

Grit, Financial Stress, and Academic Success for FGCS

Doris Bennett
Jacksonville State University

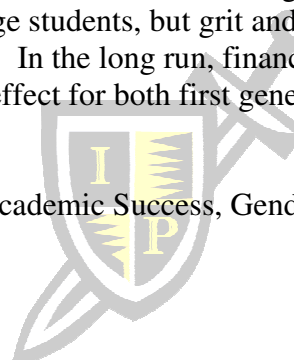
Cynthia McCarty
Jacksonville State University

Shawn Carter
Jacksonville State University

ABSTRACT

A student's academic success depends on many factors, including aptitude, effort, personality traits, and social and financial situations. This analysis examines the impact on academic performance in the short-term and long-term, measured by course grade and grade point average, respectively of grit, ethnicity, gender, financial stress, and being a first-generation college student. Our results indicate that in the short run, grit had a positive impact on the course grade for non-first-generation college students, but grit and hours worked had negative effects for first generation college students. In the long run, financial stress and being an African American had significant negative effect for both first generation and non-first-generation college students.

Keywords: Grit, Financial Stress, Academic Success, Gender, Ethnicity, FGCS



Copyright statement: Authors retain the copyright to the manuscripts published in AABRI journals. Please see the AABRI Copyright Policy at <http://www.aabri.com/copyright.html>

INTRODUCTION

Bennett et al. (2020) found that grit has a positive and significant influence on academic performance. The study found that African American students had significantly more grit than the Caucasian students in the sample. It also found that African American students had significantly lower grades, worked longer hours, planned to study longer, and reported more financial stress. Angela Duckworth (2016) recognized that people have difficulty achieving goals not due to lack of grit, but because of their financial and/or social situation. Recent literature has indicated that being a first-generation college student may have an impact on a student's academic performance. The purpose of this study is to examine the short-run and long-run impacts of grit, financial stress, and being a first-generation college student (FGCS) on academic success.

LITERATURE REVIEW

Duckworth and Quinn (2009) consider grit to be a person's ability to sustain effort and focus on endeavors that require months or longer for completion. They found grit to be a significant contributing factor when added to measures of individual cognitive abilities to predict educational attainment. O'Neal et al. (2016) found that Latina students, documented and undocumented, with higher measures of grit were more likely to overcome various impediments often encountered while seeking higher education. Latina students with higher measures of grit were significantly more likely to overcome financial barriers that often contribute to students not completing their education. Broghammer (2017) studied 544 first year college students and found grit to significantly explain differences in student GPAs. Strayhorn (2014) found that grit did contribute to the academic success of black male students attending predominately white institutions. Some recent studies, however, have found that grit does not significantly affect student academic success. Almeida et al. (2019) completed a study of 156 FGCS upper-level undergraduates and concluded that grit factors, including perseverance of effort and consistency of interest, did not significantly forecast those students' grade point averages. Midkiff et al. (2017) included grit in their study of college success for FGCSs. They found that grit was not a significant contributing factor for student success.

One aspect of this study is to focus on challenges faced by FGCSs and determine if grit and financial stress play a role in predicting their academic success. Skomsvold (2014) found that the percentage of FGCS attending post-secondary schools declined 10.8 percent between 1999 and 2011. Cruze et al. (2005) found that FGCSs are less likely to be successful in college than their non-FGCS peers. Engle and Tinto (2008) found that FGCSs are less likely to experience college success compared to other students whose parents completed college. Celia Baker (2012) found that grades for students whose parents did not attend college were 29 percent lower than grades for non-FGCSs. Baker found that FGCSs lacked knowledge and experience about college life, which contributed to poor planning and time management and goal setting deficiencies.

Studies by Choy (2001), Ishitani (2006), and Stephens et al. (2012) found that FGCSs face various unique challenges to their academic success that other students do not face. Collier and Morgan (2008) concluded that FGCSs don't benefit from the cultural capital that allows other students to more successfully navigate through their academic challenges. Even when academically prepared for student success, this lack of cultural capital negatively impacts their

likelihood for a positive outcome. A study by Pascarella (2004) discovered that FGCSs that participated in extracurricular activities were more likely to experience academic success than similar students not participating in these activities. Their study pointed out that FGCSs are less likely to participate compared to non-FGCSs. Strayhorn (2006) found that FGCSs who are actively involved with student organizations may achieve a higher rate of student success.

