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Quality Disclosure, Limited Attention, and the Availability Heuristic: The Influence of College Rankings on Student Demand

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Abstract

We rank everything ranging from books (New York Times) to corporations (Fortune 500) to basketball teams (NCAA) to dry cleaners (Yelp.com). According to one theory, rankings influence consumer behavior because they serve as a type of quality disclosure that reduces risk in transactions. However, other mechanisms may also be at play. A growing body of literature suggests that limited attention affects market outcomes. In other words, consumers do not use all available information in order to make decisions but rather focus on the most salient of the available information. In addition, consumers may purchase goods at the top of a ranked list due to the availability heuristic, which suggests that what is more easily recalled is also perceived to be more important. In this paper, I examine the effect of U.S. News and World Report's annual college rankings on student demand for national universities ranked in the top 50. More specifically, I examine the three previously discussed mechanisms through which rankings may influence consumer behavior - quality disclosure, limited attention, and the availability heuristic.

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5.1 Introduction

We rank everything ranging from books (*New York Times*) to corporations (*Fortune 500*) to basketball teams (*NCAA*) to dry cleaners (*Yelp.com*). Not only can rankings influence quick transactions such as choosing a restaurant for dinner (*Zagat*) or buying a textbook (*Amazon.com*), they can also motivate long-term commitments such as enrolling in a university program (*U.S. News and World Report*). Therefore, it is important to understand the mechanisms through which rankings influence consumer behavior.[1]

One theory is that rankings influence consumer behavior because they serve as a type of *quality disclosure* that reduces risk in transactions (Roselius 1971). As Dranove and Jin (2010) state, this type of disclosure serves several purposes. First, it disseminates information about product quality when other measures of quality are not adequate. Additionally, since rankings are generally produced by a third-party, they are seen to be less biased and more trustworthy than information provided first-hand by manufacturers or service providers. Furthermore, rankings standardize information so that quality data can be easily compared across sellers.

However, other mechanisms may also be at play. A growing body of literature suggests that *limited attention* affects market outcomes. In other words, consumers do not use all available information in order to make decisions but rather focus on the most salient of the available information (DellaVigna and Pollet, 2009; Falkinger, 2008; Lacetera et al., 2011; Pope, 2009). In data with rankings, the most salient indicator of quality is rank. As such, it may influence consumer behavior even though other quality data is disclosed alongside it.

In addition, consumers may purchase goods at the top of a ranked list due to the *availability heuristic*, which suggests that what is more easily recalled is also perceived to be more important. For example, Einav and Yariv (2006) note that reference lists are generally alphabetized by authors' last names and that attention may be focused on the citations at the top of the list. They then notice that this phenomenon may drive an "alphabetical discrimination," in which faculty with last names starting with letters closer to the beginning of the alphabet are more likely to receive tenure at top ten economics departments, more likely to become fellows of the Econometric Society, and even more likely to receive the Clark Medal and the Nobel Prize. By contrast, they find that alphabetical placement has no effect on success in the field of psychology, where authors' names are generally listed not alphabetically but rather in order of descending contribution. A similar mechanism may cause consumers to purchase goods at the top of ranked lists more frequently.

In this paper, I examine the effect of *U.S. News and World Report*'s annual college rankings on student demand for national universities ranked in the top 50. More specifically, I examine the

[1] For background on the general welfare effects of rankings, see Anderson and Renault (2009), Bouton et al. (2011), Gavazza and Lizzeri (2007), and Morris and Shin (2002).

three previously discussed mechanisms through which rankings may influence consumer behavior: quality disclosure, limited attention, and the availability heuristic. I begin with a review of current literature in Section 2, followed by a brief economic analysis in Section 3 and a description of the data in Section 4. I present two econometric models in Section 5, my results in Section 6, and a discussion in Section 7.

5.2 Literature Review

The annual ranking of colleges released by *U.S. News and World Report* (USNWR), a special issue entitled *America's Best Colleges*, is among the most influential of college rankings. Machung (1998) cites that one-third of parents of high achieving college-bound seniors believe USNWR rankings to be a reliable source and two-thirds found them to be "very helpful" in evaluating college quality. McDonough et al. (1998) uses data from 221,897 first-time, full-time freshmen from 432 four-year colleges and universities in the U.S. and found that 29.6% of students cite the rankings as somewhat important and 10.5% rate them as very important in their college choices.

Despite the popularity of college rankings among prospective undergraduates, however, only a few empirically rigorous studies have been conducted to estimate the impact of rankings on prospective student behavior.[2] Monks and Ehrenberg (1999) conducts the first empirical study on the topic by examining a subset of universities from the membership of the Consortium on Financing Higher Education. These institutions included 16 of the top 25 national universities and 13 of the top 25 national liberal arts colleges in the 1998 USNWR rankings and consist solely of private institutions.[3] The panel included 300 observations from 30 institutions across 11 years. They found that a one-rank improvement is associated with a 0.40 percentage point reduction in the acceptance rate, a 0.17 percentage point improvement in the yield (i.e. the the percentage of admitted students who choose to matriculate), and a 2.78 point increase in average SAT score the following year. However, they do not account for the fact that a change in rank may in part reflect a change in quality and do not distinguish between the effects of the two phenomena.

[2]There has been, however, a sizable amount of literature regarding college rankings in general. Carrell, Fullerton, and West (2009), and Marmaros and Sacerdote (2002) focus on the effects of college rankings on the quality of students' educations. Bunzel (2007), Luca and Smith (2012), Martins (2005), and Stake (2006) discuss schools' reactions to USNWR rankings. Bastedo and Bowman (2010a), Bastedo and Bowman (2010b), Baughman and Goldman (1999), Dearden and Lilien (2008), Elsbach and Kramer (1996), Jin and Whalley (2007), and Standifird (2005) examine long-term reputation effects of rankings on educational institutions. Hansmann (1998) and Sauder and Lancaster (2006) look specifically at law school rankings. Sacerdote (2001) looks at peer effects as an explanation for why students pool at top ranked schools.

[3]Schools in the sample included Amherst, Barnard, Brown, Bryn Mawr, Carleton, Columbia, Cornell, Dartmouth, Duke, Georgetown, Harvard, Johns Hopkins, MIT, Mount Holyoke, Northwestern, Oberlin, Pomona, Princeton, Smith, Stanford, Swarthmore, Trinity (CT), University of Chicago, University of Pennsylvania, University of Rochester, Washington University, Wellesley, Wesleyan, Williams, and Yale.

Meredith (2004) builds on the analysis from Monks and Ehrenberg (1999) by expanding the panel to the entire sample of ranked colleges from 1991-2000. The paper finds results that are consistent with the findings by Monks and Ehrenberg and uses methodology that lumps university ranks into quality tiers and focuses on differential effects. Furthermore, the study finds that moving off the first page of rankings has a disproportionately large impact on admissions outcomes and that the effects of USNWR rankings are larger for public schools. Like Monks and Ehrenberg (1999), however, Meredith does not account for the fact that changes in range may be in part due to changes in school quality.

Griffith and Rask (2007) examines the impact of rankings on student-level data from 1995-2004 by using a conditional logit model to determine how attributes of the alternative college choices available to a student impact that student's probability of attending a particular college. They find that for full-tuition students, rank differences in the top 20 colleges are related to a 0.45 percentage point change in the probability of a student attending a college per rank. However, the external validity of their findings is questionable, as the study was only conducted on data from students admitted to Colgate University.

