmen being analyzed, and these coefficients are used to generate a regression line that represents the minimum average of the squared errors. The most frequently used measure of how good a fit the regression line is to observed salaries is the minimum sum of squared residuals, or the coefficients that minimize the sum of squared errors.

The measure of how accurate the regression model is in predicting apprehension scores of freshmen included in the analysis is the coefficient of determination, or R-square. This statistic is the proportion of the variance in salary that is explained collectively by the variance of the explanatory variables included in the regression model. R-squared ranges from 0 percent, indicating no linear relationship exists between the explanatory variables and salary, to 100 percent, signifying salary can be predicted perfectly by the explanatory variables in the model. Hence, the higher

the R-square value, the more accurate the regression model because the size of the average errors, or the squared difference between actual and predicted values, is minimized. Due to the nature of R-square, adding additional explanatory variables to a regression model will produce a higher value regardless of whether these additional variables generate a more accurate predictive model. This increased value is due to the chance relations between the additional variables and the unexplained variance. Therefore, R-square is typically adjusted to account for the number of explanatory variables and the number of observations being analyzed.

In the case of this study, the predictor variable is apprehension towards college. On the surface, the whole survey that was administered measured apprehension towards college; however, some questions measure apprehension specifically about money whether or not respondents have family support.

Because different survey items seemed to measure specific apprehensions about college, instead of making the predictor variable the total apprehension score from the entire survey, DSIR grouped together specific questions that measured apprehension towards college performance. For the purposes of this study, a regression model was run to see what specific variables statistically affect apprehension concerning academic performance in college.

The performance subscale or grouping that became the predictor variable for the regression was the grouped mean score of five of the sixteen survey items. The questions asked participants to rate themselves on a scale from 1 (strongly disagree) to 7 (strongly agree) on how they perceived they would succeed academically at APSU or how important academic success was to them. Specifically, the five questions used for this subscale were:

- *Question 2* - Doing well at APSU is a top priority for me.
- *Question 3* - I'm confident that I will make good grades during my first semester of classes.
- *Question 6* - I have the talent necessary to complete the first semester of classes.
- *Question 11* - My course schedule will make it possible for me to make good grades this fall.
- *Question 13* - Getting off to a good start at APSU is more important than anything in my life right now.

A Cronbach's alpha test was run on the five "performance" items. The test score of .67 indicates a high level of relationship between each question within the subscale.

Further subscales were created from the remaining survey items. Two questions that asked students to rate themselves on how apprehensive they felt about whether or not their family supported them made up the "family support" subscale. The "money" subscale made of two questions tested how apprehensive students felt about being able to pay for their education and related materials (e.g. textbooks). Similar to the family scale, a "friends" subscale was created from two questions that measured apprehension about the support from friends. The final subscale, the "Interests" subscale, was composed of three questions that measured how apprehensive students were concerning how well their classes matched their interests.

Cronbach's alpha analyses were run for each of the subscales. These tests revealed that the items divided into each subscale were related to each other and, therefore, validated the subscales.

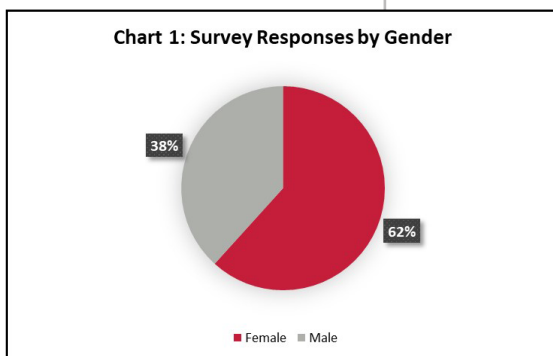
As previously stated, the performance subscale was designated to serve as a predictor variable. The other subscales were chosen to be potential influencer variables in the regression test. A single question, asking whether or not APSU was students' first choice for college, was also included as an influencer variable. Demographic traits that were used as influencer variables in the regression test include high school GPA, Pell eligibility and first generation status.

Using these eight possible influencer variables, a full regression test was run. After analyzing the results of the full regression, those influencer variables that were not statistically significant were removed to create the selected or final regression model.

