

# What are the best universities in the Nation, and why?

## Objective

Assign a market based quality measure to 950 universities across the nation.

Analyze how various institutional and student attributes affect university quality.

## Equations

University Quality Measure :  $RW_{tk} = \frac{W_{tk}}{W_{tk}^M}$

where:  $W_{tk}$  = national median salary  
 $W_{tk}^M$  = average wage for graduate cohort

Regression Equation :  $RW_{tk} = \beta_0 + D_k' \beta_D + Q_{kt}' \beta_Q + Z_{kt}' \beta_Z + \varepsilon_{tk}^{UV}$

where:  $D_k' \beta_D$  = regional dummy variables

$Q_{kt}' \beta_Q$  = student attributes from highschool

$Z_{kt}' \beta_Z$  = institution attributes

Variable Name	Coefficient
Town Region	0.001
Rural Region	-0.041
Urban Region	-0.013
Highschool GPA	0.017
High School Class Rank	-0.0003
Admission Strictness	0.591
% Black Students	0.034
% Hispanic Students	0.095

## Background

Price index for college grew **80%** from August 2003 to August 2013, and financial aid is not keeping up with tuition increases.

Students should have a recourse that allows them to evaluate their return on investment.

If universities have an overall goal of setting their students up for success than they need to know what institutional attributes lead to higher starting salaries.



## Data

- NACE** (National Association of Colleges and Employers) – Provided data on national average starting salaries for each major.
- IPEDS** (Integrated Postsecondary Education Data System) – Provided data on institution and student attributes for each university in the study.
- Pay Scale** – Provided data about actual starting salaries for graduates from each university in the study.



## BIG 10 RANKING

University Name	Average Starting Salary	Salary Ratio	Pay Difference Controlled For Student Quality
University of Michigan	\$51,300	1.095	0.062
Rutgers University	\$48,500	1.092	0.063
University of Maryland	\$49,100	1.049	-0.002
University of Wisconsin	\$46,900	1.036	0.016
Pennsylvania State University	\$48,600	1.034	0.021
Northwestern University	\$49,800	1.031	-0.031
Purdue University	\$51,800	1.02	0.057
University of Minnesota	\$46,500	1.009	0.007
Michigan State University	\$44,300	0.982	0.014
Ohio State University	\$45,100	0.97	-0.05
Indiana University	\$42,400	0.966	-0.001
University of Nebraska-Lincoln	\$43,300	0.935	-0.016
University of Iowa	\$42,100	0.931	0.029

## HOW DO IOWA STATE SCHOOLS COMPETE?

University Name	Average Starting Salary	Salary Ratio	**Pay Difference Controlled For Region	*Pay Difference Controlled For Student Quality	Overall Unadjusted Rating (out of 950)
Iowa State University	\$45,700	0.962	0.072	0.034	322
University of Iowa	\$42,100	0.9313134	0.0414584	0.029	433
University of Northern Iowa	\$39,200	0.926	0.036	-0.048	453

\*\*Pay Difference Controlled For Region = Salary Ratio - Effect of Region

\* Pay Difference Controlled For Student Quality = Salary Ratio - Effect of Student Quality

\* Pay Difference Controlled For Student Quality = Salary Ratio - Effect of Student Quality

## TOP 5 Universities

	Region Control			Student Control			No Control		
	University Name	Starting Salary	Pay Difference	University Name	Starting Salary	Value Added	University Name	Starting Salary	Salary Ratio
Public	1. Virginia Military Institute	\$52,300	0.275	1. Charter Oak State College	\$52,000	0.280	1. United States Military Academy	\$76,000	1.000
	2. University of Virginia	\$50,200	0.221	2. Prairie View A & M University	\$49,300	0.238	2. United States Naval Academy	\$72,200	1.000
	3. Charter Oak State College	\$52,000	0.212	3. Virginia Military Institute	\$52,300	0.227	3. United States Air Force Academy	\$65,400	1.000
	4. George Mason University	\$47,600	0.184	4. Texas A&M University - Kingsville	\$48,400	0.217	4. Charter Oak State College	\$52,000	1.000
	5. University of Michigan	\$51,300	0.177	5. Massachusetts College of Art and Design	\$40,800	0.176	5. University of California, Berkeley	\$52,100	1.000
Private	1. Art Center College of Design	\$50,900	0.375	1. Loma Linda University	\$63,400	0.378	1. Swarthmore College	\$54,800	1.000
	2. Washington and Lee University	\$52,100	0.343	2. Art Center College of Design	\$50,900	0.373	2. Williams College	\$53,600	1.000
	3. Molloy College	\$60,700	0.342	3. Molloy College	\$60,700	0.360	3. Amherst College	\$53,000	1.000
	4. Loma Linda University	\$63,400	0.321	4. Thomas Jefferson University	\$63,200	0.360	4. California Institute of Technology	\$67,400	1.000
	5. Swarthmore College	\$54,800	0.312	5. College for Creative Studies	\$44,000	0.323	5. Princeton University	\$58,300	1.000

## Bottom 5 Universities

	Region Control			Student Control			No Control		
	University Name	Starting Salary	Pay Difference	University Name	Starting Salary	Value Added	University Name	Starting Salary	Salary Ratio
Public	1. Montana State University	\$32,800	-0.223	1. Nicholls State University	\$35,200	-0.182	1. Wayne State College	\$29,300	0.678
	2. Indiana University	\$32,400	-0.191	2. Montana State University	\$32,800	-0.175	2. Savannah State University (SSU)	\$31,200	0.707
	3. University Of Maine	\$33,900	-0.186	3. United States Air Force Academy	\$65,400	-0.173	3. Montana State University - Billings	\$32,800	0.708
	4. Wayne State College	\$29,300	-0.186	4. University of Illinois at Springfield	\$35,400	-0.155	4. Nicholls State University	\$35,200	0.710
	5. Pennsylvania College Of Technology	\$41,000	-0.185	5. Jackson State University	\$31,700	-0.151	5. Georgia Southwestern State University	\$33,800	0.711
Private	1. Culinary Institute of America	\$36,500	-0.306	1. Culinary Institute of America	\$36,500	-0.317	1. Culinary Institute of America (CIA)	\$36,500	0.652
	2. Daemen College	\$30,700	-0.295	2. Daemen College	\$30,700	-0.289	2. Daemen College	\$30,700	0.663
	3. Medaille College	\$32,300	-0.252	3. Seton Hill University	\$33,400	-0.204	3. Medaille College	\$32,300	0.719
	4. Kaplan University-Davenport Campus	\$35,300	-0.249	4. Sullivan University	\$33,800	-0.202	4. Kaplan University-Davenport Campus	\$35,300	0.711

## General Conclusions

The top public universities have better salary ratios than the top private universities.

Iowa State outperforms the other state schools.

Being in a moderately urban region positively affects university quality.

Diversity positively affects university quality.