By looking at data from the top 50 national universities from the 1991-2001 editions of USNWR colleges rankings, Luca and Smith (2012) finds that merely having rankings does not have a causal effect on application decisions. Rather, the rankings must be presented in a salient manner. Using a differences-in-differences methodology, Luca and Smith exploit variations in USNWR's bucketing of its rankings and find that rankings do not have a statistically significant effect on student application decisions if the ranks are presented alphabetically rather than in rank order - even if other data on college quality is present.[4] Additionally, by using an instrumental variables approach to control for the underlying quality of school, they find that a one-rank improvement leads to a 2.07% increase in the number of applicants and a 3.44 percentage point decrease in the acceptance rate. They find no statistically significant effect for a school's yield, average SAT score, or percentage of enrolled freshmen who graduated in the top 10% of their high school class.

However, none of these papers attempt to explain the mechanisms through which changes in rank influence student application decisions. As such, in my paper I examine three mechanisms through which rankings may influence student demand - quality disclosure, limited attention, and the availability heuristic.

[4]Before the 1996 edition, USNWR ranked only the top 25 universities (see Figure A2). The next 25 universities were lumped into a single tier and published in alphabetical order (see Figure A3). Beginning with the 1996 edition, USNWR explicitly ranked all top 50 universities (see Figure A4).

5.3 Economic Analysis

Assume that each high school senior who wishes to attend a university in the United States has an application decision that is solely a function of the each school's quality.[5] One source that this high school senior can utilize to make a judgment on school quality is the USNWR college rankings. He or she can utilize the information provided by America's Best Colleges to determine a school's quality in three ways:

1. *Quality disclosure* - The student uses the USNWR publication as an objective source of quality indicators. For this student, utilizing information from USNWR reduces the time spent gathering quality indicators, but the actual ranks provided by USNWR do not contain any additional information.

2. *Limited attention* - The student does not know how to combine the quality indicators published by USNWR, or there is a cost to processing the information. Therefore, the student uses the rankings provided by USNWR as a shortcut in lieu of looking at the underlying quality indicators to determine a school's quality.

3. *Availability heuristic* - The student does not understand how to interpret the rankings or the underlying quality indicators provided by USNWR. However, the student reads the publication, starting at the top of the page and ceasing to read when he or she is no longer interested. For this student, the names at the top of the rankings become more familiar, and the student internalizes more familiar schools to be of higher quality.

In this paper, I empirically measure the extent to which each of these three mechanisms affects student demand for national universities ranked in the top 50 using changes in a school's quality score, rank, and row as provided by UNSWR. The quality score is a linear combination of various quality indicators published as a score out of 100. The rank is an ordinal arrangement of schools by quality score, where the school with the highest quality score is ranked one. The row is the row that a school's information is printed on. Row differs from rank when schools tie in rank. For example, if two schools are ranked one, the schools will be ordered alphabetically and one school will be printed on row one while the other school will be printed on row two. Rank and row differ for 42% of the observations in my dataset. To estimate the effect of quality disclosure, I find the effect of changes in a school's quality score on student demand holding rank and row constant. To estimate

[5]Presumably, students will also care about other factors such as the cost of attendance. However, for the purpose of this analysis, I assume that these other factors do not enter during the student's application decision but rather later during the student's matriculation decision. This is a reasonable assumption considering the uncertainty involved in the financial aid process, where a student does not necessarily know how much he or she will pay for tuition at the time of application.

the effect of limited attention, I find the effect of changes in a school's rank on student demand holding quality score and row constant. To estimate the effect of the availability heuristic, I find the effect of changes in a school's row on student demand holding quality score and rank constant.

To measure student demand, I use the number of applications a school receives in the application cycle following the publication of each edition of USNWR rankings. In addition, I also use several alternative outcome variables: acceptance rate, average SAT score of enrolled freshmen, the proportion of enrolled freshmen who graduated in the top 10 percent of their high school class, and the yield.

5.4 Data

USNWR first published America's Best Colleges in 1983 and has published an edition every year with the exception of 1984.[6] These rankings started as a simple reputation rank voted on by college presidents. Today, however, USNWR has expanded the rankings to factor in 15 indicators of college quality: a peer assessment score, the six-year graduation rate, the freshman retention rate, the proportion of classes with fewer than 20 students, the proportion of classes with 50 or more students, faculty salary, the proportion of professors with the highest degree in their field, the student-faculty ratio, the proportion of faculty who are full time, SAT and ACT scores of enrolled freshmen, the proportion of enrolled freshmen who graduated in the top 10 percent of their high school class, the acceptance rate, average spending per student on educational expenditures, the difference between a school's actual and predicted graduation rate, and the alumni giving rate.[7]

This underlying raw data is self-reported by the colleges in an annual statistical survey conducted by USNWR and is combined to create an overall rank as well as six sub-rankings: a peer assessment rank, a graduation and retention rank, a faculty resources rank, a student selectivity

[6]It is important to note that USNWR names its editions after the graduation year of the high school seniors applying to colleges at the time of its publication. For example, in September 2011, USNWR published the 2012 edition of America's Best Colleges. Furthermore, each edition of America's Best Colleges is computed using data from the previous year. To illustrate, the 2012 edition of America's Best Colleges used and published data from applicants that graduated high school in 2010. For a time trend of rankings for universities with an average ranking in the top 10, see Figure A1.

[7]For the 2012 edition of America's Best Colleges, USNWR surveyed 1,787 counselors at public high schools that appeared in the 2010 USNWR Best High Schools rankings and an additional 600 college counselors at the largest independent schools in nearly every state and the District of Columbia. Survey recipients were asked to rate schools' academic programs on a 5-point scale from 1 (marginal) to 5 (distinguished) or to mark "don't know." In some years, the reported faculty salary included benefits. In other years, it did not. In April 1995, the College Board re-centered the SAT so that the average score for each section was a 500 (the midpoint of the 200-800 scale). Educational expenditures include spending on instruction, research, and student services and exclude spending on sports, dorms, and hospitals. The predicted graduation rate is calculated by USNWR. The exact methodology is unpublished. For a more in depth description of the ranking methodology used for the 2012 edition, see the article "How U.S. News Calculates the College Rankings" available at http://www.usnews.com/education/best-colleges/articles/2011/09/12/how-us-news-calculates-the-college-rankings-2012.

rank, a financial resources rank, and an alumni giving rank.[8] To calculate the final rank, USNWR first calculates an overall quality score by weighting the individual quality indicators. As an example, the weights used to calculate the 2012 edition of America's Best Colleges are listed in Table A1 (located in the appendix). This score is normalized so that the top school each year receives an overall quality score of 100. USNWR then computes the overall rankings by ordering the overall quality score from highest to lowest and assigning the top school a ranking of one. In the case of ties in the overall quality score, the tied schools receive the same ranking and the schools are listed in alphabetical order. It is important to note that the weights used by USNWR to calculate overall quality change periodically. Therefore, a school can change in quality score and thus ranks from year to year without changing in its true quality.