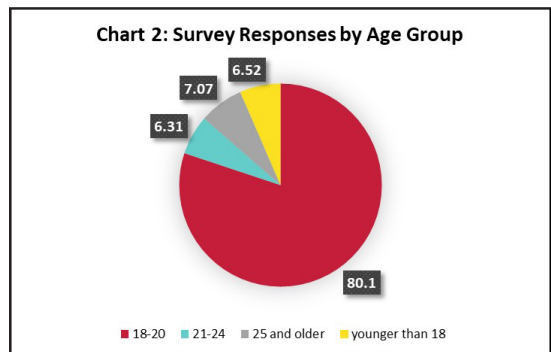
RESULTS

Data used in the statistical analysis came from the 1,442 incoming freshmen at APSU who completed the survey during the summery orientation period, who included a valid student number, and who actually attended APSU during the fall semester. Data from the survey was then merged with demographic data from the

The initial frequency distributions computed on the respondents' demographic information indicated a sample that is close to the overall entering freshman class. As seen in **Chart 1**, 62% of the respondents were female and 38% were male. Within the overall freshman cohort, 60% are female and 40% are male.



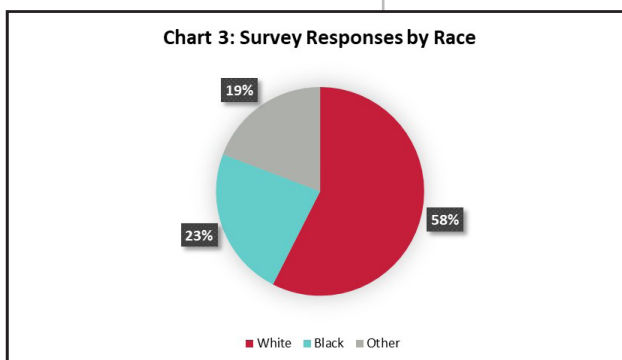
According to **Chart 2**, the majority of respondents were between the ages of 18-20. This result is not surprising because



the majority of APSU's freshmen are traditional. Furthermore, there is a fairly even split who are younger than 18, 21-24, and over 24 years of age. Again, the age breakdown of respondents is very

close to the fall 2019 freshman class.

A breakdown by race reveals that 58% of the respondents were White, 23% were Black/African America, and 19% were of other races/ethnicities. This is close to the overall freshmen class where 57% are White and 23% are Black/African American. Furthermore, 75% of respondents were first-generation students as compared to 74% the freshmen class identified as first-generation. A total of 48% of respondents received Pell as compared to 44% of student from the



freshman class. Therefore, it is clear that no significant difference existed between respondents and the entering freshmen class in key demographic variables.

Survey Summary

For each question in the survey various descriptive statistics were computed for total respondents as well as by Pell and first generation groupings. These statistics can be found in the **Appendix** at the end of this report. Specifically, the following statistics were computed:

- N - The number of respondents who answered the question
- Mean - The arithmetic average of respondents' scores
- Min - The lowest score answered by respondents
- Max - The highest score answered by respondents
- STD - The standard deviation (spread around the mean) of the scores

Since the scale of the survey ranged from 1 (strongly disagree) to 7 (strongly agree), the midpoint of the scale is 3.5. In general, any mean score below the midpoint denoted that respondents were generally disagreeable to the question. Likewise, average scores that fell above the midpoint denoted that respondents were generally agreeable to the question. Since standard deviation is the measure of how close the scores are to the mean, a higher STD denotes high variability with scores spread further from the mean. High STD scores also indicate the possibility of skewness where a few low or high scores can alter the overall average. A lower STD denotes that scores were generally close to the mean.

As previously discussed, the frequency distribution of survey responses that were run on Pell eligibility and first generation status by gender for each question allowed researchers to see general trends in the raw data. For these frequency distributions, students were divided by gender within Pell eligibility as well as gender within first generation status for separate frequency distributions.

Overall, students' responses categorized into Pell eligible and not Pell eligible by gender for each question were somewhat consistent. The descriptive data show that the majority of both Pell eligible and not Pell eligible males and females answered "agree" or "strongly agree" to the majority of the survey ques-

tions. Even though most responses were consistent with each other, there were some differences. These variations in responses are:

- The majority of females who are Pell eligible answered strongly disagree to the question, "Money is not a source of stress in my life." All other groups, tended to answer neutral to this question.
- The majority of males who were Pell eligible answered somewhat agree to the question, "Many of the people I know from high school are also attending APSU." However, the other respondents tended to answer strongly disagree.

