

Graduation Rate Performance (2022 edition)

Overview:

Graduation rate performance compares a school's six year graduation rate of full-time, first-year bachelor's degree-seeking students against its predicted rate for that cohort. The larger the ratio between the former and latter, the better a school performs on the ranking factor.

A two year average of schools' actual graduation rate/predicted graduation rate quotients (pertaining to the fall 2013 and fall 2014 entering classes) were calculated. The fall 2013 entering class quotients had been calculated for use in the 2021 rankings edition and were re-used for the 2022 rankings. Schools not ranked in the 2021 edition only used the fall 2014 cohort calculation.

The average of quotients were z-scored among other schools' quotients in their ranking categories and weighted at 8 percent toward their overall scores in the *2022 Best Colleges Rankings*. The 8 percent weight is unchanged from the 2021 edition.

Summary of model:

The dependent variable was six-year graduation rates of schools' fall 2014 entering classes of full-time, first-year bachelor's degree-seeking students. Schools reported these rates directly to U.S. News during spring 2021. For non-responding schools, graduation rates were estimated from non-weighted averages of fall 2011 to fall 2013 six-year graduation rates of bachelor's degree-seeking students reported to the U.S. Department of Education; accessible from IPEDS.

The independent variables were the following:

- The five year non-weighted average of percentages of 2014-2015 through 2018-2019 full-time, first-time undergraduates receiving Pell Grants, sourced from IPEDS.
- The natural log value of the two-year average of expenditures per student using data from fiscal years 2016 and 2017, sourced from U.S. News statistical surveys and IPEDS.
- The 25th and 75th percentile ACT and SAT scores of schools' fall 2014 entering classes, sourced from U.S. News statistical surveys and IPEDS. For use in the model, the midpoint between the percentile scores for each exam (ACT composite, critical reading SAT, math SAT) was calculated, converted to its percentile

distribution among test-takers, and weighted by the proportion of new entrant that took SAT and ACT. For any institution whose combined percentage of its fall 2014 class submitting ACT and SAT scores was less than 75% of new entrants, its percentile distribution was discounted by $\times 0.85$, as U.S. had done for its 2015 rankings calculations.

- The cubed value of the standardized tests value used in the model.
- The proportion of the 2016-2017 federal financial aid receiving undergraduates who were first-generation students; sourced from College Scorecard.
- National Universities and National Liberal Arts Colleges incorporated the percentage of 2014 entering class students placing in the top 10 percent of their high school classes. Regional universities and colleges used percentages placing in the top 25 percent. The data were sourced from U.S. News statistical surveys.
- National Universities only incorporated the percentage of 2016-2017 graduates awarded degrees in science, technology, engineering and mathematics (STEM) fields – mapped from the U.S. Department of Homeland Security’s NCES CIP code STEM designations.

For the regressions, schools were assessed on all inputs available to U.S. News. For example, a national liberal arts college from which U.S. News had data on all variables except high school class standing would be included in a regression using only its five remaining variables; compared only to other national liberal arts colleges that also reported data on the five variables regardless of whether they also reported high school class standing.

To make fullest use of schools’ data, nearly twenty regressions were executed to account for the differing combinations of input data available to U.S. News. The model’s predictive effect is strongest in the national universities and national liberal arts categories in which participation in U.S. News’s surveys is more robust.

The very highest unrounded predicted graduation rates were formulaically smoothed so that for face validity no schools’ predicted value would be greater than the highest actual six-year graduation rate of 98%. Such discounting, which was never greater than 2 percentage points, was also incorporated and gradually phased out among schools whose modeled values were in the mid-90s, out of fairness.

Altogether, the average predicted graduation rate among all schools matched the average actual graduation rate among all schools to within a small fraction of one percentage point. Here are more details on the calculations when no missing variables:

2022 rankings of National Universities

Model Summary^{a,c}

group	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
22	1	.916 ^b	.840	.836	6.271

Coefficients^{a,b}

group	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
22	1	(Constant)	57.907	12.623		4.588	.000
		gen1	-.324	.067	-.193	-4.841	.000
		spend	.609	1.039	.022	.586	.558
		hsstand	.307	.032	.493	9.685	.000
		pell	-.309	.051	-.272	-6.081	.000
		stdtest	.226	.107	.220	2.116	.035
		stdtestcub	-8.059E-6	.000	-.120	-.971	.332
		stem	-.031	.024	-.034	-1.253	.211

2022 rankings of National Liberal Arts Colleges

Model Summary^{a,c}

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921 ^b	.849	.843	6.501

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-48.773	24.385		-2.000	.047
	gen1	-.306	.108	-.160	-2.830	.005
	spend	11.011	2.243	.271	4.909	.000
	hsstand	.203	.058	.264	3.519	.001
	pell	-.262	.066	-.274	-3.984	.000
	stdtest	.221	.105	.237	2.097	.038
	stdtestcub	-1.009E-5	.000	-.143	-1.220	.224

2022 rankings of Regional Universities

Model Summary^{a,c}

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.803 ^b	.645	.640	8.128

Coefficients^{a,b}

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-16.376	16.232		-1.009	.314
	gen1	-.239	.068	-.159	-3.494	.001
	spend	8.960	1.405	.205	6.376	.000
	hsstand	.271	.039	.305	7.030	.000
	pell	-.389	.049	-.389	-7.965	.000
	stdtest	-.117	.124	-.110	-.946	.345
	stdtestcub	1.312E-5	.000	.120	1.087	.278

2022 rankings of Regional Colleges

Model Summary^{a,c}

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.829 ^b	.687	.673	7.992

Coefficients^{a,b}

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-25.614	27.123		-.944	.347
	gen1	-.540	.128	-.307	-4.234	.000
	spend	9.320	2.435	.212	3.827	.000
	hsstand	.287	.080	.290	3.585	.000
	pell	-.286	.079	-.306	-3.635	.000
	stdtest	.054	.165	.056	.327	.744
	stdtestcub	-9.934E-6	.000	-.085	-.533	.595