Both the print and web versions of America's Best Colleges contain the overall ranking, the overall quality score, a selection of the underlying data used to compute it, and the weights used to compute the rankings. However, since not all of the underlying data is published, the rankings are not completely transparent. (Exactly which categories of underlying data are omitted varies from year to year, but generally USNWR chooses to omit financial data such as spending per student and average faculty salaries.) Furthermore, it is important to note that although the weights for underlying data are published, the exact methodology used to convert the quality indicators into a score is not clear since the underlying data is presented with not only different units but also highly variable ranges. For example, it is unclear how USNWR combines acceptance rate, which by definition is between 0% and 100%, and spending per student, which is measured in thousands of dollars. As such, these published weights can only be interpreted as general guidelines.[9]

In addition to changing its ranking methodology from time to time, USNWR also changes the number of schools it ranks. Before the 1996 edition, USNWR ranked only the top 25 universities. See Figure A2 for an illustration. The next 25 universities were lumped into a single tier and published in alphabetical order. Although only the top 25 schools were explicitly ranked, the underlying data was published for all of the schools. See Figure A3 for an illustration. Beginning with the 1996 edition, USNWR explicitly ranked all top 50 universities. See Figure A4 for an illustration. For the 2008 edition, USNWR ranked the top 120 universities, and since then the number has continued to expand.

My dataset contains USNWR rankings for the top 50 national universities in the United States from the 1990 edition to the 2012 edition as well as the underlying data published during those years. For a full list of schools included in my dataset, see Table A2. Additional college attributes used as

[8]For schools that do not respond to the survey, USNWR uses the data reported to the U.S. Department of Education's National Center for Education Statistics, the American Association of University Professors, the National Collegiate Athletic Association, and the Council for Aid to Education.

[9]Webster (2001) finds that despite the explicit weights that USNWR publishes for its rankings methodology, the most significant ranking criterion is the average SAT score of enrolled students.

outcome variables such as the number of applicants per year, the number of enrolled students, and yield were found in Peterson's Guide to Competitive Colleges[10].

Some transformations of the data were made to its original format in preparation for analysis. In some years, USNWR published an average SAT/ACT score. In other years, it only published a 25th and 75th score percentile. In these years, the average SAT/ACT was computed by taking the average of the 25th and 75th percentile scores. (Depending on the distribution of scores, this may or may not be the actual average score; however, it is sufficient for the purpose of this analysis.) Furthermore, all ACT scores were converted to SAT scores, using the concordance tables made available on the ACT website. In addition, in some years, the peer assessment score was reported as a score out of 5.0, while in other years, the peer assessment score was reported as a score out of 100. Peer assessment scores that were reported out of 5.0 were normalized to be out of 100 so that they could be compared to the rest of the dataset. For years where rank and quality score for schools ranked 25-50 were not published explicitly, I calculated a rank and quality score for these schools using the formula for schools ranked 1-25. To do this, I used the formula found by regressing overall quality scores from schools ranked 1-25 on published underlying data in order to predict the overall quality scores for schools ranked 25-50. I then ordered these overall quality scores to compute rank.

5.5 Econometric Model

In order to measure the effect of row and rank on the outcome variables, I must make several assumptions about USNWR's measure of quality. I remain agnostic about the validity of the assumptions and present econometric models for two opposing scenarios. In the first model, the quality score presented by USNWR wholly and accurately represents true quality. For this model, changes in USNWR's weighting of underlying quality indicators reflect changes in the composition of true quality. In the second model, USNWR changes the weights for the quality score in a manner such that changes in methodology do not reflect changes in true quality. For both models I assume that USNWR includes all the underlying data necessary to calculate true quality.

It's important to note that because the continuous quality score is normalized so that the highest quality school has a score of 100, a college's quality score can change even without changes in the methodology USNWR uses to calculate the quality score. If the highest quality school drops in underlying quality from year to year, a lower ranked school's quality score can increase without any increases in underlying quality. In other words, a school's quality score is not only a function of its changes in quality from year to year but also a function of the quality of its peers. However, because rank is explicitly ordinal, this type of normalization does not affect the ability to compare ranks

[10] Yield can be calculated using the number of applicants, the acceptance rate, and the number of enrolled freshmen.

between years[11]. Therefore, I also make assumptions about what dimensions of quality students care about. In the first model, students only care about the relative quality of schools and therefore it is possible to make meaningful comparisons among the quality scores published by USNWR. In the second model, students care about absolute changes in the quality of schools. In this model, I present an alternative methodology to measure quality.[12]

5.5.1 Model I

In the first model, the quality score presented by USNWR wholly and accurately represents true quality as conceptualized by students. As such, the problem becomes econometrically simple and can be represented by the fixed-effects regression in Equation 1, where $Rank_{it}$ is the USNWR rank for a school i during a year t, Row_{it} is the row the school's information is printed on, $Quality_{it}$ is the quality score, α_i is a school fixed effect, $\ni\mathring{A}_t$ is a year fixed effect, μ_{it} is a school- and year-specific stochastic error term, and $Demand_i t$ is the outcome variable for the following application cycle.[13]

$$Demand_{it} = \beta_0 + \beta_1 Rank_{it} + \beta_2 Row_{it} + \beta_3 Quality_{it} + \alpha_i + \upsilon_t + \mu_{it} \tag{5.1}$$

This specification gives β_1 as the effect of rank differences holding row and quality constant, β_2 as the effect of row differences holding rank and quality constant, and β_3 as the effect of quality differences holding rank and row constant. To relate back to the economic model, if β_1 is statistically significant, then limited attention is a mechanism that affects the student application decision. If β_2 is statistically significant, then the availability heuristic affects the student application decision. If β_3 is statistically significant, then quality disclosure is a mechanism that affects the student application decision.

[11] In many ways, the quality score given by USNWR is also an ordinal measure. Nevertheless, it can be interpreted as a more precise measure than rank since it attempts to quantify the relative magnitude of differences between schools in addition to supplying information about which school is better.

[12] The best way to measure true quality would be to use the complete vector of underlying quality indicators that students care about. Since this is only possible in theory, the next best method of measuring quality is to use the vector of quality indicators used by USNWR. However, doing so uses up many degrees of freedom in the estimation and causes the estimated coefficients to be imprecise. Therefore, in this section I explain how I use the published quality score and the published underlying quality indicators to measure quality despite data limitations.

[13] To measure student demand, I use the number of applications a school receives in the application cycle following the publication of each edition of USNWR rankings. In addition, I also use several alternative outcome variables: acceptance rate, average SAT score of enrolled freshmen, the proportion of enrolled freshmen who graduated in the top 10 percent of their high school class, and the yield. To illustrate the meaning of the year subscripts, I give an example using the high school class of 2009: the high school class of 2009 will see $Quality_{it}$, $Rank_{it}$, and Row_{it} for $t = 2009$ published in USNWR. These high school seniors will then decide which schools to send applications to, which then determines $Demand_{it}$ for $t = 2009$.

5.5.2 Model II

In the second model, students care about absolute changes in the quality of schools. Therefore, I present an alternative methodology to measure quality so that it can be compared from year to year. I use the same specification as in Model I, but I substitute $\overline{Quality}_{it}$ for $Quality_{it}$ in Equation 1. I define $\overline{Quality}_{it}$ as follows, where $X_{1_{it}}, X_{2_{it}}, \ldots, X_{n_{it}}$ represent the 15 underlying quality indicators that USNWR uses to calculate the quality score and $\overline{\gamma}_0, \overline{\gamma}_1, \ldots, \overline{\gamma}_n$ are the averages of the weights used by USNWR to calculate the quality score.[14]

$$\overline{Quality}_{it} = \overline{\gamma}_0 + \overline{\gamma}_1 X_{1_{it}} + \overline{\gamma}_2 X_{2_{it}} + + \ldots + \overline{\gamma}_n X_{n_{it}} \tag{5.2}$$

Since $\overline{Quality}_{it}$ is calculated using the same weights each year, changes in $\overline{Quality}_{it}$ are representative of changes in the underlying quality indicators.[15] Additionally, in this model I assume that $\overline{\gamma}_0, \overline{\gamma}_1, \ldots, \overline{\gamma}_n$ are the weights that give true quality.

