

RETAINING UNIVERSITY STUDENTS DURING CRISIS: HOW FOOD PANTRIES CAN DIMINISH BARRIERS

Amanda W. Scarbrough

Sam Houston State University
aes060@shsu.edu

Christine Cardinal

Sam Houston State University

Patrick Davis

Sam Houston State University

Abstract

Removing barriers to student success, enabling students to persist in higher education to graduation, has been a well-deliberated topic. Concern regarding retention and consequently graduation is an issue of interest for stakeholders from university administrators to faculty, to legislators. Today's University students experience barriers on top of barriers. Insert a crisis, such as the COVID-19 pandemic, and the scales may tip forcing students to drop out or side-line University pursuits. To better understand this balancing act and what Universities can do to tip the scale in their favor, we explored the use of University Food Pantries, student classification and GPA during a national emergency. Data indicated that when students returned to campus post-COVID 19 there was a surge in visits to the food pantry as compared to pre-COVID 19. Further, weekly attendance reflected a higher relative use of the food pantry by students who had the lowest GPAs.

Keywords: Retention, Student Support, Food Pantry, Student Success

Introduction

Removing barriers to student success, enabling students to persist in higher education to graduation has been a well-deliberated topic. Concern regarding retention and consequently graduation is an issue of interest for many stakeholders. At the University level, the administration is concerned about how dropout rate effects tuition revenue and college rating. Faculty worry about the potential damage dropouts can have on long-term and meaningful student/faculty relationships. While state and federal legislators and policymakers are concerned with the accumulation of student debt and the ability for

student loans to be paid back if a student leaves the University without a degree (Bell, 2014). Additionally, it is important to note, stakeholder concerns regarding dropouts, are not solely self-centered. Stakeholders are often concerned for the futures of students who drop out of college including the ability to achieve a livelihood after dropping out.

To many, student success is defined by the student's University Grade Point Average (GPA). Some believe that the higher a student's GPA, the more successful the student. While a direct link between student GPA and success may be uncertain, GPA does have a discernable impact on university-related student success metrics. Generally, students must meet GPA requirements, often a minimum of a 2.0 on a 4.0 scale, in order to remain enrolled in as well as graduate from a university. Further, for students to remain eligible for federal financial aid and some institutional scholarships, eligibility hinges on the attainment of some GPA threshold. A GPA of 2.0 or lower creates potential complications for students at the university level including loss of financial aid, academic probation or even suspension. In particular, some employers request transcripts with student GPA included as a part of the hiring process. There is some indication of a correlation between students with low GPAs and employer selection. University students with a GPA lower than 2.5 may have difficulties securing internships during schooling and jobs post-graduation (Maynard, 1999; Zhang & Li, 2010).

According to research, the top barriers disrupting success, including the achievement of an acceptable GPA, described by university students include both tangible and intangible hurdles (American Federation of Teachers: Higher Education, 2010; Burdman, 2005). Tangible barriers include inadequate or insufficient University services like advising, or insufficient guidance from University personnel, as well as difficulties in a student's ability to secure sufficient funding for academic needs as well as living expenses. Obstacles that are more intangible, cited by university students as hindering their success, include lack of time, ability to balance school, work, and family responsibilities, lack of time management skills, poor study skills, ineffective self-discipline, and deficient motivation (American Federation of Teachers: Higher Education, 2010; Burdman, 2005).

Although barriers to success occur, University enrollment rates continue to grow. Enrollment in University education has increased 195% since 1970, when only 3.5% of the U.S. population were college students. Currently, there are 17.5 million undergraduate

students enrolled in colleges nationwide of that 12 million or 55.2% of college students are White or Caucasian; 19.5% of the college student population is Hispanic or Latino, a 441.7% increase since 1976, and 2.1 million or 9.6% of the students are Black or African American, an increase of 39.6% since 1976 (Education Data, 2010)

As of 2018, 13 million, or 42.1% of Americans 18- to 24-year-olds were enrolled in colleges or graduate schools. (Educational Data, 2010) Women were 24.7% more likely to enroll in higher education than men, earning 57% of bachelor's degrees. (Educational Data, 2010). Recent figures show that one-third of university students are the first-generation in their family to attend college. National Center for Educational Statistics, 2018). Fourteen percent of University students are single parents and 56% of these parents devote over 30 hours per week caring for their children (Kruvelis, Cruse, & Gault, 2017; National Center for Educational Statistics, 2018). On average, today's University student borrows \$30,030 to attain a bachelor's degree and 30% of students lived at or below the poverty line (Education Data, 2010; National Center for Educational Statistics, 2018).

