

The Placebo Prestige Effect on Students' Perceptions of Universities

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ABSTRACT

The placebo effect is the belief that a product is giving someone effective results, but in reality, it is not producing any results. However, in this paper, the placebo effect is related to prestige and how a university with a stronger reputation/brand seems to be more prestigious than other universities. To test this effect, I created a survey that has junior and senior high school students choose what criteria they would want in a university. That criterion was taken into account and in the last question, participants had to choose between two universities, one more prestigious than the other, and explain their choice. The data showed that prestige/familiarity was not as important a factor as I hypothesized. Instead, location and school size were the deciding factors for students.

Literature Review

A study was conducted involving two high schools in New York. The first, Stuyvesant High School, ranked very high in the World Report rankings (Abdulkadiroglu et al, 2014). The second was the Bronx School of Science, which also ranks high on this list, but does not have the same reputation as Stuyvesant (Abdulkadiroglu et al, 2014). To New York high schoolers, Stuyvesant is the most prestigious and therefore the best high school to go to. Parents spend thousands of dollars, not on tuition, however, because the school is public and is therefore free to attend (Abdulkadiroglu et al, 2014). Instead, they are paying for tutors and study materials for the entrance exam because 30,000 students apply to Stuyvesant and only 2.7% are accepted (Abdulkadiroglu et al, 2014). However, when researchers ran an experiment testing how effective Stuyvesant was at creating successful students compared to the Bronx School of Science, they found that there was no significant difference in the students' ACT, SAT, and AP test scores (Abdulkadiroglu et al, 2014). Furthermore, the researchers followed some students throughout their college attendance and into the first few years of their careers. The researchers found that there was not a significant difference between the level of education achieved and the starting salary of the students' first jobs (Abdulkadiroglu et al, 2014). This study suggests that just because a school brands itself as more prestigious and elite than other schools, does not mean that it is. Becoming more aware of how the perception of universities can be misleading, high school students can learn what university will best suit them and their academic goals. Additionally, understanding the prestige bias/placebo effect may help students to feel less pressure to go to an "elite" school.

My research intends to better understand the prestige effect on school choice. The experiment in my research looks into how some universities brand themselves as more "prestigious" and "elite." Then, my research will observe how the university branding might lead high schoolers to have misleading perceptions of these universities or discount universities that are equally capable of meeting the students' needs.

Relationship Between the Placebo Effect and Branding

Normally used in a medical context, this research will instead define placebo as “a beneficial effect produced by a placebo belief of prestige which cannot be attributed to the properties of the placebo itself, and must therefore be due to the patient's trust in that belief” (Esteky and Kalaiti, 2021). This is also known as the prestige effect, which occurs when someone believes that a product has a higher quality because the brand is more prestigious or recognized. In a school context, the prestige effect is when students think they will get a better education because of the prestigious reputation of the school (Joseph et al, 2012).

Brands promote themselves differently in order to stand out from each other (Rosenthal, 1968). In this case, universities use many factors, like national rankings, cost, and reputation in order to attract students to their schools. These factors can create stronger brand images for some universities when compared to others (Rosenthal, 1968). Because some universities develop a stronger brand image, they are seen as having a higher educational value and become more prestigious (Rosenthal, 1968). Examples of this are any of the Ivy League schools including Brown University, Columbia University, Cornell University, Dartmouth College, Harvard University, the University of Pennsylvania, Princeton University, and Yale University. The Ivy League schools have gained a reputation as having very low admissions rates, strong academics, and promising careers for their graduates. However, as many studies show, graduates from Ivy League schools do not significantly outperform graduates from other respected universities (Abdulkadiroglu et al, 2014). This belief in prestige creates a placebo effect (Finch, 2013).

Creating a Strong Brand Image with Students' Criteria

During the college decision process, students develop a set of criteria for the universities they are looking at (Vaughn et al, 1978). A study by Ronald Vaughn concluded that the most important criteria students' have when picking a university are: the quality of education received, the quality of the faculty, the reputation of the business program, and the academic reputation of the university (Vaughn et al, 1978). Similarly, Thomas Bowers' found that the academic reputation of the university and the reputation of the specific school the students were currently attending were the most important factors students had when choosing a university (Bowers et al, 1972). The study by Bowers also concluded that parents and students agreed most strongly with the university's academic reputation being the most important factor and advice from others and geography being the least important (Bowers et al, 1972). However, a surprising find was that the availability of scholarships and the cost of the university was ranked very low on the list, which is in contrast to the study by Matthew Joseph which will be mentioned in the next section (Bowers et al, 1972).