5.6 Results

Before interpreting the results of the econometric models, it is helpful to visualize what the signs of the regression coefficients are expected to be assuming that schools of higher quality attract more and better applicants. Such visualization is provided in Table 1.

Table 1 Intuitive signs for regression coefficients

	Number of Applications	Acceptance Rate	Average SAT Score	% of Freshmen in Top 10% of HS Class	Yield
Rank	-	+	-	-	-
Row	-	+	-	-	-
Quality	+	-	+	+	+

[14] Although the weights for underlying data are published, I find $\overline{\gamma}_0, \overline{\gamma}_1, \ldots, \overline{\gamma}_n$ by regressing the quality scores across the entire sample on the corresponding quality indicators. I do this because the exact methodology used to convert the quality indicators into a score is not clear since the underlying data is presented with not only different units but also highly variable ranges. For example, it is unclear how USNWR combines acceptance rate, which by definition is between 0% and 100%, and spending per student, which is measured in thousands of dollars. As such, these published weights can only be interpreted as general guidelines. Furthermore, USNWR only publishes a subset of these X's and withholds other underlying data such as faculty salaries, which are likely correlated with published attributes.

[15] Essentially, I eliminated the changes in quality score that are due to changes in the weighting of the underlying quality indicators. Additionally, I do not normalize $\overline{Quality}_{it}$ to be out of 100 so that it can be compared from year to year. It has a minimum value of 52.1 and a maximum value of 96.6 across the sample.

In addition, to aid in the interpretation of the magnitude of coefficients, I have also included summary statistics for the outcome variables below in Table 2.

Table 2 Summary of outcome variables

Variable	Observations	Mean	Standard Deviation	Min	Max
Applicants	869	13758	7724	1354	44981
Acceptance Rate	1106	41	20	7	88
Average SAT Score[1]	1106	1305	106	1015	1525
% of Freshmen in Top 10% of HS Class	1093	77	17	22	100
Yield[2]	390	42	14	11	83

[1]ACT scores were converted to SAT scores using the concordance tables found at http://www.act.org/aap/concordance/; [2]Yield is the percentage of accepted students that matriculate

First, I present the regression results for Model I and Model II for all schools in Table 3 and Table 4. It is interesting to note that coefficients differ significantly between the models and that the only result that is statistically significant in both models is the coefficient for row on the average SAT score of enrolled freshmen. Despite the statistical significance of this result, however, it is not very practically meaningful. A 10-row improvement is correlated with a 9 point increase in average SAT score, which is only a 0.08-standard-deviation variation in average SAT score. Furthermore, it is interesting to note that out of the additional statistically significant results from Model I, the coefficient for rank on acceptance rate, the coefficient for rank on the percentage of freshmen in the top 10% of their high school class, and the coefficient for quality on yield have the expected signs as denoted in Table 1, while the coefficient for quality on the percentage of freshmen in the top 10% of their high school class and the coefficient for row on yield are unexpected.

Table 3 Regression outputs for Model I (all schools)

	Log(Number of Applications)	Acceptance Rate	Average SAT Score	% of Freshmen in Top 10% of HS Class	Yield[2]
Rank	-0.0059 (0.0049)	0.4827* (0.2712)	-1.365 (0.8448)	-0.6633** (0.2875)	0.0621 (0.0880)
Row	-0.0020 (0.0036)	0.0293 (0.1488)	-0.9403* (0.5005)	-0.1001 (0.1814)	0.1051* (0.0583)
Quality	-0.0044 (0.0042)	0.1608 (0.1758)	-0.8115 (0.5135)	-0.4064** (0.1784)	0.3593*** (0.1269)
Observations[1]	798	1002	1002	992	383

Robust standard errors are in parentheses; [1]Number of observations vary due to the fact that not all data is published for all years; [2]Yield is the percentage of accepted students that matriculate; *Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

Table 4 Regression outputs for Model II (all schools)

	Log(Number of Applications)	Acceptance Rate	Average SAT Score	% of Freshmen in Top 10% of HS Class	Yield[2]
Rank	-0.0026 (0.0045)	0.2673 (0.2523)	-0.7135 (0.7515)	-0.4005 (0.2538)	-0.0451 (0.1072)
Row	-0.0019 (0.0035)	0.0238 (0.1398)	-0.9160* (0.4770)	-0.0855 (0.1723)	0.0911 (0.0677)
Quality	0.0018 (0.0032)	-0.2393 (0.1652)	0.3466 (0.3677)	0.0542 (0.1292)	0.1451 (0.1255)
Observations[1]	796	1000	1000	991	383

Robust standard errors are in parentheses; [1]Number of observations vary due to the fact that not all data is published for all years; [2]Yield is the percentage of accepted students that matriculate; *Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

Next, I present the results for Model I and Model II for schools with an average rank of 1-25 in Table 5 and Table 6. For these schools, rank is statistically significantly correlated with all outcome variables except yield in both models. In addition, these rank effects are all directionally consistent with the expected results from Table 1. These results suggest that for every 10-rank improvement, a school will experience a 0.18-0.22% increase in applications, a 9.1-10.9 percentage point decrease in acceptance rate, a 2.0-4.0 point increase in average SAT score, and a 5.0-8.8 percentage point increase in the percentage of freshmen in the top 10% of their high school class.[16]

Table 5 Regression outputs for Model I (schools with average rank 1-25)

	Log(Number of Applications)	Acceptance Rate	Average SAT Score	% of Freshmen in Top 10% of HS Class	Yield[2]
Rank	-0.0176** (0.0082)	1.092** (0.4006)	-3.967** (1.546)	-0.8791*** (0.2762)	0.0210 (0.2413)
Row	0.0083 (0.0061)	-0.2831 (0.1777)	1.112 (0.8159)	0.2501** (0.1171)	0.0129 (0.0998)
Quality	0.0001 (0.0055)	0.2816 (0.2348)	-0.9199 (0.7671)	-0.4077* (0.2295)	0.2893 (0.1894)
Observations[1]	439	544	544	544	201

Robust standard errors are in parentheses; [1]Number of observations vary due to the fact that not all data is published for all years; [2]Yield is the percentage of accepted students that matriculate; *Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

[16]It's important to note that students may also respond to changes in rank because attending a higher ranked school (independent of quality) may serve as a signal to future employers, etc.