As the identity and persona of university students change, it is essential to consider additional barriers inhibiting student success. Over the last decade, multiple studies have been conducted regarding food insecurity among college students. Research indicates that from 20% to more than 50% of college students are food insecure, which is considerably higher than the 12% rate for the entire US population (Freudenberg, Goldrick-Rab, Poppendieck, 2019). In 2019, a midsized University conducted an online survey of 13,897 undergraduates. The survey gathered demographic information as well as behavioral patterns and food security concerns using the USDA food security index. Results of the survey found that 48% of students were food insecure. The odds of experiencing food insecurity were remarkably higher for women, African Americans, and Hispanic students. Further, this study found that food insecurity increased the odds of being among the lower 10% GPA and reduced the odds of being among the upper 10% GPA (Weaver, 2019).

Today's university students experience barriers on top of barriers. It is difficult to balance school, work, family obligation, and finances (Goldrick-Rab et al., 2019). Insert a crisis, such as the COVID-19 pandemic, and the scales may tip forcing students to drop out or side-line University pursuits. In order to better understand this balancing act and what Universities can do to tip the scale in their favor, we investigated access to and utilization of

free foods services during crises. More specifically, in this study, we explored the use of University Food Pantries, student classification, and GPA during a national emergency.

Background

Sam Houston State University (SHSU) is a public university in rural Huntsville, Texas. SHSU was founded in 1879 and is the third-oldest public college or university in Texas. SHSU had an enrollment of 21,558 students in Fall 2019 and 19,921 students in Spring 2020 (SHSU, 2021). As of the academic year 2020 – 2021, SHSU had 18,811 13,331 female students and 47% of students are minorities or people of color (BIPOC). In addition, SHSU has higher rates of ethnic diversity but less age diversity than the national average (College Factual, 2021). 66% of full-time undergraduates receive some kind of need-based financial aid and 48% of students can be considered low-income as indicated by receipt of Federal Pell Grant Aid. SHSU has a variety of services available to enrolled students including (but not limited to): athletic facilities, career services, counseling services, legal services, money management, and a food pantry (SHSU, 2021).

Established in 2014 the SHSU Food Pantry supports SHSU students who struggle with food insecurity, encourages an educational understanding of food insecurity, and provides a space for students to volunteer and network with their peers. The Food Pantry was the result of a 2014 survey of SHSU students in which over 50% of respondents indicated that they had experienced food insecurity in recent months. The Food Pantry seeks to address the issue of food insecurity among students who may not have the extra resources to purchase food for themselves and is fully supported by community donations, both food-based and financial. Preliminary data indicates the number of students utilizing food pantry services has increased 60% each year since 2014.

Methods

For both the fall 2019 and spring 2020 semesters, the SHSU food pantry was open for disbursement once every two weeks. Student entry into the food pantry was recorded by a card reader of student ID and compiled into a spreadsheet. Duplicate entries on the same disbursement day (double swipes) were removed prior to analysis.

Due to the COVID 19 pandemic, during the spring 2020 semester, SHSU COHS elected to open the food pantry outside the normal disbursement days because of increased student need. These additional student visits were largely recorded within 2

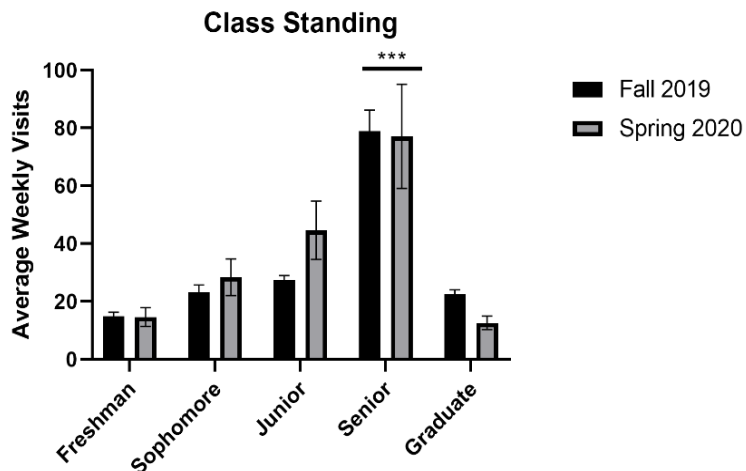
days of the regularly scheduled disbursement date and made up for approximately 10% of the total visits for that semester. For the purpose of analysis, those visits were combined with the nearest regularly scheduled disbursement date.