In contrast, a study performed by Rehnuma Ali-Choudhury interviewed university marketing directors on how they promote their university and try to attract students (Ali-Choudhury et al, 2008). The marketing directors cited ambiance and creating a welcoming atmosphere as the most important factors when building their brand (Ali-Choudhury et al, 2008). This finding contrasts with students' opinions because it fails to acknowledge the academic reputation of the university, which was a factor ranked highly by students (Ali-Choudhury et al, 2008). This shows that universities are influencing students based on their prestige, and it leads researchers to question how students began to perceive universities as prestigious.

Placebo Effect of Perceived Value vs. Real Value: An important effect created by the placebo effect and its relation to branding is the idea of perceived value versus real value (Finch, 2013). This theory holds that because some brands create a stronger brand image, what they produce is thought to have a higher quality than the other products in that field (Sawinski, 1986). This perception, however, appears to be based largely on the beliefs associated with that brand and does not factor in the actual quality of the product (Ayangil, 2009).

An important study that tested the idea of perceived value versus actual value with universities is by Mathew Joseph, Eileen Wall Mullen, and Deborah Spake (Joseph et al, 2012). In their experiment, they surveyed the college freshmen of two universities, one a more “prestigious” private school, and the other a public school, on twenty-four different criteria for picking a university (Joseph et al, 2012). The students who attended the public university answered that they looked at cost, education value, and availability for scholarships the most when picking their university (Joseph et al, 2012). The private school students, on the other hand, answered that they focused more on the reputation of the school and cared about how prestigious the university seemed (Joseph et al, 2012). This study shows that the perceived value of the private university dominated the criteria for private university students and caused them to pay more money for an education that may not benefit them more than the public university’s.

Real Results from the Placebo Effect: It is also important to note that, in some cases, the placebo effect of a better education has provided real results. In a study by Sina Esteky and S. H. Kalati, who tested whether students would perform better if they were told a program was made by Harvard programmers versus community college students, found that students who were told that the program was made by Harvard programmers had a significantly higher score than the other groups of students (Esteky and Kalaiti, 2021). In the experiment, three groups of high school students were formed. The students were asked to play a memory and attention game by Lumosity, a company that makes brain games (Esteky and Kalaiti, 2021). Here again, the two groups were told opposing information while the third group was not told anything about who made the game (Esteky and Kalaiti, 2021). After a week of practicing with this game, the students did the final test where they played this game and saw how many levels they could go, and they also took a standardized test (Esteky and Kalaiti, 2021). The results showed that the students who were told the game was made by Harvard students outperformed the other groups by significant amounts (Esteky and Kalaiti, 2021). This shows that the placebo effect can have real results within this topic. However, this result does not happen often and would not make for a reliable hypothesis that the perceptions that come from stronger brand images are always effective (Chapleo, 2005).

High School Students’ Perceptions of Universities: Currently, studies that look at how criteria and the branding of universities affect the public’s perceptions focus on college students and how successful they are during and after college. The focus on current college students allows researchers to conduct experiments that focus on criteria and how a university influenced those students because the students have already chosen that university. By picking students who have already chosen their university, it is easier for researchers to get direct opinions that the students have on how they were influenced by that university because they can reflect back on their decision process. However, by looking at high school students instead of college students, the experiment would gather data directly from the middle of the decision process, rather than at its culmination. This is important because the answers high school students will provide will give an insight into the thought process and direct perceptions they have during the decision-making process.

It is also very common in studies today to look at the success students have while they are in college and in the first few years after they graduate. David Finch tested the competitive advantage gained by students who attended “more elite” universities and how hiring managers created perceptions based on the reputation of the university (Finch, 2013). The study found that a university’s brand and reputation were correlated to its graduates’ advantage over other graduates. Specifically, graduates from medical-doctoral schools were more likely to be hired over primarily undergraduate universities and career colleges (Finch, 2013). They were also more likely to receive a higher starting salary (Finch, 2013).