Table 6 Regression outputs for Model II (schools with average rank 1-25)

	Log(Number of Applications)	Acceptance Rate	Average SAT Score	% of Freshmen in Top 10% of HS Class	Yield[2]
Rank	-0.0217***	0.9066***	-2.040*	-0.4969**	-0.2592
	(0.0072)	(0.3207)	(1.047)	(0.2291)	(0.2806)
Row	0.0101	-0.2192	0.3526	0.1101	0.1302
	(0.0064)	(0.1475)	(0.5448)	(0.1175)	(0.0887)
Quality	-0.0054	0.0924	1.418	0.0142	0.0411
	(0.0053)	(0.3031)	(1.048)	(0.3281)	(0.3128)
Observations[1]	439	544	544	544	201

Robust standard errors are in parentheses; [1]Number of observations vary due to the fact that not all data is published for all years; [2]Yield is the percentage of accepted students that matriculate; *Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

Finally, I present the results for Model I and Model II for schools with an average rank of 26-50 in Table 7 and Table 8. I find that for these schools, quality is statistically significantly correlated with all outcome variables except yield in both models. In addition, these coefficients are all directionally consistent with the expected results from Table 1. These results are particularly interesting in light of the regression results for schools with an average rank of 1-25, which found statistically significant relationships between rank and outcome variables. Although not definitive, these results corroborate the findings from McDonough et al. (1998), which state that students with higher SAT scores are more likely to place an emphasis on rankings.

Table 7 Regression outputs for Model I (schools with average rank 26-50)

	Log(Number of Applications)	Acceptance Rate	Average SAT Score	% of Freshmen in Top 10% of HS Class	Yield[2]
Rank	-0.0031	0.3566	1.483	-0.7729*	-0.2356
	(0.0091)	(0.3702)	(0.9575)	(0.3793)	(0.2000)
Row	-0.0039	0.0243	-1.119**	-0.2285	0.0720
	(0.0036)	(0.2036)	(0.5098)	(0.2342)	(0.0802)
Quality	-0.0056	0.1900	4.505***	-0.5261	-0.3575
	(0.0147)	(0.4958)	(1.174)	(0.5310)	(0.4725)
Observations[1]	359	458	458	448	182

Robust standard errors are in parentheses; [1]Number of observations vary due to the fact that not all data is published for all years; [2]Yield is the percentage of accepted students that matriculate; *Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

Table 8 Regression outputs for Model II (schools with average rank 26-50)

	Log(Number of Applications)	Acceptance Rate	Average SAT Score	% of Freshmen in Top 10% of HS Class	Yield[2]
Rank	0.0055	-0.2116	0.5846	-0.1942	-0.0641
	(0.0051)	(0.2700)	(0.7016)	(0.2050)	(0.0928)
Row	-0.0035	0.0272	-1.441***	-0.1985	0.1052
	(0.0035)	(0.1666)	(0.4991)	(0.2166)	(0.0724)
Quality	0.0193**	-1.410***	3.788***	0.9503***	0.0370
	(0.0075)	(0.3800)	(0.8317)	(0.2992)	(0.1613)
Observations[1]	357	456	456	447	182

Robust standard errors are in parentheses; [1]Number of observations vary due to the fact that not all data is published for all years; [2]Yield is the percentage of accepted students that matriculate; *Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

5.7 Conclusion

Throughout this paper, I remained agnostic about the validity of the assumptions underlying the econometric models. Therefore, I cannot definitively conclude which of the three mechanisms discussed in Section 2 - quality disclosure, limited attention, or the availability heuristic - is the predominant mechanism through which college rankings influence student demand. Given the results in Section 6, I do not exclude any of the mechanisms as possible drivers of student demand.

However, the results suggest that for higher ranked schools, limited attention may be the mechanism through which college rankings influence student demand.[17] For lower ranked schools, quality disclosure is likely the mechanism. Therefore, more research needs to be conducted in order to verify these findings and to investigate why the mechanisms through which college rankings influence student demand differ depending on the quality of the school and/or student.

Nevertheless, it seems that even for decisions that can drastically alter the course of one's life (such as where to go to college), people do not use all the information available to them in order to make the decision.

[17]Perhaps this is because the practical differences in the quality of high-quality schools are small, and students are ill equipped to discern these small differences by themselves.

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Appendix A

Table A1 Weights applied to underlying data in order to compute the overall quality score for the 2012 edition of America's Best Colleges[1]

Variable	Weight
Peer assessment score[2]	22.5%
Six-year graduation rate	16.0%
Freshman retention rate	4.0%
Proportion of classes with fewer than 20 students	6.0%
Proportion of classes with 50 or more students	2.0%
Average faculty salary, including benefits	7.0%
Proportion of professors with the highest degree in their field	3.0%
Student-faculty ratio	1.0%
Proportion of faculty who are full time	1.0%
SAT and ACT scores of enrolled freshmen	7.5%
Proportion of enrolled freshmen who graduated in the top 10% of their high school class	6.0%
Acceptance rate	1.5%
Average spending per student on educational expenditures[3]	10.0%
Difference between the actual and predicted graduation rate[4]	7.5%
Alumni giving rate	5.0%

[1]These weights can be found at http://www.usnews.com/education/best-colleges/articles/2011/09/12/how-us-news-calculates-the-college-rankings-2012; [2]For the 2012 edition of America's Best Colleges, USNWR surveyed 1,787 counselors at public high schools that appeared in the 2010 USNWR Best High Schools rankings and an additional 600 college counselors at the largest independent schools in nearly every state and the District of Columbia. Survey recipients were asked to rate schools' academic programs on a 5-point scale from 1 (marginal) to 5 (distinguished) or to mark "don't know;" [3]Educational expenditures include spending on instruction, research, and student services and exclude spending on sports, dorms, and hospitals; [4]The predicted graduation rate is calculated by USNWR. The exact methodology is unpublished.

Table A2 Complete list of universities and average rank from the 1990-2012 editions of USNWR

Top 1-25		26-50	
School Name	Average Rank	School Name	Average Rank
Harvard University	1.4	University of North Carolina-Chapel Hill	26.6
Princeton University	1.7	Tufts University	26.9
Yale University	2.6	Wake Forest University	27.7
Stanford University	4.7	College of William and Mary	31.0
Massachusetts Institute of Technology	5.0	Brandeis University	32.3
California Institute of Technology	5.6	University of Rochester	32.9
Duke University	6.7	New York University	33.5
University of Pennsylvania	8.3	University of California-San Diego	33.9
Dartmouth College	8.9	University of Southern California	35.0
Columbia University	9.3	Boston College	35.6
University of Chicago	10.6	Lehigh University	36.1
Cornell University	12.5	Case Western Reserve University	37.5
Northwestern University	12.9	University of Wisconsin-Madison	37.7
Brown University	13.9	Georgia Institute of Technology	39.1
Johns Hopkins University	14.1	University of California-Davis	39.5
Rice University	15.3	University of Illinois-Urbana-Champaign	40.8
Washington University in St. Louis	15.5	Tulane University	42.1
Emory University	19.5	University of California-Irvine	42.1
University of California-Berkeley	20.3	University of Miami	42.5
Vanderbilt University	20.3	University of Washington	43.6
University of Notre Dame	20.4	Rensselaer Polytechnic Institute	43.9
University of Virginia	21.7	Rutgers New Brunswick	44.3
Georgetown University	22.0	Yeshiva University	44.6
Carnegie Mellon University	22.8	University of California-Santa Barbara	44.8
University of Michigan-Ann Arbor	24.1	Pennsylvania State University-University Park	45.7
University of California-Los Angeles	24.7	University of Texas-Austin	46.3
		University of Florida	47.1
		Syracuse University	47.3
		Pepperdine University	48.0
		Texas A&M University-College Station	48.0
		Worcester Polytechnic Institute	48.0
		George Washington University	48.7

Figure A1 Time trend of rankings for the 10 universities with the highest average rankings