Engle and Tinto (2008) found that FGCS are also less likely to receive financial assistance for college expenses from their parents and they are more likely to have family and employment obligations taking time away from their academic responsibilities. Bui (2002) completed a study that focused on third quarter freshman FGCSs at UCLA. Compared to non-FGCSs, these students came from lower socioeconomic backgrounds and were statistically more likely to worry about financial aid for college. Bennett et al. (2015) found that students with financial stress concerning academic costs scored significantly lower in economics classes than students not worried about paying for their college expenses.

Chen and Carroll (2005) found that FGCSs are more likely to work full time jobs while attending school. Engel and Tinto (2008) discovered that students who work up to twenty hours a week have a higher persistence and that can improve student success. However, working beyond twenty hours per week negatively impacts the likelihood that a student will graduate. They showed that FGCSs are less likely to receive financial support from their parents. Due to outside obligations, these students were found to be less likely to participate in class study groups, University support services, or to interact with faculty. Therefore, after six years, only thirty-four percent of low-income FGCSs had graduated from 4-year public schools, compared to sixty-six percent of the more advantaged students.

METHODOLOGY AND EMPIRICAL RESULTS

Jacksonville State University is a regional public university in northeast Alabama. During the academic year 2015-16 when the survey was administered, enrollment was approximately 8300 students, of which eighty-nine percent were undergraduate students and eleven percent were graduate students. Forty-two percent of the students were male, and fifty-eight percent were female. Approximately 22% were African American and approximately 71% were Caucasian. The average ACT score was 23.1, and tuition was \$9300 per year. Almost 85% of first time, full time undergraduates received federal, state, or institutional financial aid, with just under 40% receiving Pell Grants. One thousand ten students were enrolled in the School of Business and Industry, one of six schools at JSU.

The sample for this study consisted of 419 undergraduate students in the School of Business and Industry who were enrolled in principles of microeconomics, principles of macroeconomics, intermediate microeconomics, intermediate macroeconomics, or managerial economics during the 2015-16 academic year. At the beginning of each semester, the students answered the seventeen item Grit Scale and completed a survey asking many questions, including how many hours per week they worked at outside employment, whether either or both of their parents had attended college, and their level of financial stress. The students' gender, ethnicity, ACT score, and grade point average (GPA) in JSU courses were obtained from JSU student records. The three instructors provided the students, final average in the course, which was used as a measure of short-run academic performance.

Table 1 summarizes the characteristics of the 419 students in the sample. Approximately 48% of the students were women, and 52% were men. African Americans accounted for 16.6% of the sample, while 83.4% were Caucasian. Approximately 59% of the students were employed. Of those employed, 30.9% of them worked less than 20 hours per week, while 69.1% of the employed students worked more than 20 hours per week. Almost 18% of the students were FGCSs. The average grade earned in the economics course in which the student was enrolled was 81.1%. The average grade for the 269 students in principles was 80.3%, while the average of the 150 students in upper-level courses, intermediate micro and macro and managerial economics, was 82.4%. The average grades for students of the three instructors participating, 80.4%, 81.6%, and 82.3%, were not significantly different. The average ACT score was 23, and the average GPA was 3.19. The average score on the grit scale from 1 to 5, GRIT, was 3.66. Consistency of interest (CI), perseverance of effort (PE), and ambition are three components of grit, scored on a scale of 1 to 5, with 5 indicating the strongest level of agreement. PE was measured on a scale of 1 to 5, with 5 indicating the strongest level of agreement to items such as "I finish whatever I begin." CI was also scored on a scale of 1 to 5 and measured based on responses to six items, such as "I become interested in new pursuits every 6 months." Ambition was measured by responses to questions such as, "I aim to be the best in the world at what I do." The average CI was 3.11; PE, 4.14; and ambition, 4.32. Students planned to study an average of 4.1 hours per week for their economics course. The average financial stress level was 2.14 on a scale of 1 (no stress) to 4 (considerable stress) based on answering with either very often (4), often (3), sometimes (2) never (1) to the following questions: "in the last year, how often have you worried about not having enough money to pay for regular expenses?" The average answer was 2.24. "In the last year, how often have you worried about paying for college?" The average of the responses was 2.2. "In the last year, have you chosen not to participate in an education activity (clubs, field trips) due to lack of money?" The average answer was 1.85. "In the last year, how often have you chosen not to purchase required academic material due to their cost?" The average response was 2.09. "Financial concerns have interfered with my academic performance." Students were asked to strongly agree (4), agree (3), disagree (2), or strongly disagree (1). The average answer was 2.11.