Data regarding university enrollment, class standing, and GPA were obtained from university records for both the Fall 2019 and Spring 2020 semesters. Data were compiled in Microsoft Excel and analyzed by GraphPad Prism (8.4.3). A mixed-effects model two-way ANOVA was used to analyze class standing, GPA, and their adjusted values. Sidak's multiple comparison test was used to detect individual differences if main effects were present. A two-way ANOVA was used to compare total enrollment and GPA with a Sidak multiple comparison test if main effects were present. Outliers were detected by a Grubbs' test but not removed from the data. Data shown are means \pm standard error.

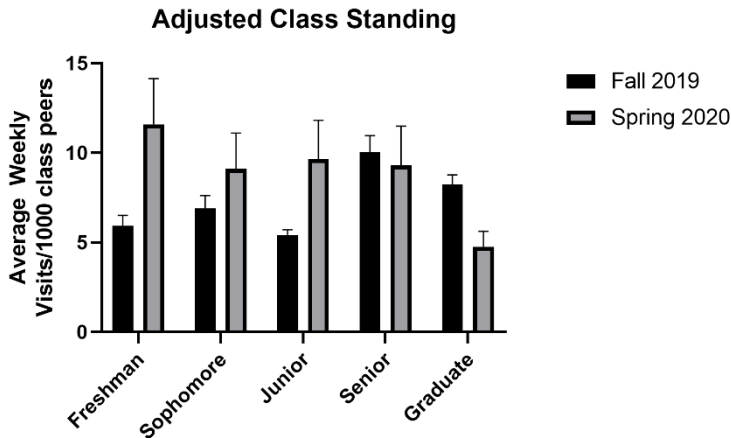
Results

There was a significant main effect of class standing ($p < 0.0001$) on the average weekly visits (Figure 1).