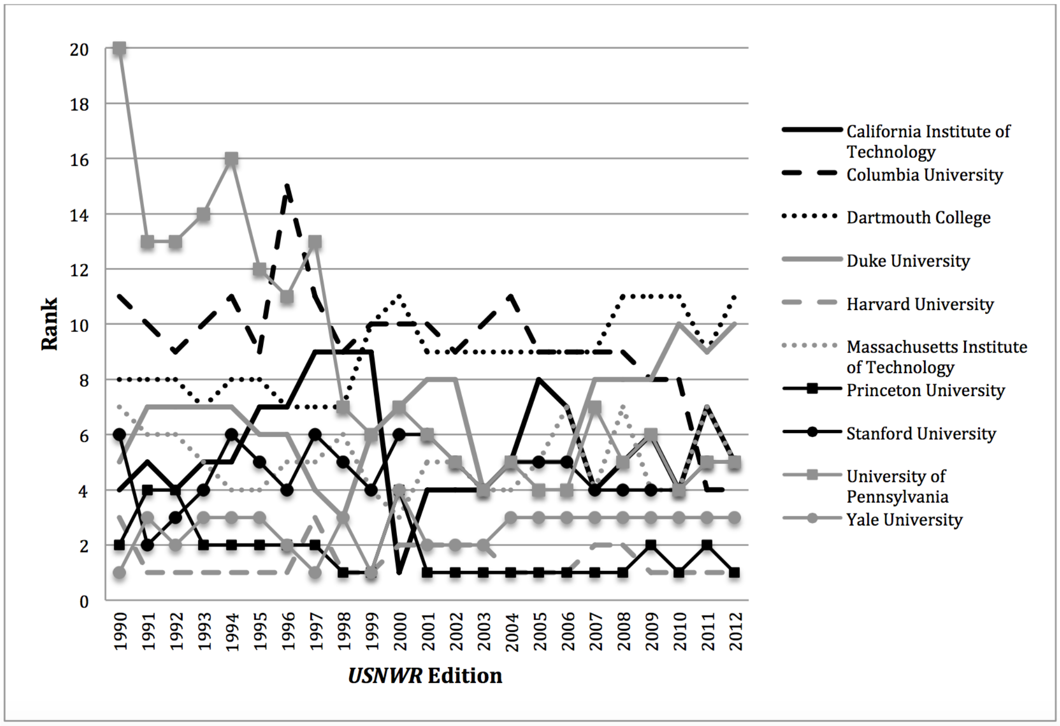
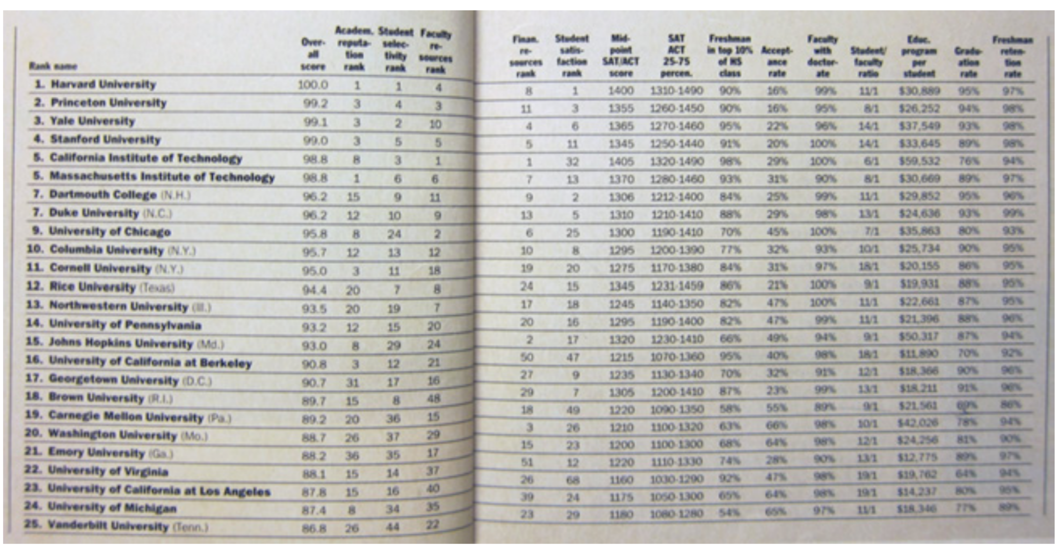


Figure A2 Top 25 universities in the 1993 edition of USNWR



Rank name	Over-all score	Academ. reputa-tion rank	Student selec-tivity rank	Faculty re-sources rank	Finan. re-sources rank	Student satis-faction rank	Mid-point SAT/ACT score	SAT ACT 25-75 percen.	Freshman in top 10% of HS class	Accept-ance rate	Faculty with doctor-ate	Student/faculty ratio	Educ. program per student	Gradu-ation rate	Freshman reten-tion rate
1. Harvard University	100.0	1	1	4	8	1	1400	1310-1490	90%	16%	99%	11/1	$30,889	95%	97%
2. Princeton University	99.2	3	4	3	11	3	1355	1260-1450	90%	16%	95%	8/1	$26,252	94%	98%
3. Yale University	99.1	3	2	10	4	6	1365	1270-1460	95%	22%	96%	14/1	$37,549	93%	98%
4. Stanford University	99.0	3	5	5	5	11	1345	1250-1440	91%	20%	100%	14/1	$33,645	89%	98%
5. California Institute of Technology	98.8	8	3	1	1	32	1405	1320-1490	98%	29%	100%	6/1	$59,532	76%	94%
5. Massachusetts Institute of Technology	98.8	1	6	6	7	13	1370	1280-1460	93%	31%	90%	8/1	$30,669	89%	97%
7. Dartmouth College (N.H.)	96.2	15	9	11	9	2	1306	1212-1400	84%	25%	99%	11/1	$29,852	95%	96%
7. Duke University (N.C.)	96.2	12	10	9	13	5	1310	1210-1410	88%	29%	98%	13/1	$24,636	93%	99%
9. University of Chicago	95.8	8	24	2	6	25	1300	1190-1410	70%	45%	100%	7/1	$35,863	80%	93%
10. Columbia University (N.Y.)	95.7	12	13	12	10	8	1295	1200-1390	77%	32%	93%	10/1	$25,734	90%	95%
11. Cornell University (N.Y.)	95.0	3	11	18	19	20	1275	1170-1380	84%	31%	97%	18/1	$20,155	86%	95%
12. Rice University (Texas)	94.4	20	7	8	24	15	1345	1231-1459	86%	21%	100%	9/1	$19,931	88%	95%
13. Northwestern University (Ill.)	93.5	20	19	7	17	18	1245	1140-1350	82%	47%	100%	11/1	$22,661	87%	95%
14. University of Pennsylvania	93.2	12	15	20	20	16	1295	1190-1400	82%	47%	99%	11/1	$21,396	88%	96%
15. Johns Hopkins University (Md.)	93.0	8	29	24	2	17	1320	1230-1410	66%	49%	94%	9/1	$50,317	87%	94%
16. University of California at Berkeley	90.8	3	12	21	50	47	1215	1070-1360	95%	40%	98%	18/1	$11,890	70%	92%
17. Georgetown University (D.C.)	90.7	31	17	16	27	9	1235	1130-1340	70%	32%	91%	12/1	$18,366	90%	96%
18. Brown University (R.I.)	89.7	15	8	48	29	7	1305	1200-1410	87%	23%	99%	13/1	$18,211	91%	96%
19. Carnegie Mellon University (Pa.)	89.2	20	36	15	18	49	1220	1090-1350	58%	55%	89%	9/1	$21,561	69%	86%
20. Washington University (Mo.)	88.7	26	37	29	3	26	1210	1100-1320	63%	66%	98%	10/1	$42,026	78%	94%
21. Emory University (Ga.)	88.2	36	35	17	15	23	1200	1100-1300	68%	64%	98%	12/1	$24,256	81%	90%
22. University of Virginia	88.1	15	14	37	51	12	1220	1110-1330	74%	28%	90%	13/1	$12,775	89%	97%
23. University of California at Los Angeles	87.8	15	16	40	26	68	1160	1030-1290	92%	47%	98%	19/1	$19,762	64%	94%
24. University of Michigan	87.4	8	34	35	39	24	1175	1050-1300	65%	64%	98%	19/1	$14,237	80%	95%
25. Vanderbilt University (Tenn.)	86.8	26	44	22	23	29	1180	1080-1280	54%	65%	97%	11/1	$18,346	77%	89%