Table 2 summarizes student characteristics by gender. The men had slightly higher-class grades, ACT, GRIT, CI, and PE scores, but only the difference in CI scores was significant. Women had slightly higher ambition scores, GPAs, and average number of hours worked. Women had a slightly higher average response to the statement "My academic performance has been affected by financial concerns," and a higher percentage of women were FGCSs. However, women did have significantly higher planned study hours and higher measures of overall financial stress level, worry about regular and college expenses, and not participating in academic activities due to financial concerns.

As can be seen from Table 3, larger and more significant differences in student characteristics occurred between African American and Caucasian students. The average grade for African American students was 69.1%, 14.3 percent lower than the average of 83.4% for the Caucasian students. The difference was significant with a p-value of .000003. African American students had significantly lower ACT scores and GPAs. Their GRIT scores and planned study time, however, were significantly higher than those of the Caucasian students,

which may indicate that the African American students worked harder to compensate for their lower academic aptitudes, measured by their ACT scores. African Americans had significantly higher levels of financial stress in all areas of financial concern. They worried more often about college and regular expenses, failed to participate in activities and buy class materials more often than the Caucasian students. Significantly more African American students felt that financial concerns had affected their academic performance, and a higher percentage of the African Americans were FGCSs.

Table 4 presents the characteristics of the sample comparing FGCSs with students with at least one parent attending college. The average grade for the FGCSs was slightly higher than the grade for students with at least one parent attending college, but the difference was not significant. The average GPA for FGCSs was lower by 0.05 points, but not significantly lower than that of the students with at least one parent attending college. The FGCSs had significantly lower average ACT scores, but significantly higher hours worked, overall financial stress levels, and grit scores. Additionally, they were significantly more likely to worry about regular and college expenses.

In order to determine the short-term impact of grit, financial stress, being a FGCS, and other factors on grades, we regressed grit, gender, ethnicity, GPA, ACT, level of financial stress, hours worked, planned study hours, the course level, and college attendance of parents on the course grade as the dependent variable. Gender, ethnicity, parents' college attendance, and course level were all dummy variables (0 = male and 1 = female, 0 = Caucasian and 1 = African American, 0 = non-FGCS and 1 = FGCS, 0 = upper-level course and 1 = principles). Shown in Table 5, for the entire sample of 419 students, GPA and ACT had highly significant positive impacts on the grade. Being a FGCS was positive and significant at the 5.2% level. The principles course level had a significant negative impact on the grade. When the sample was divided according to whether students were non-FGCS and students who were FGCSs, we found significant positive effects from grit, GPA, and ACT, and a significant negative effect for principles level courses for the non-FGCS. For the FGCSs, ethnicity, grit, and work hours had significant negative effects, while GPA had a significant positive effect.

Stepwise regressions for the entire sample are illustrated in tables 5a, 5b, and 5c. The results show that GPA, ACT, and being a FGCS had significant positive effects on the grade, while the principles level courses had a significant negative effect on grades. For non-FGCS, GPA, ACT, and grit had significant positive effects while the principles level had a significant negative impact. For the FGCS, GPA had a significant positive effect on the course grade, while ethnicity (being African American), grit, and work hours had negative effects.

To determine factors with long-term effects on academic performance, we used GPA as the dependent variable and gender, ethnicity, grit, ACT, work hours, study hours, financial stress, parents' college attendance, and the course level as explanatory variables. Table 6 shows the results for the entire sample, and then for the sample divided according to parents' college attendance.