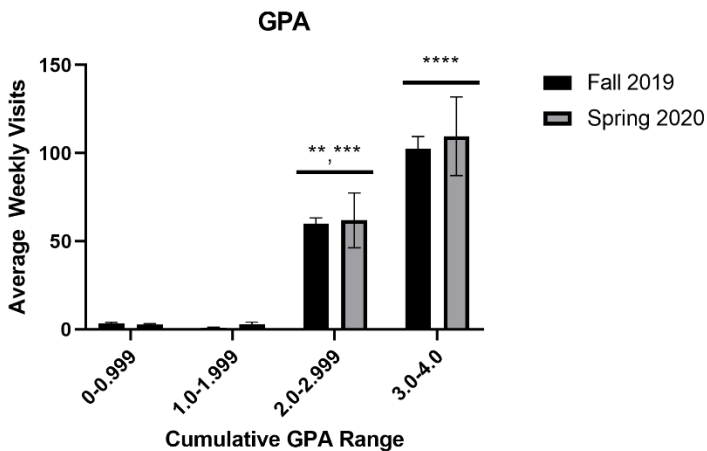
Figure 1: Class Standing and Visits



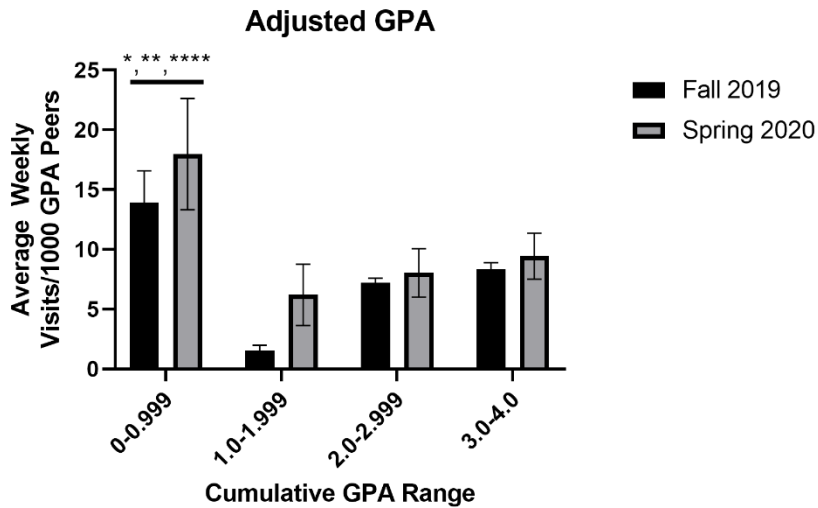
Sidak's pots-hoc comparisons showed seniors had significantly more weekly visits than all other class categories. However, when the values were adjusted based on total enrollment, there were no statistically significant main effects (Figure 2).

Figure 2: Adjusted Class Standing and Visits

There was a significant main effect of GPA on average weekly visits ($p < 0.0001$; Figure 3).

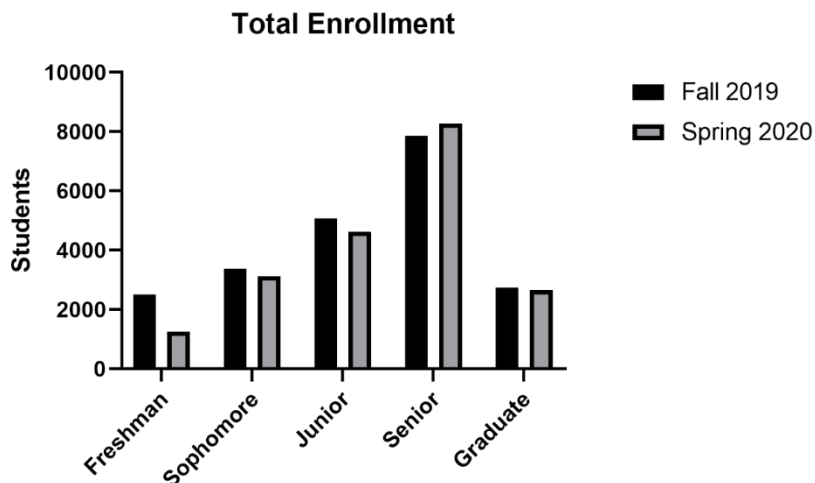
Figure 3: GPA and Visits

Sidak's post-hoc comparisons showed no significant difference between the two lowest GPA ranges but significant differences between all other GPA ranges. When GPA was adjusted based on enrollment, there was a significant main effect of GPA on food pantry use ($p < 0.0001$) (Figure 4).

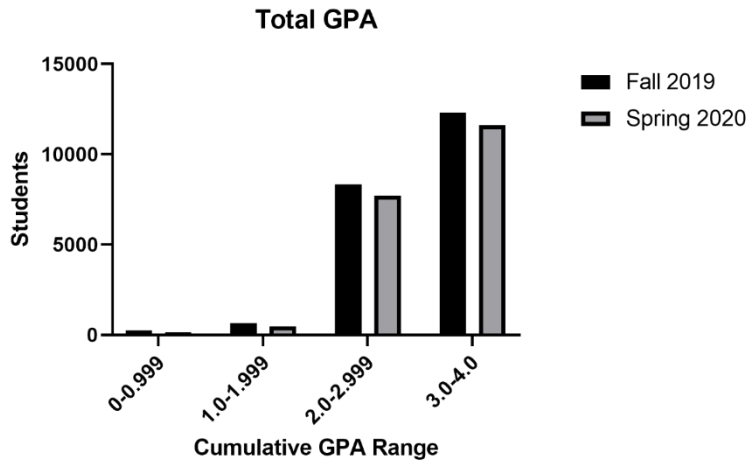
Figure 4: Adjusted GPA and Visits

Sidak's post-hoc comparison showed the lowest GPA range to be significantly higher than all other GPA ranges.