Figure A3 Schools ranked 26-50 in the 1993 edition of USNWR, no explicit rank

School name (State)	Academic reputation rank	Avg./midpt. SAT/ACT score	SAT/ACT 25-75 percentile	Fresh. in top 10% of HS class	Acceptance rate	Faculty with PhD	Student/faculty ratio	Educ. program per student	Fresh. ret. rate	Grad. rate
NATIONAL UNIVERSITIES: QUARTILE ONE										
Boston College	60	1195	1100-1290	79%	56%	95%	17/1	$ 9,554	94%	85%
Brandeis University (MA)	40	1215	1110-1320	48%	73%	93%	9/1	$16,848	88%	78%
Case Western Reserve University (OH)	48	1210	1090-1330	68%	77%	97%	11/1	$20,667	91%	65%
College of William and Mary (VA)	40	1250	1140-1360	73%	35%	91%	14/1	$ 9,082	95%	84%
Georgia Institute of Technology	31	1190	1080-1300	68%	62%	90%	20/1	$10,127	86%	55%
Lehigh University (PA)	70	1170	1070-1270	37%	66%	98%	13/1	$13,294	93%	86%
New York University	48	1145	1040-1250	70%	64%	99%	13/1	$20,100	86%	66%
Pepperdine University (CA)	101	1060	950-1170	61%	58%	98%	11/1	$14,640	80%	61%
Rensselaer Polytechnic Institute (NY)	48	1205	1090-1320	59%	78%	98%	16/1	$12,994	86%	72%
Rutgers State Univ. at New Brunswick (NJ)	53	1120	1000-1240	37%	55%	90%	20/1	$ 9,755	90%	70%
SUNY at Buffalo	53	1100	1000-1200	39%	45%	95%	17/1	$10,911	87%	54%
Tufts University (MA)	53	1270	1180-1360	73%	47%	99%	10/1	$17,539	99%	90%
Tulane University (LA)	53	1155	1040-1270	44%	73%	98%	15/1	$13,436	90%	75%
University of California at Davis	36	1065	930-1200	90%	49%	100%	20/1	$15,433	88%	67%
University of California at Irvine	53	1030	N/A	85%	69%	95%	22/1	$14,570	90%	58%
University of California at Riverside	81	1000	880-1120	80%	73%	99%	14/1	$12,494	87%	55%
University of California at San Diego	40	1141	N/A	95%	56%	97%	29/1	$17,347	91%	55%
University of Florida	48	1125	1030-1220	57%	71%	95%	16/1	$11,096	90%	51%
University of Illinois at Urbana	20	1138	1015-1260	56%	72%	88%	16/1	$ 8,312	95%	73%
Univ. of North Carolina at Chapel Hill	20	1119	N/A	71%	37%	94%	13/1	$14,803	94%	76%
University of Notre Dame (IN)	36	1265	1160-1370	76%	42%	95%	14/1	$12,566	97%	93%
University of Rochester (NY)	48	1150	1030-1270	53%	63%	99%	12/1	$22,304	92%	74%
University of Southern California	40	1095	980-1210	42%	73%	93%	13/1	$16,063	86%	62%
University of Texas at Austin	20	1114	994-1234	49%	69%	97%	20/1	$ 6,713	84%	56%
University of Washington	26	1030	900-1160	54%	72%	89%	14/1	$15,419	91%	52%
University of Wisconsin at Madison	15	1100	970-1230	33%	75%	95%	15/1	$ 9,805	89%	64%