For both the entire sample and for the non-FGCSs, gender (being female), and ACT had significant positive effects on GPA, while being African American, and financial stress had significant negative effects on GPA. For FGCSs ACT had a significant positive effect and financial stress and being African American had significant negative effects.

Stepwise regressions were performed to determine the final regressions displayed in Tables 6a, 6b, and 6c. For the entire sample and for non-FGCSs, ACT and gender had significant positive effects, and ethnicity and financial stress had significant negative effects.

For the FGCSs, ACT and the principles level had a significant positive effects and financial stress and ethnicity had significant negative effects.

SUMMARY AND CONCLUSIONS

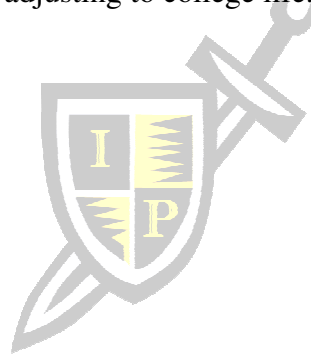
The results of our descriptive statistics show that a significantly higher percentage of women were employed. Women reported significantly more financial stress and planned to study significantly longer than men. The female students had less grit, but the difference was not significant. With respect to ethnicity, African American students had significantly lower grades, lower ACT scores, and lower GPAs; however, their level of grit and financial stress were significantly higher than that of the Caucasian students. Among FGCSs, ACT scores were significantly lower than those of non-FGCSs, but their levels of financial stress, work hours, grit, and ambition were significantly higher. Although most studies, including Cruze et al. (2005), Engle and Tinto (2008), and Baker (2012), found that a lack of academic success among FGCSs compared to non-FGCSs, we found that for our short-term and long-term measures, grades and GPA, respectively were not significantly different. This could be explained by our sample including many students already at the sophomore level or higher so that the FGCSs with the poorest grades and GPA had already dropped out. Similarly to Bui (2002) and Engel and Tinto (2008) we found significantly higher levels of financial stress among FGCSs. Our study, as well as Chen and Carroll (2005), Engle and Tinto (2008), and Mangan (2015), found that FGCSs work more hours than non-FGCSs, leading to less time for the academic and social interaction, which lead to better academic outcomes. As did Pascarella et al. (2004), Almeida et al. (2019), and Strayhorn (2006), we found that FGCSs were more likely than non-FGCSs to fail to participate in campus activities due to financial difficulties.

In the short run, the measure of academic success was grades. For the entire sample of 419 students, we found significant positive impacts of GPA, ACT scores, and being a FGCS, and a significant negative effect of being in a principles class, as opposed to an upper-level class. For non-FGCS we found significant positive impacts from ACT scores, GPA, and grit. Being in the lower-level principles courses had a negative impact on grades. For FGCS, the impact of GPA was significantly positive, while the impact of grit and being an African American were significantly negative. Since ACT measures aptitude and ability whereas GPA measures effort, we would expect them to make significant positive contributions to the grade. Likewise, we would expect the level of the course to have a negative impact, especially since the average grade among the principles students in the sample was 80.3%; and among the upper-level students, 82.4%. The significant positive impact on the entire sample of being a FGCS may mean that these students work harder due to a lack of confidence compared to the non-FGCSs who benefit from possibly more supportive parents. The negative impact of grit on the FGCS students' grades in combination with their having a significantly more grit than the non-FGCS (3.81 vs 3.63) may mean that their focus is on work to relieve financial stress. Our descriptive statistics showed that FGCS worked significantly more than non-FGCS, an average of 17.8 hours, compared to 13 hours for non-FGCS. The financial stress level of FGCS was significantly higher than that of non-FGCS (2.31 vs 2.11).