Because this study focused on the direct success of graduates, it did not thoroughly address the perceptions that come with universities and how they brand themselves and their reputation. By specifically looking at the perceptions students have when looking at universities, I will find what students perceive their success will be and how that factors into how universities promote themselves and create their brand image.

Student Perception and Prestige: The way that universities brand themselves creates a brand image, and depending on how they promote their brand, some universities create stronger brand images than others (Rosenthal, 1968). A stronger brand image creates a perception that these universities with stronger brand images are more “elite” and more “prestigious” than their competitors (Rosenthal, 1968). Some of these branding and promotional factors claim to create a welcoming environment and an increased academic value gained from the university (Vaughn et al, 1978). Criteria that students have for their colleges may also play into these perceptions, especially factors like reputation and cultural or social environment (Vaughn et al, 1978). These misconceptions form a placebo effect related to how schools advertise themselves and use these perceptions to their advantage. Specifically, high school students are susceptible to misleading branding and advertising during their college decision process. The research in this study will ask, how does the placebo effect of prestige affect how private, high school students perceive universities?

Methods

The purpose of this research is to explore and explain how the placebo effect of the prestige of universities affects students’ perceptions. A dynamic survey asked questions to establish the criteria students prefer in the college selection process, like location, tuition, cost, etc (Joseph and Mullen, 2012). To measure the impact of the prestige effect, the two schools shown in the last question included all of the criteria the student selected. The difference between the colleges shown is that one had a higher rank than the other. The rankings came from *U.S. News & World Report*, a widely cited and publicly influential website that has extensive data on college and university rankings. However, the school with the lower ranking was considered well-known and “prestigious,” according to *U.S. News*. Being shown the rank, students chose between the two colleges (a well-known “prestigious” school or a higher ranked “lesser known” school). The survey saw if they choose the more “prestigious” school, which they were likely more familiar with rather than critically thinking about what the two schools offer. The survey was sent out to juniors and seniors at five different public and private high schools in the Salt Lake Valley. However, only one school participated. Therefore, the 17 participants come from one, private, Catholic high school.

Consent and Risk Assessment

Students were asked to fill out a consent form requiring a guardian's signature. Of the schools I sent my survey to, the public schools said it was too difficult to send out and I received no results from the private schools. The school that was willing to participate is a private, Catholic high school in the Salt Lake Valley, and 50-75 consent forms were sent out to all the juniors and seniors. However, only 17 students participated in the survey. The form includes a short description of the study, and it emphasizes that the information provided by the students is confidential and anonymous. Once the survey was sent out, students had 2-3 weeks to complete it. The survey needed to be filled out one time per student.

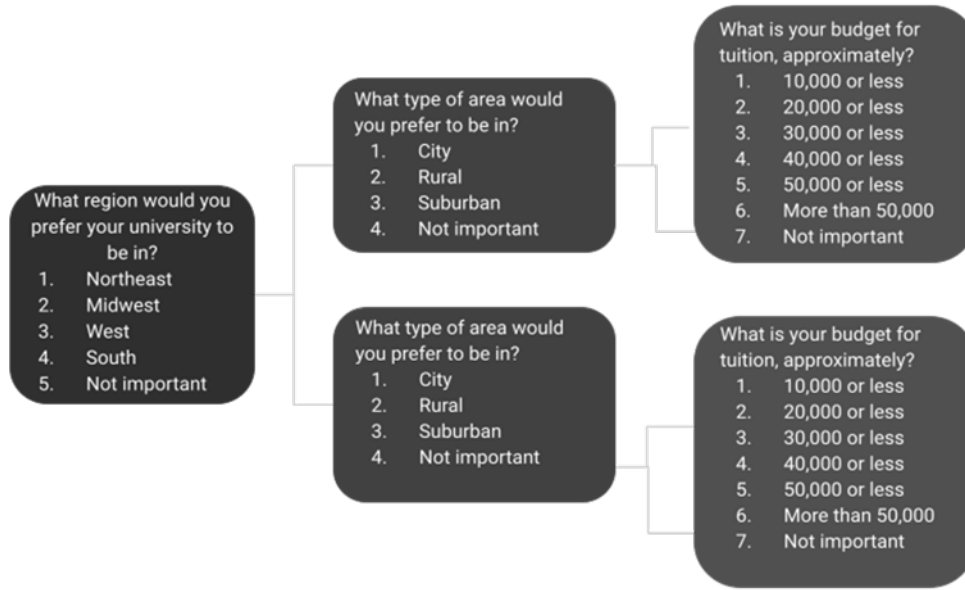


Figure 1. This is the flow of the first few survey questions. As a participant moves through the survey, their answers will be collected together to set up the free response question.