T-tests

In addition to the frequency distributions used to measure various descriptive statistics, the t-test was computed on each question using both Pell eligibility and first generation classifiers. These t-tests allowed DSIR to compare mean responses and conclude if groups of students were significantly more apprehensive about attending college than other groups. Although the response means for each group will more than likely always differ in some way, the t-test was used to determine if those differences were significant. If the t-test indicates no significant difference, it can be established that no real difference existed between the two groups. Therefore, while t-tests were computed on each question by first-generation and Pell student groups, only those tests that generated significant differences will be discussed in this paper.

Statistical significance is measured by the p-value that is computed by the t-test procedure. The p-value is the probability that the change in a dependent value is due to chance, as opposed to the change in the independent variable.

The first set of t-tests run in this study were to determine if the mean responses of Pell-eligible students were significantly different than those students who were not.

H₀1: There is no significant difference between responses to the question "I'm confident that I will make good grades in my first semester in class" and Pell-eligibility status. This significance was tested using a two-tailed t-test at the .05 level of significance.

For this test, the mean response for Pell recipients was 6.19 while the mean response for non Pell students was 6.06. The

Satterthwaite test for unequal n's was used since it was determined that there was about a 7% difference in the number

Figure 1 - Q3: I'm confident that I will make good grades in my first semester in class

PELL	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
No Pell		692	6.0665	0.9616	0.0366	1	7
Pell		745	6.196	0.8546	0.0313	1	7
Diff (1-2)	Pooled		-0.1295	0.9077	0.0479		
Diff (1-2)	Satterthwaite		-0.1295		0.0481		
Method	Variances	DF	t Value	Pr > t			
Pooled	Equal	1435	-2.7	0.007			
Satterthwaite	Unequal	1384.7	-2.69	0.0072			

of respondents between the two groups. According the **Figure 1**, it was determined that the null hypothesis should be rejected and that Pell students scored significantly higher than non Pell students regarding their confidence in making good grades during the first semester.

H₀2: There is no significant difference between responses to the question "Money is not a source of stress in my life" and Pell-eligibility status. This significance was tested using a two-tailed t-test at the .05 level of significance.

For this test, the mean response for Pell recipients was 3.25 while the mean

response for non Pell students was 3.78. The Satterthwaite test for unequal n's was used since

Figure 2 - Q7: Money is not a source of stress in my life

PELL	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
No Pell		694	3.7824	1.7867	0.0678	1	7
Pell		746	3.2574	1.6974	0.0621	1	7
Diff (1-2)	Pooled		0.525	1.741	0.0918		
Diff (1-2)	Satterthwaite		0.525		0.092		
Method	Variances	DF	t Value	Pr > t			
Pooled	Equal	1438	5.72	<.0001			
Satterthwaite	Unequal	1416.4	5.71	<.0001			

it was determined that there was about a 7% difference in the number of respondents between the two groups. According the **Figure 2**, it was determined that the null hypothesis should be rejected and that Pell students scored significantly lower than non Pell students regarding their confidence that money would not be a stressor.

H₀3: There is no significant difference between responses to the question "I am confident that I will be able to afford to purchase the books and supplies necessary" and Pell-eligibility status. This significance was tested using a two-tailed t-test at the .05 level of significance.

For this test, the mean response for Pell recipients was 4.99 while the mean response for non Pell students was 5.41. The

Satterthwaite test for unequal n's was used since it was determined that there was about a 7% dif-

Figure 3 - Q12: I am confident that I will be able to afford to purchase the books and supplies necessary

PELL	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
No Pell		690	5.4116	1.328	0.0506	1	7
Pell		748	4.9866	1.4217	0.052	1	7
Diff (1-2)	Pooled		0.425	1.3775	0.0727		
Diff (1-2)	Satterthwaite		0.425		0.0725		
Method	Variances	DF	t Value	Pr > t			
Pooled	Equal		1436	5.84	<.0001		
Satterthwaite	Unequal		1435.8	5.86	<.0001		

ference in the number of respondents between the two groups. According the **Figure 3**, it was determined that the null hypothesis should be rejected and that Pell students scored significantly lower than non Pell students regarding their confidence that they would be able to purchase the needed books and supplies.