When we examined the long-term impact of various factors on GPA, for both the entire sample and for the non-FGCSs, both ACT and being female had significant positive impacts; however, financial stress and being an African American had significant negative impacts. For the seventy-three FGCS, ACT scores had a significant positive impact on GPA, while financial

stress had a significant negative impact on GPA. Financial stress had a consistently significant negative impact for the entire sample and for the individual samples of FGCSs and non-FGCSs. The factors that composed the financial stress level measure, worrying about college and regular expenses, not purchasing books, and not participating in class activities, all detract from a student's academic success. The higher level of financial stress also led to longer work hours for the FGCS in our sample, which also detracts from a student's ability to concentrate on their education. Unlike the studies by Duckworth and Quinn (2009), O'Neal et al. (2016), Broghammer (2017), and Strayhorn (2006), but in agreement with Almeida et al. (2019) and Midkiff et al. (2017), we found no long term or short-term positive impact of grit. However, we did find a negative short-term impact of grit on grades. Since we also found a negative impact from financial stress, the negative effect of grit is possibly due to students focusing their grit on work necessary to reduce financial stress.

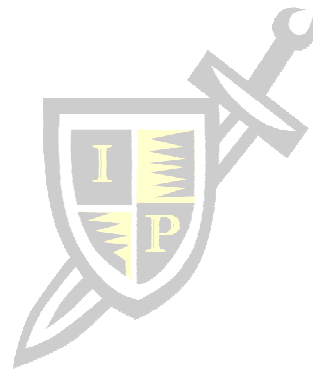
To improve the academic success of all students, but particularly FGCSs, in agreement with Engle and Tinto (2008) we recommend increases in financial aid to reduce financial stress so that students can focus on their education. Reducing the work burden on FGCS will allow more time for interaction with other students and participation in campus activities, which should lead to better academic outcomes as Dowd (2004) suggested. Along with Engle and Tinto (2008) we also recommend basic skills instruction to help students, especially FGCSs, with time and financial management and with adjusting to college life.



REFERENCES

- Almeida, D. J., A. M. Byrne, R. M. Smith, S. Ruiz. "How Relevant Is Grit? The Importance of Social Capital in First-Gen College Students' Academic Success," *Journal of College Student Retention: Research, Theory & Practice*, June 2019.
- Baker, Celia. "Experts Say Building Skills like Grit and Perseverance will help increase college readiness in the US," *Deseret News*, December 2012.
- Bennett, D., McCarty, C, Carter, M. "The Relationship Between Grit and Academic Performance in the Classroom," *Journal for Economic Educators*, Vol. 20 No. 2, 2020.
- Bennett, D., McCarty, C, Carter, M. "The Impact of Financial Stress on Academic Performance in College Economics Courses," *Academy of Educational Leadership Journal*, Vol. 19, No. 3, 2015.
- Broghammer, Sean M. "Grit as a Predictor of Academic Success for First-Time Undergraduate Students," *Dissertation 463*, University of Northern Colorado, Scholarship & Creative Works, 2017.
- Bui, Khanh Van T. "First-Generation College Students at a Four-Year University: Background Characteristics, Reasons for Pursuing Higher Education, and First-Year Experiences," *College Student Journal*, Vol. 36, No. 1, March 2002.
- Chen, X., Carroll, C. Dennis. "First-Generation Students in Postsecondary Education: A Look at Their College Transcripts," *National Center for Education Statistics*, 2005.
- Choy, S.P. "Students Whose Parents Did Not Go to College: Postsecondary Access, Persistence, and Attainment," *U.S. Department of Education*. Washington, DC: National Center for Education, 2002.
- Collier, P. J., & Morgan, D. L. "Is that paper really due today?": Differences in first-generation and traditional college students' understandings of faculty expectations. *Higher Education*, Vol. 55, No. 4, 2008.
- Cruze, T.M., Kinzie, J.L., Williams, J.M., Morelon, C.L., Yu, X. "The Relationship between First-Generation Status and Academic self-Efficacy among Entering College Students," Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Philadelphia, PA, November 17-19, 2005.
- Dowd, Alicia. "Income and Financial Aid Effects on Persistence Degree Attainment in Public Colleges," *Education Policy Analysis Archives*, 12(21), May 2004.
- Duckworth, A.L. *Grit: The Power of Passion and Perseverance*. Scribner, 2016.
- Duckworth, A.L. and Quinn, P.D. "Development and Validation of the Short Grit Scale," *Journal of Personality Assessment*, Vol. 91, 2009.
- Engle, J. and V. Tinto, "Moving Beyond Access: College Success for Low-Income First-Generation Students." *The Pell Institute*, 2008.
- Ishitani, Terry T. "Studying Attrition and Degree Completion Behavior among First-Generation College Students in the United States," *Journal of Higher Education*, Vol. 77, No. 5, 2006.
- Mangan, Katherine. "The Challenge of the First-Generation Student." *Chronicle of Higher Education*, 5/22/15, Vol 61, Issue 36.
- Midkiff, B., Langer M., Demetriou C., Panter A.T. "Measuring Grit Among First-Generation College Students: A Psychometric Analysis," conference paper at The Annual Meeting of the Psychometric Society, June 2017.