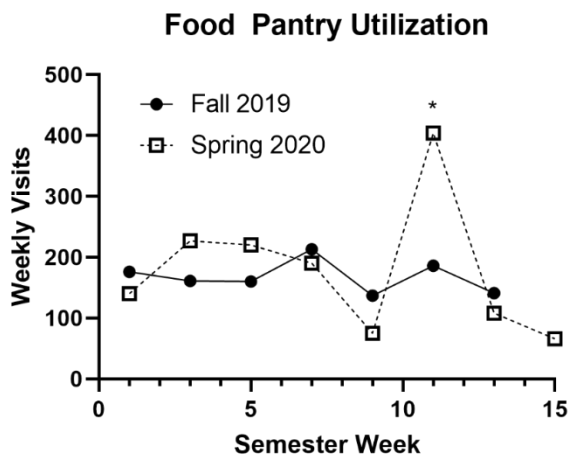
Comparisons of total enrollment exhibited a significant main effect of class standing on enrollment $p < 0.001$ (Figure 5) however, there was no main effect for semester of usage.

Figure 5: Total Enrollment by Classification

Additionally, there was a significant main effect of GPA $p < 0.0001$ but not for semester (figure 6).

Figure 6: Total GPA of Students

Additionally, when weekly visits are plotted over time for both semesters, the post COVID-19 surge in food pantry usage is clearly evident (Figure 7) with that data point being identified as a Grubbs' outlier $p < 0.05$.

Figure 7: Food Pantry Utilization

Discussion

During the spring 2020 semester, the University dismissed students for spring recess on March 7th (week 8 of the 16-week semester) with the intent to return to classes on March 23rd. However, on March 12th due to the surge in COVID-19 cases, the University extended the spring recess by an additional week eventually transitioning the majority of classes to an online format to safeguard student and faculty health. Even though classes

transitioned to an online delivery format, students continued to come to campus to access University resources. In particular, and illustrated in the weekly visits in Figure 7 when the students returned to campus post-COVID 19, there was a sizeable surge in visits to the SHSU food pantry as compared to pre-COVID 19.

The swell of visits to the food pantry indicates a clear need for food goods during a crisis. It is essential that this flurry of activity be recognized by university administrations and personnel and community stakeholders. In particular, this upsurge of activity must be acknowledged so that Universities can be prepared to reduce student barriers during any future crises.

While the data indicated that seniors visited the food pantry more than any other class, the University also had significantly more seniors than any other class (Figure 6). To control for this, the weekly visits were adjusted to reflect average visits per 1,000 class peers. When this was done, there were no longer any significant differences between the classes weekly visits. All classifications of students - freshman, sophomores, juniors, and seniors -visited the food pantry relatively equally (Figure 2).

Visits to the food pantry by all classifications of students is especially encouraging. These findings indicate that all students have equal knowledge of and access to the food pantry during a crisis. Additional research should be conducted to understand how University students were aware of the availability of food pantry services during COVID-19. This information will facilitate emergency preparedness for universities so that in future crises these promotion methods can be employed to reach out and inform students of available resources.

Data also indicated that there were more students who used the food pantry from the upper GPA quartiles than the lower (Figure 3) but the university had significantly more students from the upper GPA quartiles than the lower (Figure 6). However, when adjusted for GPA, the weekly attendance reflected a higher relative use of the SHSU food pantry by students who had the lowest GPAs (figure 4).

Further review of student GPA was performed by separating results into two categories: academically and employer acceptable GPAs, 2.5 to 4.0, and at-risk GPAs, 2.499 to 0.0. This analysis showed a notable difference in the ride in visits to the food pantry (Table 1).

Table 1: Total GPA

| GPA | Fall 2019 | Spring 2020 |
|------------|------------------|--------------------|
| 0-2.499 | 3421 | 3185 |
| 2.5-4.0 | 14070 | 14107 |

When adjusted for every 1,000 students with a GPA less than 2.5, 48.23 for every 1,000 University students visited the food pantry pre-COVID and 68.13 for every 1,000 visited the food pantry post-COVID an increase of 19.9 per 1,000. In comparison, for every 1000 students with a GPA was greater than 2.5, 71.36 for every 1,000 University students visited the food pantry pre-COVID and 85.13 for every 1,000 visited the food pantry post-COVID an increase of only 13.77 per 1,000 (Table 2).