H₀4: There is no significant difference between responses to the question "I am really looking forward to being a student at Austin Peay" and Pell-eligibility status. This significance was tested using a two-tailed t-test at the .05 level of significance.

For this test, the mean response for Pell recipients was 6.43 while the mean response for non Pell students was 6.30. The

Satterthwaite test for unequal n's was used since it was determined that there was about a 7% dif-

Figure 4 - Q16: I am really looking forward to being a student at Austin Peay

PELL	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
No Pell		694	6.3098	0.9183	0.0349	1	7
Pell		747	6.4324	0.8082	0.0296	1	7
Diff (1-2)	Pooled		-0.1226	0.863	0.0455		
Diff (1-2)	Satterthwaite		-0.1226		0.0457		
Method	Variances	DF	t Value	Pr > t			
Pooled	Equal		1439	-2.69	0.0071		
Satterthwaite	Unequal		1383.7	-2.86	0.0074		

ference in the number of respondents between the two groups. According the **Figure 4**, it was determined that the null hypothesis should be rejected and that Pell students scored significantly higher than non Pell students regarding their excitement of being an APSU student.

The second set of t-tests run in this study were to determine if the mean responses of first-generation students were significantly different than those students who were not.

H₀5: There is no significant difference between responses to the question "I have the talent necessary to successfully complete my first semester of classes" and first-generation status. This significance was tested using a two-tailed t-test at the .05 level of significance.

For this test, the mean response for first-generation students was 6.24 while the mean response for non Pell students was 6.36. The Satterthwaite test for unequal n's was used

Figure 5 - Q6: I have the talent necessary to successfully complete my first semester of classes

FIRST GEN	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
No		1071	6.3576	0.8722	0.0267	1	7
Yes		367	6.2398	0.9246	0.0483	1	7
Diff (1-2)	Pooled		0.1178	0.8859	0.0536		
Diff (1-2)	Satterthwaite		0.1178		0.0551		
Method	Variances	DF	t Value	Pr > t			
Pooled	Equal	1436	2.2	0.028			
Satterthwaite	Unequal	604.04	2.14	0.033			

since it was determined that there was a significant difference in the number of respondents between the two groups. According to the **Figure 5**, it was determined that the null hypothesis should be rejected and that first-generation students scored significantly lower than non first-generation students regarding their ability to complete the first semester.

H₀6: There is no significant difference between responses to the question "Money is not a source of stress in my life" and first-generation status. This significance was tested using a two-tailed t-test at the .05 level of significance.

For this test, the mean response for first-generation students was 3.30 while the mean response for non Pell students was 3.58. The Satterthwaite test for unequal n's was used since it was determined that there was a significant difference in the

Figure 6 - Q7: Money is not a source of stress in my life

FIRST GEN	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
No		1072	3.583	1.7528	0.0535	1	7
Yes		368	3.2989	1.7666	0.0921	1	7
Diff (1-2)	Pooled		0.2841	1.7563	0.1061		
Diff (1-2)	Satterthwaite		0.2841		0.1065		
Method	Variances	DF	t Value	Pr > t			
Pooled	Equal	1438	2.68	0.0075			
Satterthwaite	Unequal	632.29	2.67	0.0078			

number of respondents between the two groups. According to the **Figure 6**, it was determined that the null hypothesis should be rejected and that first-generation students scored significantly lower than non first-generation students regarding money and stress.

H₀7: There is no significant difference between responses to the question "I am confident that I will be able to afford to purchase the books and supplies necessary" and first-generation status. This significance was tested using a two-tailed t-test at the .05 level of significance.

For this test, the mean response for first-generation students was 5.06 while the mean response for non Pell students was 5.23. The Satterthwaite test

for unequal n's was used since it was determined that there was a significant dif-

ference in the number of respondents between the two groups. According the **Figure 7**, it was determined that the null hypothesis should be rejected and that first-generation students scored significantly lower than non first-generation students regarding their confidence that they would be able to purchase the needed books and supplies.

H₀8: There is no significant difference between responses to the question "Many of my friends from high school are also going to college" and first-generation status. This significance was tested using a two-tailed t-test at the .05 level of significance.