- O'Neal, C. R., M. M. Espino, A. Goldthrite, M. F. Morin, L. Weston, P. Hernandez, A. Fuhrmann. "Grit Under Duress: Stress, Strengths, and Academic Success Among Non-Citizen and Citizen Latina/o First-Generation College Students." *Hispanic Journal of Behavioral Sciences*, Vol. 38. No. 4, 2016.
- Pascarella, E.T., Pierson, C.T., Wolniak, G.C., Terenzini, P.T. "First-Generation College Students: Additional Evidence on College Experiences and Outcomes," *Journal of Higher Education*, Vol. 75, No. 3, 2004.
- Skomsvold, P. "Profile of Undergraduate Students: 2011-12 (Web Tables)," U.S. Department of Education. Washington, DC: National Center for Education Statistics, October 2014.
- Strayhorn, Terrell L. "What Role Does Grit Play in the Academic Success of Black Male Collegians at Predominantly White Institutions?" *Journal of African American Studies*. Vol. 18, 2014.
- Strayhorn, Terrell L. "Factors Influencing the Academic Achievement of First-Generation College Students," *NASPA Journal*, v43 n4 p82-111, 2006.
- Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. "Unseen disadvantage: How American universities' focus on independence undermines the academic performance of first-generation college students," *Journal of Personality and Social Psychology*, Vol. 102 No 6, 2012.



APPENDIX**Table 1: Student Characteristics** (Values in parentheses are standard deviations.)

Gender	
Female	48.2%
Male	51.8%
Ethnicity	
African American	16.6%
Caucasian	83.4%
Student Employment	
Employed	59.4%
Work < 20 hours per week	30.9%
Work ≥20 hours per week	69.1%
Average weekly work hours	23.1 (9.3) n=249
Parents' College Attendance	
Both parents attended	52.3%
One parent attended	30.1%
Neither parent attended	17.7%
Averages	
Grade	81.1 (13.57)
Principles	80.27 (13.89) n=269
Upper Level	82.43 (12.87) n=150
ACT	23 (4.12)
GPA	3.19 (0.59)
GRIT	3.66 (0.39)
CI	3.11 (0.74)
PE	4.14 (0.55)
Ambition	4.32 (0.56)
Planned weekly study hours	4.1 (3.02)
Financial Stress Level	2.14 (0.78)
Regular expenses	2.46 (1.05)
College expenses	2.2 (1.13)
Not participate	1.85 (0.98)
Fail to purchase books	2.09 (1.09)
Financial concerns affected academic performance	2.11 (0.93)

Table 2: Student Characteristics by Gender (Values in parentheses are standard deviations.)

	Men n=217	Women n=202	Significance (p-value)
Grade	81.0 (14.02)	81.1 (13.11)	.929
Grit	3.65 (0.54)	3.40 (0.48)	.256
CI	3.16 (0.72)	3.07 (0.60)	.10
PE	4.16 (0.58)	4.13 (0.52)	.578
Ambition	4.32 (0.57)	4.33 (0.54)	.760
ACT	23.27 (4.07)	22.78 (0.81)	.228
GPA	3.17 (0.61)	3.21 (0.57)	.419
Planned Study Hours	3.82(3.27)	4.35 (2.71)	.07
Financial Stress Level	2.03 (.75)	2.26 (0.87)	.003
Regular expenses	2.27 (1.06)	2,67 (1,01)	.0001
College expenses	1.99 (1.05)	2.43 (1.17)	.0000746
Not participate	1.73 (1.73)	1.99 (1.03)	.0009
Fail to purchase books	2.1 (1.06)	2.07 (1,11)	.80
Academic performance affected by financial concerns	2.07 (0.92)	2.15 (0.93)	.38
Employed	54.4%	64.9%	.03
Average work hours	22.62 (8.95)	23.39 (9,8)	.518
Neither parent attended college	14.7%	20.3%	.13

Table 3: Student Characteristics by Ethnicity (Values in parentheses are standard deviations.)

