

Team No. 242
Track 2 Modeling
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Analyzing the Effect of COVID-19 On The College Admission Rates of 18 US Institutions

Link to Github repository: <https://github.com/ncarlson23/stanford-datathon-242>

Written Submission:

Background

As the COVID-19 pandemic continues to persist, the college admissions landscape has begun to shift. Most notably, colleges and universities across the country have decided to allow students to apply without standardized test scores, a metric that admissions officers at selective schools have long relied on. For those students applying to college during the COVID-19 pandemic, applications may be missing not only SAT and ACT scores, but also 1-2 semesters of grades, since schools switched to pass/fail grading as a result of shifting to an online modality, or closing altogether.

The College Board has had to modify SAT and AP test administration while many colleges have introduced various policies to make sure that students are evaluated with the COVID-19 crisis in mind. The College Board canceled the administration of the March, May, and June 2020 SAT exams. As a result of these cancellations, colleges have begun to adapt accordingly by changing their requirements. The implementation of social distancing also impacted end of year exams as well. The College Board announced the development of 45-minute online free-response exams for each AP course, rather than the usual 3-hour in person written exam.

Method & Data

In this report, we explore the impact of COVID-19 on the rates of college admission for 18 distinct colleges/universities across the United States by examining admissions rate data from both the 2019 (pre-pandemic) and 2020 application seasons. This report includes the 2019 and 2020 admission rates of Harvard University, Princeton University, Columbia University, Yale University, Brown University, Massachusetts Institute of Technology, Duke University, University of Pennsylvania, Bowdoin College, Dartmouth College, Johns Hopkins University, Swarthmore College, Northwestern University, Vanderbilt University, Colby College, Barnard College, and Amherst College. This data can be found inside of the csv file located within the Github repository referenced above.

We used Python to generate a grouped bar graph that compares the admission rates from 2019 to the admission rates of 2020 for these 17 institutions. We utilized several Python libraries, including Matplotlib and numpy. The program reads in the specified csv file containing the admissions rate data, parses the data, configures the plot, and then formats the data on the plot accordingly.

Findings

It is important to note the following observations from the grouped bar graph (Fig. 1):

- Roughly 56% of the dataset had higher admission rates in 2020 than 2019. These data points include Harvard University, Columbia University, Yale University, Brown University, Massachusetts Institute of Technology, University of Pennsylvania, Dartmouth College, Johns Hopkins University, Swarthmore College, and Rice University.
- Roughly 33% of the dataset had higher admission rates in 2019 than 2020. These data points include Princeton University, Bowdoin College, Vanderbilt University, Colby College, Barnard College, and Amherst University.
- Roughly 11% of the dataset had kept constant admission rates in 2019 and 2020. These data points include Duke University and Northwestern University.
- Of the 18 schools accounted for in this dataset, Rice University appeared to have the largest increase in admission rate, moving from a 9% admission rate in 2019 to a 10% admission rate in 2020.
- Of the 18 schools accounted for in this dataset, Barnard College appeared to have the largest decrease in admission rate, moving from a 13.7% admission rate in 2019 to a 10.9% admission rate in 2020.

Most recent data from the National Student Clearing House, which analyzes data from 3.6 million students from 629 colleges, indicates that undergraduate enrollment is down by 2.5% in 2020¹. Perhaps this can be attributed to the fact that many students have opted to endure the pandemic by taking a gap year. Since it appears that colleges received a smaller number of applicants during the 2020 application season, it would make sense that many schools would increase their admission rates to compensate for the smaller number of applicants. This would justify the trends observed in this dataset, in which more than half of the data had higher admission rates in 2020 than in 2019.

Of these 18 schools, 7 of the 8 Ivy League institutions are represented. These schools are Harvard University, Columbia University, Yale University, Brown University, University of Pennsylvania, Dartmouth College, and Princeton University. All of these institutions appeared to have higher admission rates in 2020 than in 2019, except for Princeton University, which had a higher admission rate in 2019 than in 2020. Columbia appeared to have the largest increase in admission rate out of the Ivy League schools represented in this dataset, increasing from a 5.1% rate in 2019 to a 6.1% rate in 2020.

Additional Considerations:

It is interesting to take into account the endowments of each of these 18 institutions. According to data used in a column by the New York Times columnist N Kristof, all of the institutions in this dataset are within the 171 institutions in the United States with the largest endowments². Princeton has the largest endowment out of these 171 institutions. The endowment, which refers to the wealth of a university, will influence a student's cost, because wealthier universities/colleges (institutions with large endowments) will be able to offer larger tuition discounts to lower/middle income students compared to those schools with much less endowment wealth. Thus, a college's endowment can influence its commitment to economic diversity. As a result of higher COVID-19 expenses, college endowments have been under immense stress. The pandemic "...forced colleges and universities to rapidly close their campuses and

¹ <https://nscresearchcenter.org/stay-informed/>

² <https://www.nytimes.com/interactive/2017/05/25/sunday-review/opinion-pell-table.html>

implement a wholesale shift to online instruction, causing massive disruption and enormous unforeseen expenses and revenue losses”³. As they planned for and began the 2020-2021 academic year, colleges and universities spent millions of dollars to purchase personal protection equipment and cleaning supplies, to modify facilities, enforce social distancing, and establish testing protocols. Perhaps higher admission rates in 2020 can be attributed to institutions’ incentive to regain funds lost from spending portions of the endowment through collection of tuition.