For this test, the mean response for first-generation students was 5.29 while the mean response for non Pell students was 5.51. The Satterthwaite test

for unequal n's was used since it was determined that there was a significant dif-

ference in the number of respondents between the two groups. According the **Figure 8**, it was determined that the null hypothesis should be rejected and that first-generation students scored significantly lower than non first-generation students regarding their belief that many of their friends are attending college.

Figure 7 - Q12: I am confident that I will be able to afford to purchase the books and supplies necessary

FIRST GEN	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
No		1071	5.2353	1.4032	0.0429	1	7
Yes		367	5.0599	1.3577	0.0709	1	7
Diff (1-2)	Pooled		0.1753	1.3917	0.0842		
Diff (1-2)	Satterthwaite		0.1753		0.0828		
Method	Variances	DF	t Value	Pr > t			
Pooled	Equal	1436	2.08	0.0374			
Satterthwaite	Unequal	653.02	2.12	0.0346			

Figure 8 - Q14: Many of my friends from high school are also going to college

FIRST GEN	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
No		1074	5.5149	1.6275	0.0497	1	7
Yes		368	5.2853	1.6777	0.0875	1	7
Diff (1-2)	Pooled		0.2296	1.6405	0.0991		
Diff (1-2)	Satterthwaite		0.2296		0.1006		
Method	Variances	DF	t Value	Pr > t			
Pooled	Equal	1440	2.32	0.0207			
Satterthwaite	Unequal	619.79	2.28	0.0288			

Both Pell eligible students and first generation college students indicated that they are apprehensive about their finances. As stated in the literature, these students are already at risk for dropping out, and their responses indicate the same thing. These results should be taken into consideration by university administration.

Regression Analysis

For the regression analysis, the predictor variable used consisted of the performance subscale previously mentioned. The independent variables used were high school GPA, Pell eligibility, first generation status, as well as the survey responses to the money, interest, family, friends subscales and survey question five, "Austin Peay was my first choice when considering colleges to attend".

H₀9: There is no significant relationship between the performance subscale score and any of the independent measures used. This significance was tested using a multiple regression test at the .05 level of significance.

To first test this hypothesis, all of the variables were loaded into the model.

As shown in **Figure 9**, the F Value of 110 indicates a significant relationship between the performance subscale and at least one of the independent variables. Furthermore, the R-Square value of .3810 indicates that 38 percent

Figure 9 - Regression Model On Performance Subscale - Full Model

Source	DF	Sum of Squares	Mean Squares	F Value	Pr > F
Model	8	229.72155	28.71519	110	<.0001
Error	1430	373.28759	0.26104		
Corrected Total	1438	603.00915			

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	2.9843	0.11275	26.47	<.0001
FRIENDS		1	0.01436	0.00892	1.61	0.1076
FAMILY		1	0.08993	0.01205	7.47	<.0001
MONEY		1	0.04891	0.0102	4.8	<.0001
INTEREST		1	0.39685	0.01765	22.49	<.0001
Q5	Q5	1	0.00334	0.00808	0.41	0.6793
PELL		1	0.04797	0.0276	1.74	0.0824
FIRST GEN		1	-0.03643	0.0312	-1.17	0.2432
High School GPA	HS_GPA	1	0.000022257	0.0002842	0.78	0.4337

change in the performance subscale can be attributed to change in at least one of the independent variables. Looking at the t Values of each independent variable, it is clear that some are significant to the model and some are not. According to Figure 9, the Family subscale, Money subscale, and Interest subscale and the only significant variables at the .05 level.

Therefore, in the development of the final model, only these variables will be used.

As shown in the final model in **Figure 10**, the F Value is significantly higher than the full model, indicating a stronger model.

The R-Square value also increased one percentage point, indicating that the model was slightly more practically significant than the full model.

Within the parameter estimates, all of the values are positive, indicating that as the scores of each of the independent subscales increase, the performance subscale will also increase.

These results imply that a student's perception of their family's support, financial situation and how well their class load fits their interests are significantly related to their level of apprehension in coming into college.