	African American n=69	Caucasian n=350	Significance (p-value)
Grade	69.1 (13.05)	83.4 (12.41)	.0000003
Grit	3.79 (0.64)	3.64 (0.57)	.079
CI	3.17 (0.67)	3.10 (0.68)	.44
PE	4.22 (0.62)	4.13 (0.53)	.24
Ambition	4.43 (0.64)	4.30 (0.53)	.13
ACT	19.3 (3.21)	23.8 (3.87)	.0000017
GPA	2.62 (0.48)	3.30 (0.53)	.0000056
Planned Study Hours	5.32 (0.73)	3.83 (2.82)	.0019
Financial Stress Level	2.51 (0.73)	2.07 (0.77)	.0000018
Regular expenses	3 (1.04)	2.36 (1.02)	.000009
College expenses	2.57 (1.25)	2.13 (1.09)	.008
Not participate	2.09 (0.97)	1.81 (0.95)	.031
Fail to purchase books	2.45 (1.14)	2.02 (1.06)	.005
Academic performance affected by financial concerns	2.46 (0.95)	2.04 (0.90)	.001
Employed	53.6%	60.3%	.30
Average work hours	24.2 (10.43)	22.9 (9.10)	.484
Neither parent attended college	21.7%	16.6%	.31

Table 4: Comparing FGCS

	First Generation College Students n=73	Students with at Least on Parent Attending College n=346	Significance Level (p-value)
Grade	81.4 (13.82)	81.0 (13.54)	0.822
GPA	3.15 (0.628)	3.20 (0.581)	0.581
ACT	22.1 (4.393)	23.2 (4.035)	0.051
Work Hours	17.84 (14.53)	12.95 (13.03)	0.009
Study Hours	4.50 (4.30)	3.99 (2.67)	0.331
Financial Stress Level	2.31 (0.815)	2.11 (0.775)	0.058
Regular Expenses	2.66 (1.044)	2.42 (1.053)	0.083
College Expenses	2.51 (1.180)	2.14 (1.107)	0.015
Failed to Participate	2.0 (1.034)	1.82 (0.969)	0.187
Failed to Buy Books	2.11 (1.162)	2.08 (1.222)	0.862
Academic Performance Affected Academics	2.29 (1.007)	2.08 (0.902)	0.099
Grit	3.81 (0.661)	3.63 (0.566)	0.037
CI	3.25 (0.862)	3.08 (0.706)	0.132
PE	4.23 (0.520)	4.12 (0.552)	0.105
Ambtition	4.43 (0.507)	4.30 (0.563)	0.056
Female	56.2%	46.5%	0.134
African American	20.5%	15.3%	0.271

Table 5: Regression Results for All Variables on Grades

	Entire Sample (n=419)	non-FGCS (n=346)	FGCS (n=73)
Gender	-0.65 (0.406)	-0.491 (0.570)	-2.17 (0.24)
Ethnicity	-1.23 (0.294)	-0.74 (0.581)	-4.12 (0.109)
GRIT	0.397 (0.550)	1.235 (0.106)	-2.60 (0.061)
GPA	17.386 (.000003)	17.212 **	17.83 **
ACT	0.286 (0.014)	0.333 (0.012)	0.154 (0.522)
Work Hours	-0.024 (.434)	-0.008 (0.821)	-0.109 (0.098)
Study Hours	0.124 (0.351)	0.126 (0.460)	0.128 (0.544)
Financial Stress	-0.271 (0.612)	-0.647 (0.275)	1.52 (0.224)
FGCS	1.99 (0.052)		
Level	-2.433 (0.003)	-2.587 (0.004)	-1.30 (0.539)
Adjusted R ²	67.69%	67.29%	71.36%