Table 2: Total Numbers Adjusted GPA

| GPA | Fall 2019 | Spring 2020 |
|------------|------------------|--------------------|
| 0-2.499 | 48.23 | 68.13 |
| 2.5-4.0 | 71.36 | 85.13 |

Increased utilization of the food pantry post-COVID by students with GPAs below 2.5 is a hopeful finding. Although a direct link between student GPA and success may be uncertain, students with lower GPAs may be struggling with obstacles impeding the achievement of a higher GPA. By offering food pantry related services universities reduce the number of barriers students encounter on the path to reaching success.

Conclusion

As the definition of the “average” University student evolves, the issue of identifying barriers to student success needs further consideration. Based on enrollment trends the “typical” University student is now female, minority, first-generation, with student loans and debt. The combination of several of these demographic and socioeconomic factors creates the potential for not only obstacles to success but vulnerability to crisis. On a good day, effectively balancing multiple commitments such as school, work, family obligation, and finances is difficult. In the event of a crisis, such as the COVID-19 pandemic, students may be up against barriers to difficult to surmount and be forced to drop out or side-line university pursuits.

One obstacle that Universities can help alleviate for students during a crisis is access to food. As demonstrated by this project, during the COVID pandemic students of classifications, freshman, sophomore, junior and senior, increased utilization of the University food pantry. While this indicates that all students needed additional access to food, further research is needed to better understand if and how classification affects utilization.

In addition to university classification, our results found a higher weekly utilization of the food pantry by students who had the lowest GPAs. This is an encouraging finding, as it potentially indicates that University students who are struggling academically are seeking out resources in order to attempt to minimize their obstacles to success. Further research is needed in the area of GPA, food security, and student success.

References

- American Federation of Teachers: Higher Education. (2011). *Exploring student attitudes, aspirations and barriers to success*.
<https://www.aft.org/sites/default/files/studentfocusgrp0311.pdf>
- Bell, S. (2014). Assisting with recruitment, retention and instruction. *Information Outlook*. 8(1), 9-10.
https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1000&context=sla_io_2014#page=14)
- Burdman, B. (2005). The student debt dilemma: Debt aversion as a barrier to college access. *Research and Occasional Paper Series*, CSHE.13.05.
<https://escholarship.org/uc/item/6sp9787j>
- College Factual. Sam Houston State University Demographics: How diverse is it.
<https://www.collegefactual.com/colleges/sam-houston-state-university/student-life/diversity/> Accessed January 21, 2021
- Educational Data. (2010). *College enrollment and student demographic statistics*.
<https://educationdata.org/college-enrollment-statistics>
- Educational Data. (2010). *Student loan debt statistics*. <https://educationdata.org/student-loan-debt-statistics/>
- Freudenberg, N., Goldrick-Rab, S., Poppendieck, J. (2019). College Students and SNAP: The NEW Face of Food Insecurity in the United States. *American Journal of Public Health*, 109: 1652-1658, <https://doi.org/10.2105/AJPH.2019.305332>
- Goldrick-Rab S, Baker-Smith C, Coca V, Looker E, Williams T. (2019). College and university basic needs insecurity: A National #RealCollege Survey Report, 2019.
https://hope4college.com/wp-content/uploads/2019/04/HOPE_realcollege_National_report_digital.pdf. Accessed September 23, 2021
- Kruvelis, M., Cruse, L., and Gault, B. (2017). *Single Mothers in College: Growing Enrollment, Financial Challenges and the Benefits of Attainment*. Institute for Women's Policy Research.
- Maynard, M. L. (1999). Challenging the 3.0 GPA eligibility standard for public relations internships. *Public Relations Review*, 25(4), 495-507.

National Center for Educational Statistics. (2018). <https://nces.ed.gov>

Sam Houston State University. Factbook. Accessed January 21, 2021 from

<https://www.shsu.edu/dept/institutional-effectiveness/factbook>

Weaver, R., Vaughn, N., Hendricks, S., McPherson-Myers, P., Jia, Q., Willis, S., Rescigno, K.

(2020). University student food insecurity and academic performance. *Journal of American College Health*, 68(7): 727-733

Zhang, J. and Li, T. (2010). What determines employment opportunity for college graduates in China after higher education reform?. *China Economic Review*, 21(1):38-50.