Figure 10 - Regression Model on Performance Subscale - Final Model

Source	DF	Sum of Squares	Mean Squares	F Value	Pr > F
Model	3	240.37067	80.12356	303.09	<.0001
Error	1438	380.14184	0.26435		
Corrected Total	1441	620.51251			

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	2.9976	0.1065	28.15	<.0001
FAMILY		1	0.09533	0.01187	8.03	<.0001
MONEY		1	0.04834	0.01	4.84	<.0001
INTEREST		1	0.4066	0.01736	23.42	<.0001

CONCLUSIONS

Most of the results of this study were not surprising. While the average scores for both the Pell recipients and non-Pell recipients were generally high, the Pell recipients believed to a greater extent over the non-Pell recipients that they would make good grades during their first year. Likewise, the Pell recipients believed that money was not as much of a stressor in life as did the non-Pell recipients. However, the Pell recipients were more apprehensive about being able to purchase books and supplies that were needed during the semester.

Students from the non-first generation group believed to a greater extent that they had the talent necessary to complete the first semester of college than did the first generation students. However, while both group scores were low, the first generation students believed to a greater extent over the non-first generation students that money was not a stressor in their lives. Furthermore, the non-first generation group believed to a greater extent over the first generation students that they would be able to purchase the books and supplies necessary. Moreover, the non-first generation students believed to a greater extent that more of their friends would be attending college.

A surprising result came when running the full regression model. According to the findings, high school GPA had no significant effect on apprehension towards college academic performance. In other words, a student's high school performance had little bearing on how the student believed he/she would do in college. Furthermore, there was no significant correlation between high school GPA and responses to the individual survey items, supporting the regression's findings.

This finding is of interest because, according to the literature, high school GPA is the greatest predictor of academic performance in college (Rudick, 2015). However, college freshmen, from the APSU 2019 freshmen cohort, seemingly were not taking into consideration how they performed in high school when thinking about how they would perform in college.

According to the study conducted by Beiter and colleagues (2014), the mental health of college students can have a significant impact on their academic performance. They concluded

"According to the findings, high school GPA had no significant effect on apprehension towards college academic performance."

that it is imperative for universities to regularly (e.g. every year or semester) monitor the mental health of its students. One way this could be done is for APSU to replicate their study through DSIR.

However, researchers also suggested that universities promote and encourage students to seek help from mental health services that are offered on campus. APSU has a wide array of organizations that offer mental health services to students. These services are offered by Student Counseling Services. The Graduate Counseling Program through the Department of Psychological Sciences also provides counseling to students. APSU should continue to promote these organizations often to the student body and measure how these services are utilized by the student body.