Figure A4 Schools ranked 1-50 in the 2010 edition of USNWR

Rank	School (State) (*Public)	Overall score	Peer assessment score (5.0=highest)	Graduation and retention rank	Average freshman retention rate	2008 graduation rate: Predicted	Actual	Over-performance (+) Under-performance (-)	Faculty resources rank	% of classes under 20 ('08)	% of classes of 50 or more ('08)	Student/faculty ratio ('08)	% of faculty who are full time ('08)	Selectivity rank	SAT/ACT 25th-75th percentile ('08)	Freshmen in top 10% of HS class ('08)	Acceptance rate ('08)	Financial resources rank	Alumni giving rank	Average alumni giving rate
1.	Harvard University (MA)	100	4.9	1	97%	94%	98%	+4	1	77%	[illegible]	7/1	93%	2	1390-1580	95%	8%	6	6	40%
1.	Princeton University (NJ)	100	4.9	3	98%	95%	96%	+1	3	75%	[illegible]	5/1	92%	2	1390-1580	97% [1]	10%	14	2	61%
3.	Yale University (CT)	98	4.8	2	99%	95%	97%	+2	8	79%	[illegible]	6/1	88%	1	1400-1580	97% [1]	9%	2	5	41%
4.	California Institute of Technology	93	4.6	23	98%	95%	88%	-7	3	77%	[illegible]	3/1	97%	2	1470-1560	97%	17%	1	24	31%
4.	Massachusetts Inst. of Technology	93	4.9	9	98%	96%	94%	-2	18	65%	[illegible]	7/1	90%	2	1380-1560	97%	12%	3	11	37%
4.	Stanford University (CA)	93	4.9	5	98%	94%	94%	None	14	72%	[illegible]	6/1	99%	9	1330-1540	92%	9%	10	15	35%
4.	University of Pennsylvania	93	4.5	5	98%	94%	95%	+1	2	73%	[illegible]	6/1	86%	6	1330-1520	99%	17%	8	10	39%
8.	Columbia University (NY)	91	4.6	5	99%	93%	95%	+2	10	77%	[illegible]	6/1	92%	8	1360-1550	94%	10%	15	13	38%
8.	University of Chicago	91	4.6	17	98%	92%	92%	None	3	73%	[illegible]	6/1	86%	15	1370-1560	86%	28%	8	18	33%
10.	Duke University (NC)	90	4.4	11	96%	94%	95%	+1	6	77%	[illegible]	8/1	97%	12	1340-1540	90% [1]	22%	11	7	39%
11.	Dartmouth College (NH)	89	4.3	9	98%	93%	95%	+2	15	63%	[illegible]	8/1	93%	11	1330-1550	90% [1]	13%	12	3	51%
12.	Northwestern University (IL)	87	4.3	11	97%	92%	93%	+1	7	75%	[illegible]	7/1	96%	15	1360-1530	85% [1]	26%	12	24	31%
12.	Washington University in St. Louis	87	4.1	15	97%	95%	94%	-1	8	74%	[illegible]	7/1	94%	6	1380-1540	96%	22%	3	14	35%
14.	Johns Hopkins University (MD)	86	4.5	19	97%	90%	91%	+1	22	65%	[illegible]	11/1	98%	24	1290-1510	84% [1]	25%	3	15	35%
15.	Cornell University (NY)	85	4.5	15	96%	91%	93%	+2	16	58%	[illegible]	10/1	98%	15	1300-1500	88% [1]	21%	17	20	32%
16.	Brown University (RI)	84	4.4	5	98%	93%	94%	+1	17	77%	[illegible]	8/1	93%	9	1320-1540	93% [1]	14%	26	7	39%
17.	Emory University (GA)	80	4.0	27	94%	95%	88%	-7	12	68%	[illegible]	7/1	95%	15	1310-1500	88% [1]	27%	18	12	37%
17.	Rice University (TX)	80	4.0	17	97%	92%	93%	+1	12	65%	[illegible]	5/1	93%	20	1320-1530	85% [1]	23%	22	17	34%
17.	Vanderbilt University (TN)	80	4.0	24	96%	90%	89%	-1	11	68%	[illegible]	8/1	93%	20	1332-1500	84% [1]	25%	15	32	24%
20.	University of Notre Dame (IN)	78	3.8	3	98%	92%	96%	+4	20	58%	[illegible]	12/1	96%	15	1320-1500	87%	27%	42	4	50%
21.	University of California–Berkeley*	76	4.7	24	97%	89%	90%	+1	35	60%	[illegible]	15/1	90%	14	1210-1470	98%	22%	43	113	13%
22.	Carnegie Mellon University (PA)	75	4.2	31	95%	89%	87%	-2	18	64%	[illegible]	11/1	94%	32	1290-1500	73% [1]	38%	23	50	20%
23.	Georgetown University (DC)	74	4.0	11	97%	91%	93%	+2	43	56%	[illegible]	11/1	77%	12	1310-1490	93% [1]	19%	31	29	28%
24.	Univ. of California–Los Angeles*	73	4.2	24	97%	87%	89%	+2	43	54%	[illegible]	16/1	90%	24	1170-1410	97%	23%	25	107	14%
24.	University of Virginia*	73	4.3	11	97%	89%	93%	+4	35	50%	[illegible]	15/1	98%	29	1220-1440	88% [1]	37%	64	35	23%
26.	Univ. of Southern California	72	3.9	32	96%	90%	88%	-2	27	64%	[illegible]	9/1	82%	20	1270-1470	87% [1]	22%	37	7	39%
27.	University of Michigan–Ann Arbor*	71	4.4	27	96%	86%	88%	+2	74	46%	[illegible]	15/1	93%	24	27-31	92%	42%	37	79	17%
28.	Tufts University (MA)	70	3.6	19	96%	89%	92%	+3	24	73%	[illegible]	7/1	86%	20	1340-1500	85%	26%	31	33	24%
28.	U. of North Carolina–Chapel Hill*	70	4.1	32	97%	84%	88%	+4	35	44%	[illegible]	14/1	97%	34	1210-1390	79%	34%	31	38	22%
28.	Wake Forest University (NC)	70	3.5	30	93%	86%	88%	+2	29	56%	[illegible]	11/1	92%	41	1240-1400 [2]	64%	38%	7	20	32%
31.	Brandeis University (MA)	67	3.5	27	94%	86%	90%	+4	29	69%	[illegible]	9/1	88%	28	1290-1450	82%	32%	47	20	32%
32.	New York University	66	3.8	37	93%	85%	84%	-1	23	60%	[illegible]	12/1	73%	35	1250-1440	68% [1]	32%	37	139	11%
33.	College of William and Mary (VA)*	64	3.8	19	95%	91%	91%	None	50	45%	[illegible]	11/1	92%	32	1250-1440	79% [1]	34%	88	42	22%
34.	Boston College	63	3.5	19	96%	88%	91%	+3	55	47%	[illegible]	13/1	78%	31	1250-1430	80% [1]	26%	67	35	23%
35.	Georgia Institute of Technology*	62	4.0	53	92%	83%	77%	-6	68	42%	[illegible]	14/1	100%	49	1250-1420	64%	67%	50	27	29%
35.	Lehigh University (PA)	62	3.2	34	94%	83%	85%	+2	35	48%	[illegible]	9/1	87%	27	1230-1400	93% [1]	28%	50	20	32%
35.	Univ. of California–San Diego*	62	3.8	34	94%	86%	85%	-1	95	42%	[illegible]	19/1	93%	29	1140-1370	100%	42%	26	200	7%
35.	University of Rochester (NY)	62	3.4	39	95%	89%	84%	-5	35	61%	[illegible]	9/1	85%	35	1220-1430	75% [1]	43%	21	66	18%
39.	U. of Illinois–Urbana-Champaign*	61	4.0	38	93%	78%	82%	+4	81	39%	[illegible]	17/1	99%	54	26-31	55%	69%	61	107	14%
39.	Univ. of Wisconsin–Madison*	61	4.1	46	94%	78%	82%	+4	86	44%	[illegible]	17/1	94%	51	26-30	58%	53%	53	120	13%
41.	Case Western Reserve Univ. (OH)	60	3.5	46	92%	87%	81%	-6	43	59%	[illegible]	10/1	93%	51	1210-1410	63%	73%	23	59	19%
42.	Rensselaer Polytechnic Inst. (NY)	59	3.5	39	93%	85%	82%	-3	43	53%	[illegible]	14/1	93%	41	1250-1420	64%	44%	43	82	18%
42.	University of California–Davis*	59	3.8	46	90%	82%	81%	-1	103	34%	[illegible]	19/1	94%	38	1050-1300	98%	53%	31	133	11%
42.	Univ. of California–Santa Barbara*	59	3.5	42	91%	82%	87%	+5	31	48%	[illegible]	17/1	94%	35	1080-1320	96%	49%	81	66	18%
42.	University of Washington*	59	3.8	64	93%	71%	77%	+6	128	35%	[illegible]	11/1	93%	46	1100-1330	87% [1]	67%	30	66	18%
46.	University of California–Irvine*	58	3.6	42	94%	82%	81%	-1	50	44%	[illegible]	19/1	91%	39	1090-1300	96%	49%	50	128	12%
47.	Pennsylvania State U.–University Park*	57	3.8	36	93%	67%	85%	+18	153	32%	[illegible]	12/1	95%	64	1100-1300	43%	51%	67	50	20%
47.	University of Florida*	57	3.6	41	95%	81%	82%	+1	144	47%	[illegible]	20/1	99%	39	1160-1380	79%	39%	46	79	17%
47.	University of Texas–Austin*	57	3.9	53	92%	76%	78%	+2	109	36%	[illegible]	17/1	97%	46	1110-1350	75%	44%	86	92	16%
50.	Tulane University (LA)	55	3.3	73	88%	84%	74%	-10	26	65%	[illegible]	9/1	73%	41	1250-1420	59% [1]	27%	53	55	19%
50.	University of Miami (FL)	55	3.1	68	90%	79%	77%	-2	35	52%	[illegible]	11/1	87%	41	1190-1380	66% [1]	39%	26	59	19%