Procedure

The demographic questions in the survey rule out bias and help control biased answers (Finch, 2013). The main questions of the surveys encompassed different criteria students use to choose a college/university (Joseph and Mullen, 2012). The students were asked to choose the criteria they are looking for in a university (Joseph and Mullen, 2012). As the students moved through the survey, they were asked to decide how important a certain criterion is, to create a basis for what kind of school they want to attend (this flow can be seen in Figure 1; Lewin, 2006).

Northeast	South
<ul style="list-style-type: none"> - University of Pennsylvania (ranked 7th) vs Brown (ranked 13) - University of Rochester (ranked 36th) vs University of Syracuse (ranked 62) - James Madison University (ranked 151) vs Binghamton University (ranked 83) 	<ul style="list-style-type: none"> - University of Florida (ranked 35th) vs University of North Carolina at Chapel Hill (ranked 29th) - Austin College (ranked 107) vs Rice University (ranked 15th) - Florida Institute of Technology (202 in region) vs Rollins College (ranked 1st in region)
West	Midwest
<ul style="list-style-type: none"> - University of California at Berkeley (ranked 20th) vs California Institute of Technology (ranked 9th) - Pepperdine University (ranked 55th) vs University of California at Davis (ranked 35th) - Gonzaga University (ranked 83rd) vs University of Washington (ranked 55th) 	<ul style="list-style-type: none"> - Northwestern University (ranked 10th) vs University of Chicago (ranked 6th) - Miami University at Oxford (ranked 105th) vs The Ohio State University (ranked 49th) - Cornell College (ranked 100th) vs Macalester College (ranked 27th)

Figure 2. These are some schools that participants could’ve gotten for their free response question. The school ranked lower is the “more prestigious” school, and the higher ranked is the “less prestigious” but “better school.

At the end of the survey, all of their criteria were combined and two schools appeared (examples of which are shown in Figure 2) where the student chose which university they wanted to attend. The two universities that appeared had all of the criteria and traits that the student picked. However, one of the universities had a more prestigious and familiar reputation than the other (Finch, 2013). The less known/less prestigious school was higher ranked, nationally, making it a better quality school than the other. When the students picked which they want to attend more, they gave a free response as to why they picked that school. By using a dynamic, free-response survey, the data had quantitative and qualitative aspects that further explained why a student responded the way they did, instead of just having one of the survey aspects (Joseph and Mullen, 2012).

Confounding Variables: Some students may have had some biases based on where their parents attended college, their socioeconomic status, the resources available for private school students that could be different than public school resources, etc. Multiple questions in the survey gathered the students’ demographic information (Marginson et al, 2004). Some of these questions asked about socioeconomic status, ethnicity, parent’s level of education, etc (Figure 3; Marginson et al, 2004). Gathering this information will help identify any bias created by these aforementioned unique factors.