An additional consideration for the plummeting admission rates that characterized this past college application season is the outlier of the test-optional application. In the novel occurrence this past year in which colleges made SAT/ACT test scores optional, top schools have seen a sudden surge in applications. For this past application cycle, for example, UPenn reported that “26 percents of its regular-decision applicants [...] chose not to submit test scores.”⁴ Schools across the nation are experiencing an increase in applicants vying for a decreased number of spots for acceptance. There were already a decreased number of spots available initially, accounting for the number of gap-year students who had deferred admissions for a year back in the 2020 college admission cycle. Interestingly, there has also been an increase in early applicants, for early decisions (in which admitted applicants are committed to attend that school).

There are important caveats to consider when looking at the data for prestigious schools such as the Ivy Leagues, as they are not representative of the whole picture in college admissions. This past year, “With the exception of large public schools and the country’s most elite private colleges, many colleges are seeing a decrease in applications.”⁵ Truthfully, the majority of applicants to college are not applying to prestigious schools. In fact, the number of students applying to undergraduate admissions using the Common App fell for the first time this past fall, and fewer students have filed for the FAFSA this past year as well. The FAFSA is an important part of financing a higher education, particularly for low-income students, and the decline might be attributed to the occurrence that undergraduates are choosing to postpone college altogether rather than start college online during the COVID-19 pandemic.

Conclusion

Admission rates of these past application cycles during the COVID-19 pandemic reflect considerations of applicants and future students in the higher education space. With inequities highlighted even more so in this past year’s pandemic, a deeper understanding of the decrease in college enrollment and admissions offers insight into solutions for making higher education more attainable and accessible for future applicants.

³ <https://www.acenet.edu/Documents/Understanding-College-and-University-Endowments.pdf>

⁴ <https://www.washingtonpost.com/education/2021/04/07/admit-rates-ivy-league-pandemic-test-optional/>

⁵ <https://www.cnbc.com/2020/12/29/covid-is-making-it-harder-to-get-into-a-top-college.html>

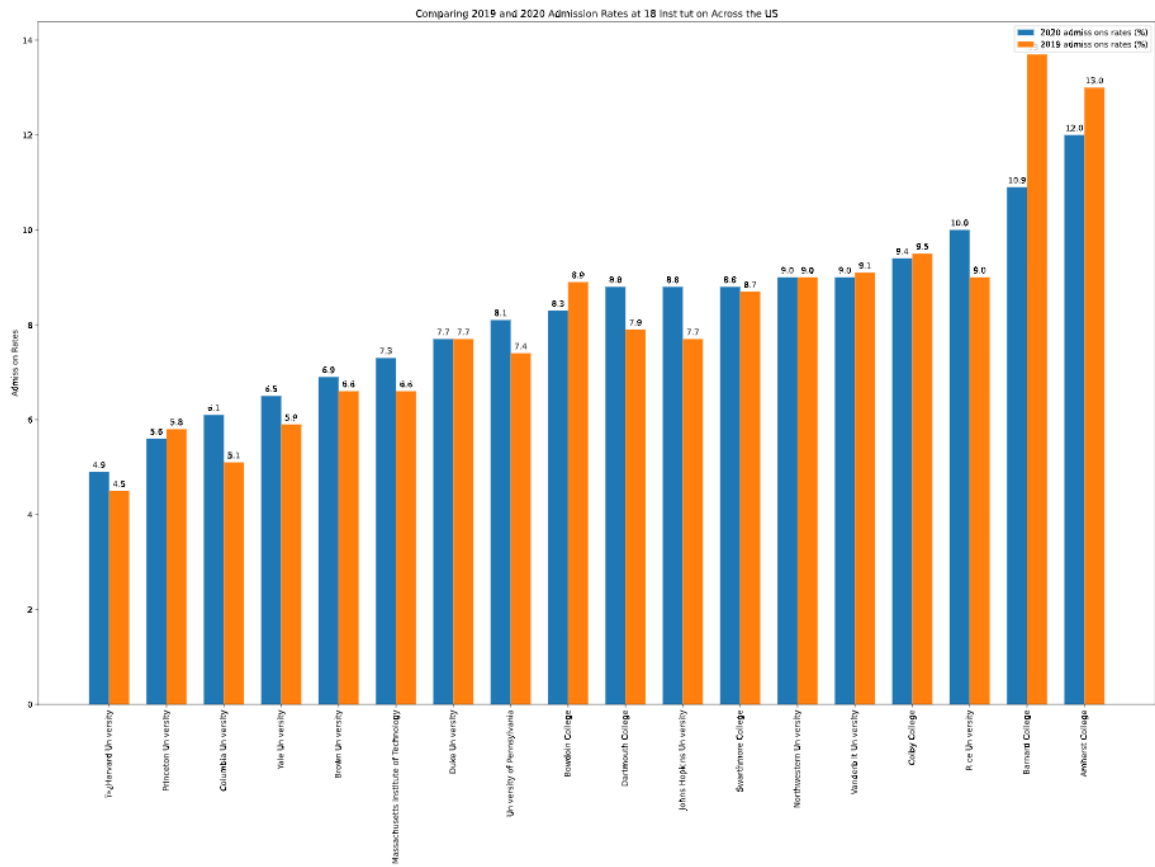


Figure 1: Comparing 2019 and 2020 Admissions Rates at 18 Institutions Across the US