Values in parentheses are p-values

** Significant at 0.000 level

Table 5A: Stepwise Regression for Entire Sample (n=419) on Grades

	Step 1	Step 2	Step 3	Step 4
GPA	18.758 **	18.753 **	17.733 **	17.690 **
Level		-2.248 (0.005)	-2.184 (0.006)	-2.304 (0.004)
ACT			0.27 (0.014)	0.29 (0.008)
NC				1.84 (0.067)
Adjusted R ²	66.69%	67.25%	67.65%	67.83%

Table 5B: Stepwise Regression for non-FGCSs on Grades

	Step 1	Step 2	Step 3	Step 4
GPA	18.866 **	18.752 **	17.590 **	17.510 **
Level		-2.561 (0.003)	-2.547 (0.003)	-2.506 (0.004)
ACT			0.300 (0.017)	0.334 (0.008)
Grit				1.256 (0.093)
Adjusted R ²	66.13%	66.88%	67.34%	67.51%

Table 5C: Stepwise Regression for FGCSs on Grades

	Step 1	Step 2	Step 3	Step 4
GPA	18.43 **	17.42 **	17.48 **	17.07 **
Ethnicity		-4.22 (0.076)	-4.09 (0.081)	-4.80 (0.044)
Grit			-2.29 (0.087)	-2.20 (0.097)
Work Hours				-0.092 (0.139)
Adjusted R ²	69.56%	70.49%	71.32%	71.82%

Values in parentheses are p-values

** Significant at 0.000 level

Table 6: Factors Effecting Academic Performance

	Entire Sample (n=419)	Students with Parents with Some College (n=346)	FGCSs (n=73)
Gender	0.139 (0.003)	0.143 (0.004)	0.098 (0.434)
Ethnicity	-0.361 **	-0.390 **	-0.295 (0.086)
Grit	0.053 (0.183)	0.069 (0.121)	0.006 (0.954)
ACT	0.061 **	0.065 **	0.048 (0.003)
Work Hours	-0.002 (0.248)	-0.003 (0.206)	-0.001 (0.850)
Study Hours	-0.004 (0.600)	-0.003 (0.804)	0.001 (0.936)
Financial Stress	-0.144 **	-0.113 (0.001)	-0.255 (0.002)
Level	0.007 (0.887)	-0.052 (0.319)	0.328 (0.021)
No College	0.058 (0.350)		
Adjusted R ²	38.24%	39.91%	35%

** Significant at 0.000 level

Table 6a: Stepwise Regressions for Entire Sample (n=419)

	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
ACT	0.077 **	0.063 **	0.060 **	0.061 **	0.062 **	0.062 **
Ethnicity		-0.397 **	-0.347 **	-0.351 **	-0.355 **	-0.363 **
Financial Stress			-0.141 **	-0.153 **	-0.152**	-0.143 **
Gender				0.132 (0.005)	0.135 (0.004)	0.140 (0.003)
Grit					0.049 (0.216)	0.055 (0.164)
Work Hours						-0.002 (0.241)
Adjusted R ²	29.1%	34.2%	37.3%	38.4%	38.5%	38.5%

Table 6b: Stepwise Regression for non-FGCSs (n=346)

	Step 1	Step 2	Step 3	Step 4
ACT	0.081 **	0.066 **	0.064 **	0.064 **
Ethnicity		-0.418 **	-0.377 **	-0.382 **
Financial Stress			-0.115 (0.001)	-0.126 **
Gender				0.136 (0.006)
Adjusted R ²	31.1%	36.7%	38.7%	39.9%

Table 6c: Stepwise Regressions for FGCSs

	Step 1	Step 2	Step 3	Step 4
ACT	0.066 **	0.060 **	0.059 **	0.048 (0.002)
Financial Stress		-0.277 **	-0.271 **	-0.250 (0.001)
Level			0.303 (0.024)	0.332 (0.013)
Ethnicity				-0.288 (0.079)
Adjusted R ²	20.4%	32.4%	36.3%	38.2%

** Significant at the 0.000 level