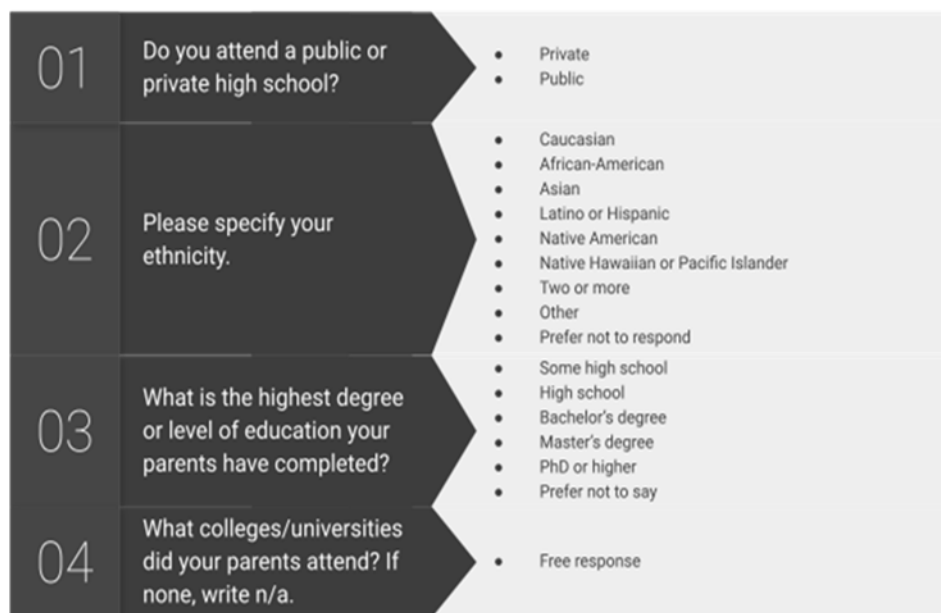


Figure 3. These are some of the demographic questions that the participants answered. They were used to help catch for bias for when the participant answered the free response question.

Strategy of Analysis: After all of the surveys were completed, the free response question and the university each student preferred were analyzed (Tatar, 1995). If a student chose the “more prestigious” and more familiar school, then they (most likely) experienced the prestige effect. If the student chose the school they are less familiar with but has a higher ranking, then they were not likely influenced by the prestige effect. The free-response answer provided insight into how each student selected their preferred university.

Percentages and Statistics: After the data was collected, the number of students who chose the “prestigious” or less prestigious schools were converted into percentages to show which had the majority of students. Then, I calculated the margin of error which provides a numerical measure of the uncertainty of my survey and polls. (Good Calculators, 2015).

Results

By doing this experiment, I tested whether students would choose a more “prestigious” or more familiar university/college instead of a higher-ranking one. A total of 17 students took a survey that asked them a series of demographic questions and then to choose what criteria they were looking for in a university/college. Then, the last question asked them to choose between two schools that fit their criteria. However, one school was more familiar/prestigious but lower ranked, and the other school was higher ranked but less known and less prestigious.

Statistics: Margin of Error

To calculate the margin of error, I first set my confidence level at 95%. This gave me a critical value of 1.96. Then I calculated the standard error of my sample which is represented by the equation $\sqrt{\frac{p(1-p)}{n}}$, where p is the number of students who chose the “more prestigious/familiar” university and n is the total number of participants. My “p-value” is $\frac{11}{17}$ which equals 0.647, and my “n-value” equals 17. Therefore, my equation was: $\sqrt{\frac{0.647(1-0.647)}{17}}$ which equals 0.116. Therefore, my margin of error is calculated by multiplying the critical value and the standard error value which is, $1.96 \times 0.116 \times 100$ which equals $\pm 22.718\%$.

Using the margin of error, from a sample of 17 students, 61.5% ($\pm 22.718\%$) chose the “more prestigious/familiar” schools, and 38.5% ($\pm 22.718\%$) chose the less familiar but higher ranking school.

Prestigious vs. Non-Prestigious School Choice

Figure 4, below, shows the data from the free response question of the survey. The question asked the students to choose between two schools that fit the criteria they chose. The graph shows that 11/17 students, or 64.7% ($\pm 22.718\%$), chose the more “prestigious” and more familiar university/college, and 6/17 students, or 35.3% ($\pm 22.718\%$), chose the less “prestigious/familiar” one.