Student Attitudes About Attending College, Fall 2019

Appendix

STUDENT ATTITUDE SURVEY SUMMARY															
No.	Question	Group	N	Mean	Min	Max	STD	No.	Question	Group	N	Mean	Min	Max	STD
2	DOING WELL AT APSU IS TOP PRIORITY FOR ME	Total	1,438	6.71	1	7	0.93	10	I'M SATISFIED THAT THE CLASSES I'M TAKING THIS SEMESTER ARE THE RIGHT ONES FOR ME	Total	1,436	5.80	1	7	1.08
		Pell	745	6.75	1	7	0.82			Pell	743	5.84	1	7	1.09
		No Pell	693	6.67	1	7	1.03			No Pell	693	5.77	1	7	1.07
		First Gen	368	6.73	1	7	0.90			First Gen	367	5.86	3	7	1.02
		Non-First Gen	1,070	6.70	1	7	0.94			Non-First Gen	1,069	5.78	1	7	1.10
		Total	1,437	6.13	1	7	0.91	Total	1,438	5.89	1	7	0.97		
3	I'M CONFIDENT THAT I WILL MAKE GOOD GRADES DURING MY FIRST SEMESTER OF CLASSES	Pell	745	6.20	1	7	0.85	11	MY COURSE SCHEDULE WILL MAKE IT POSSIBLE FOR ME TO MAKE GOOD GRADES THIS FALL	Pell	746	5.91	1	7	0.99
		No Pell	692	6.07	1	7	0.96			No Pell	692	5.88	1	7	0.96
		First Gen	366	6.07	1	7	0.91			First Gen	368	5.95	1	7	0.98
		Non-First Gen	1,071	6.16	1	7	0.91			Non-First Gen	1,070	5.88	1	7	0.97
		Total	1,437	6.05	1	7	1.22	Total	1,438	5.19	1	7	1.40		
4	MY FAMILY AND FRIENDS ARE EXPECTING ME TO STAY AT APSU UNTIL MY STUDIES ARE COMPLETED	Pell	746	6.01	1	7	1.18	12	I'M CONFIDENT THAT I WILL BE ABLE TO AFFORD TO PURCHASE THE BOOKS AND SUPPLIES NECESSARY FOR MY CLASSES	Pell	748	4.99	1	7	1.42
		No Pell	691	5.98	1	7	1.26			No Pell	690	5.41	1	7	1.33
		First Gen	365	6.12	1	7	1.22			First Gen	367	5.06	1	7	1.36
		Non-First Gen	1,072	6.02	1	7	1.22			Non-First Gen	1,071	5.24	1	7	1.40
		Total	1,439	5.05	1	7	1.75	Total	1,442	5.86	1	7	1.14		
5	APSU WAS MY FIRST CHOICE WHEN CONSIDERING COLLEGES TO ATTEND	Pell	745	5.06	1	7	1.75	13	GETTING OFF TO A GOOD START AT APSU IS MORE IMPORTANT THAT ANYTHING IN MY LIFE RIGHT NOW	Pell	748	5.88	1	7	1.13
		No Pell	7	5.03	1	7	1.76			No Pell	694	5.85	1	7	1.16
		First Gen	367	5.19	1	7	1.68			First Gen	368	5.90	1	7	1.09
		Non-First Gen	1,072	4.99	1	7	1.78			Non-First Gen	1,074	5.85	1	7	1.16
		Total	1,438	6.33	1	7	0.89	Total	1,442	5.46	1	7	1.64		
6	I HAVE TALENT NECESSARY TO COMPLETE THE FIRST SEMESTER OF CLASSES	Pell	746	6.33	1	7	0.90	14	MANY OF MY FRIENDS FROM HIGH SCHOOL ARE ALSO GOING TO COLLEGE	Pell	748	5.43	1	7	1.60
		No Pell	692	6.33	1	7	0.87			No Pell	694	5.48	1	7	1.69
		First Gen	367	6.24	1	7	0.92			First Gen	368	5.29	1	7	1.68
		Non-First Gen	1,071	6.36	1	7	0.87			Non-First Gen	1,074	5.51	1	7	1.63
		Total	1,440	3.51	1	7	1.76	Total	1,441	3.90	1	7	2.03		
7	MONEY IS NOT A SOURCE OF STRESS IN MY LIFE	Pell	746	3.26	1	7	1.70	15	MANY OF THE PEOPLE I KNOW FROM HIGH SCHOOL ARE ALSO ATTENDING APSU	Pell	747	3.92	1	7	1.97
		No Pell	694	3.78	1	7	1.79			No Pell	694	3.89	1	7	2.11
		First Gen	368	3.30	1	7	1.77			First Gen	368	3.94	1	7	2.02
		Non-First Gen	1,072	3.58	1	7	1.75			Non-First Gen	1,073	3.89	1	7	2.05
		Total	1,440	5.73	1	7	1.11	Total	1,441	6.37	1	7	0.86		
8	THE COURSES I'M TAKING THIS FALL ARE A GOOD MATCH TO MY INTERESTS	Pell	747	5.73	1	7	1.11	16	I AM REALLY LOOKING FORWARD TO BEING A STUDENT AT APSU	Pell	747	6.43	1	7	0.81
		No Pell	693	5.73	1	7	1.10			No Pell	694	6.31	1	7	92.00
		First Gen	367	5.74	2	7	1.07			First Gen	367	6.44	2	7	0.79
		Non-First Gen	1,073	5.72	1	7	1.13			Non-First Gen	1,074	6.35	1	7	0.89
		Total	1,441	5.38	1	7	1.63	Total	1,441	6.37	1	7	0.86		
9	MOST PEOPLE WHOSE OPINIONS I VALUE WOULD BE DISAPPOINTED IF I LEFT APSU BEFORE EARNING A DEGREE	Pell	748	5.45	1	7	1.56								
		No Pell	693	5.30	1	7	1.70								
		First Gen	368	5.49	1	7	1.58								
		Non-First Gen	1,073	5.34	1	7	1.64								

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