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MSDS 5321- Final Project
First-Generation College Students

I. Introduction

A. Study Design

Students who are traditional first-generation college students face challenges with guidance on many aspects of being in a college/university. There have been many studies focused on questioning the achievements of first-generation college students, but we will examine the difficulties of being a first-generation college student. Whether a student's success is dependent upon their parent's prior experience with college/university is not known. In order to generate a hypothesis related to the difficulties of first-generation college students, a cross-sectional study will be used.

As educators, we are intrigued by the challenges that our students may face with entering undergraduate programs. By collecting data and conducting research on current first-generation college students, we can better prepare our elementary students for what is to come.

Our study population will consist of current undergraduate and graduate students between the ages 18-40 from universities/colleges in Texas.

We believe that first-generation students are at a disadvantage in guidance, expectations, and how to navigate in a college/university setting.

B. Study Design

We will create a survey asking whether students are first-generation college students, income level of their parents, current GPA, some expected difficulties, whether or not they received guidance from other family members, skills or information that they deem as beneficial for college students.

The strengths of this survey would be gaining insight from both first-generation students, and continuing-generation students, allowing us to compare the data over a period of time. The

wording of the questions are direct and concise. Also, we attempted to include many outside factors that could affect success in college/university.

A weakness of this survey would be, there could be other factors that are not considered such as difficulty of the major, number of credits attempted, other obligations, and employment status.

C. Operational Objectives
1. Randomly survey individuals currently enrolled in an undergraduate or higher college/university program. Or one who has obtained a degree from a college/university.
2. To better assist grade school students with guidance on what to expect in college.
3. To build a set of tools that can give first-generation college students more of an advantage.
4. To inform families on how to assist their scholar(s) with preparing for higher education.
5. To provide high school students with an informal college prep course as an elective.
6. To encourage students to pursue higher education despite their background.
7. To collect data.
8. To review data for a better understanding of the difficulties of being a first-generation college student.
9. To analyze data to see how students can be more successful in college.
10. To give students a clear concept of time management, and its importance.

D. Literature Review

Millions of individuals make the decision to seek higher education. Of those millions around 56% are first-generation college students. According to studies this places a large percentage of students at a disadvantage. While many individuals are academically prepared, other factors may give them less of an advantage. Deciding which college to attend, filing for financial aid, enrolling in classes, and selecting a major can be very overwhelming, especially for students entering college directly after high school. Without proper guidance, many individuals are lost on what to look for and what questions to ask. This can lead to difficulty in overcoming obstacles, making some very poor decisions, and possibly lessen one's chance to graduate.

In most cases first-generation college students also identify as minorities and low-income. Due to their personal situations these students may also have to obtain a job to support themselves and potentially their families. In some cases, a student's family is depending on them to be a good example for younger siblings or work towards financially supporting the family. This adds to the

stress of being a college student and takes away from time to study, socialize, network, join clubs, etc. This can lead to an individual feeling alone and discouraged. Balancing all of these challenges can, without a doubt, cause one's grades to drop. While it is understood that continuing-generation college students may face some of the same challenges, they typically have family parents/family members that can relate and offer advice or support.

E. Study Population

The study population will consist of males and females currently enrolled or already obtained a degree at a college/university after August 1, 2016. Participates must fall between the ages 18-40, and have English as their primary language. We will randomly select these individuals from rural and suburban areas in the following cities in Texas: Houston, San Antonio, Beaumont, Arlington, Dallas, and Austin.

F. Sampling Design

Sampling Method

> Stage 1: The first stage will be to select individuals who have obtained a degree, or working towards a degree in Houston, San Antonio, Beaumont, Arlington, Dallas, and Austin. Subjects will be randomly selected using simple random sampling. From there a list of first-generation students, and continuing-generation students will be generated to assist us in comparing the factors of both experiences.
>
> Stage 2: The second stage individuals will be administered a survey to collect data on each individual. The subjects will be stratified into groups based on their GPA from the most recent semester, or their GPA upon graduation. This will be used to help us calculate how successful subjects were/are in their experience.

Sample size requirement

According to "The Center for First-Generation Student Success" nationally 65% of first-generation, and 75% of continuing-generation college students were enrolled full time at a college/university. 5% of first-generation and 1% of continuing-generation students left college

without receiving a degree of any sort. The sample size will be determined using estimates for the above proportions. We will use the above estimates for the proportion of first-generation, and continuing-generation college students.

Based on the above percentages the difference between the proportions will be 10%.

The sizes for the two groups will be the same to maintain consistency throughout the study, and to get a clear comparison of the challenges one may face to reach success.

We will use the usual significance level of .05, and the power used of .80 to calculate the appropriate sample size.

Portions: .65, .75 Power: 0.80

Estimated sample size for two-sample comparison:

alpha = 0.05
power = 0.8
p1 = 0.65
p2 = 0.75
n2/n1 = 1.00

Estimated sample size per group:

n1 = 1570
n2 = 1570

Each group will need at least 1,570 participants to have an effective effect size.

	First-Generation		Continuing-Generation	
	Number	Percentage	Number	Percentage
Grade Point Average (4.0 scale)				
0.0-1.0				
1.1-2.0				
2.1-3.0				
3.1-4.0				

Average GPA				
SD				
*Calculate the average GPA of both groups, and compare them to one another to test our hypothesis.				

Table No. 2: Collecting data on students' experiences grouped by their age.

		FG (n=1,570)	CG (n=1,570)	Survey Question #3	Survey Question #4	Survey Question #5	Survey Question #7	95% CI
Age Group	18-21							
	22-25							
	26-29							
	30+							
Mean Age								
*Insight on students' experiences as college students while grouping them by age to see if age also plays a factor, and how much of a factor it plays in students' success.								

Survey Questions:

1. Are you a first generation college/university student? (neither parent graduated from college) *

◯ Yes

◯ No

◯ Unsure

2. Have you already graduated from college/university? *

◯ Yes, I have graduated. (at least one degree)

◯ No, I did not graduate.

◯ I am still enrolled.

3. Have/did you face(d) challenges while being enrolled in college/university? *

◯ Yes

◯ No

4. What challenges have/did you face(d) while being in college/university? *

☐ Financial

☐ Study/work habits

☐ Difficult coursework

☐ Emotional

☐ Lack of motivation/Focus

☐ Personal/Family

☐ Housing

☐ Other

5. Do you feel that you were prepared to face those challenges? *

◯ Yes

◯ No

6. If yes, what factors assisted in preparing you for these challenges?

- ☐ Personal experience
- ☐ Guidance from family members
- ☐ Guidance from other trusted friends/acquaintances
- ☐ Research
- ☐ Other

7. Have/did these challenges made it more difficult for you to be successful in college/university? *

- ○ Yes
- ○ No

8. Choose the range that reflects your current(if still enrolled) or final (if graduated) GPA. *

- ○ 0- 1.0
- ○ 1.1- 2.0
- ○ 2.1-3.0
- ○ 3.0-4.0