Number of Students who Chose Prestigious vs. Non Prestigious

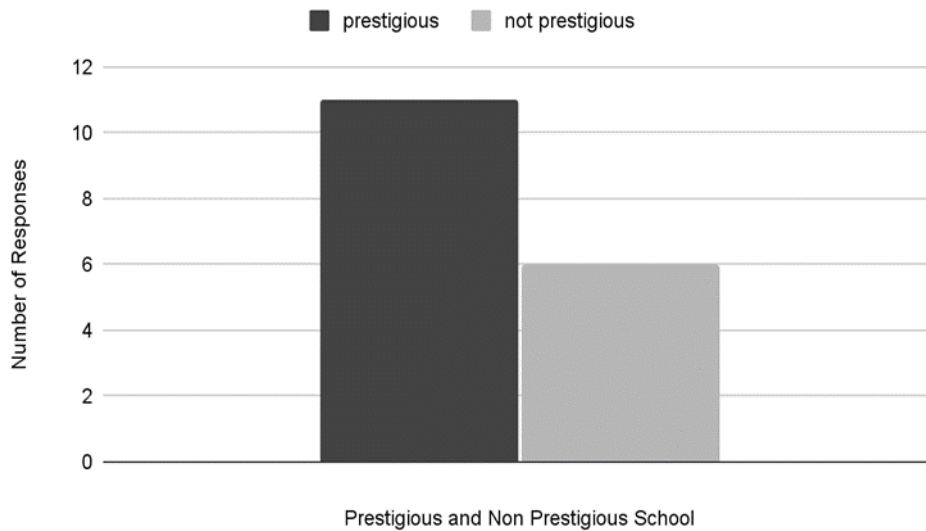


Figure 4. 11/17 students chose the “more prestigious” school and 6/17 students chose the higher ranking but “less prestigious” school.

Free Response Analysis: Figure 5 shows some of the direct answers to the last question from the participants. For the last question, three students chose their school off on familiarity saying it was their “dream school” or a school that they had heard of before. Out of the other 14 students, 10 of them, 58.8% ($\pm 22.718\%$), chose their school because of the enrollment size. The figure shows that no matter whether the school was “more prestigious” or more familiar, the participants cared more about class sizes and student populations.

Response	School Choice	Reason
01	Pepperdine University (prestigious)	• “Smaller class sizes”
02	California Institute of Technology (non prestigious)	• “Because it is a smaller school”
03	James Madison College (non prestigious)	• “Because it is larger”
04	Gonzaga University (prestigious)	• “Because it has less people”
05	Hawaii Pacific University (non prestigious)	• “Because of its size”
06	University of California at Berkeley (prestigious)	• “Larger enrollment size”
07	University of Rochester (prestigious)	• “I prefer the student population of Rochester.”

Figure 5. Seven of the participants answered that they chose their school based on its student population or class sizes.

Other Important Factors: As seen in Figure 6, below, 82.4% ($\pm 22.718\%$) of the participants preferred the West over any other region in the United States. This is an interesting factor because many “prestigious” and “familiar” schools are located in the Northeast. There are also some in the West, but having all of the students choose the West is a notable factor.

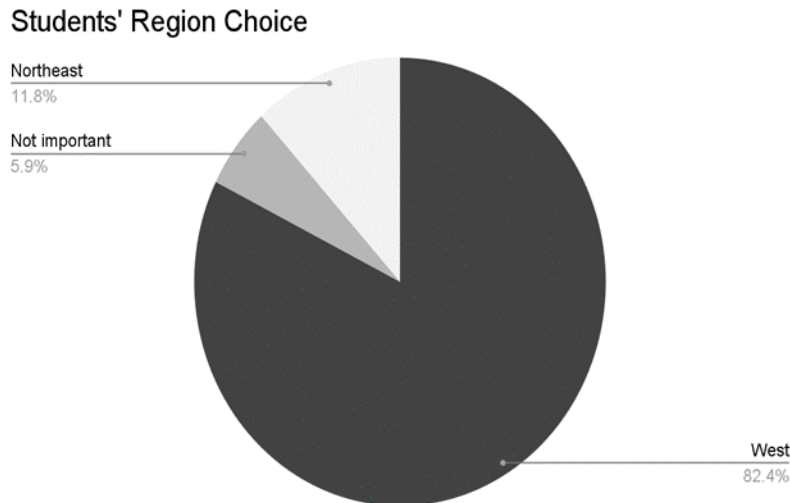


Figure 6. Participants Region Choice

Discussion

Overall, my hypothesis that prestige is an influential decision factor for students choosing a college/university was not supported. Only 17.6% ($\pm 22.718\%$) of the students chose their schools based on familiarity or prestige (Figure 4). Figure 5 shows that students had a much lower value when taking prestige or familiarity into account when choosing a university. Based on the data shown and discussed above, prestige is not an important factor for high school students choosing a university. Instead, my survey analysis suggests that class sizes and location are important factors in selecting a university.

From my data, 58.8% ($\pm 22.718\%$) of students chose universities based on enrollment size or class sizes, while only 17.6% ($\pm 22.718\%$) chose them based on prestige and reputation (Figure 5). These findings concur with similar research by Wut and associates (2022). Their question observed how a university’s reputation compared to other decision factors such as location, facilities and services, scholarship availability, and more (Wut et al, 2022). Wut and associates asked around 700 students about each decision factor individually, and they asked about each factor in relation to each other (Wut et al, 2022). When the researchers asked about reputation by itself, 24.845/100 students said it was a “very good” decision factor when looking at universities (Wut et al, 2022). However, when reputation was compared to the other factors, 15.274/100 students said it was a “very good” factor (Wut et al, 2022). The decrease shows that reputation or “prestige” is a strong deciding factor alone, but it falls behind when compared to other factors. My study also shows that when prestige and

familiarity of a university were looked at in general, students did not value them. Instead, they chose other factors like enrollment size and location.

Furthermore, results showed that students may have chosen their university based on their background. It is likely that it makes students more comfortable to go somewhere similar to where they have lived. A research paper by David Hossler and his associates (1992) explored how family and high school experiences influenced students' college choices. They found that parent expectations had the strongest influence on a student's decision (Hossler et al, 1992). Similarly, a study looked at how parental encouragement influenced student decisions in college (Conklin and Dailey, 1981). They found that students with both parents giving strong encouragement towards college had a probability of 0.764 of going to a 4-year college (Conklin and Dailey, 1981). Students with both parents giving negative responses about going to college had a probability of 0.108 of going to a 4-year college and a probability of 0.614 of not going to college (Conklin and Dailey, 1981). These results show that parental encouragement and family support are strong factors in college decision-making for students. When looking at my data, 82.4% ($\pm 22.718\%$) of students chose to attend college in the West. Then, looking at what schools their parents attended, of the students who wanted to go to the West, 78.5% of those students' parents attended schools in the West. Likewise, the one student who chose to go to the Northeast had parents who attended a school in the Northeast. This shows that the students could be influenced by their parents' school location. Another finding from my research that supports this claim is that 82.3% of students wanted to achieve the same degree level as their parents, which indicates that parental influence could influence the student's decisions about their academic pursuits in college.

A limitation of these claims, however, is that my sample size was small and limited to a very specific population. The results did not fully represent all juniors and seniors. Also, since the participants were from a Catholic, private school, the data is only representative of that population and not of high school students in general. The results of the study did not apply to a majority, which could make them less significant. Also, without data about parental influence, there is no specific data connecting the students' choices with parents.

Based on my results and the results of similar research, further research about how class size affects a student's choice in a college/university should be explored. Further research into the topic showed that students who grew up in small class sizes or in smaller schools tend to prefer that later in life and vice versa (Fredrickson et al, 2013). Additionally, research suggests that if the education factors like location and class size are the same for a student as they grow up, the student is most likely to pursue those same factors in college because it is what they are used to (Browne et al, 2017). This could also help explain why most of the participants in this study chose to go to school in the West because Utah is located in the West. Because the private, Catholic school was the base of this study and has small class sizes, it could account for the reason students wanted smaller class sizes/student populations in their school choice. Overall, further research and questions into how educational factors of a student's background affect their school choice could find meaningful results about what leads a student to choose a particular college/university.

Limitations

This study had a very small sample size and targeted a specific population of people. This means that the results were not fully representative of the juniors and seniors of the selected high school. Also, since the participants were from a Catholic, private school, the data is only representative of that population and not of high school students in general. This limits the results of the study to apply to a majority which could make them less significant.

Conclusion

Surprisingly, students did not consider prestige and familiarity as heavily as size and location when choosing a university. Although there was a small sample size, the results show a need for further research. A repeat study with a larger sample size and a refigured focus could provide more conclusive results about the role of prestige in students' college decisions. However, further research should be done to investigate the role of parental influence and student background on students' decisions.

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