

FOSTERING STUDENT SUCCESS

The Role of Institutional Characteristics

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Purpose: Our Why

We want to increase higher education access and success for lower income students.



Research Question

Which institutional characteristics (of Title IV, baccalaureate-granting, four-year institutions in the United States) are associated with enrolling and successfully graduating full-time, first-time (FT/FT) Pell recipients on time (within four years)?



Context, Background and Summary of the Literature



Pell Grant vs Rising Costs

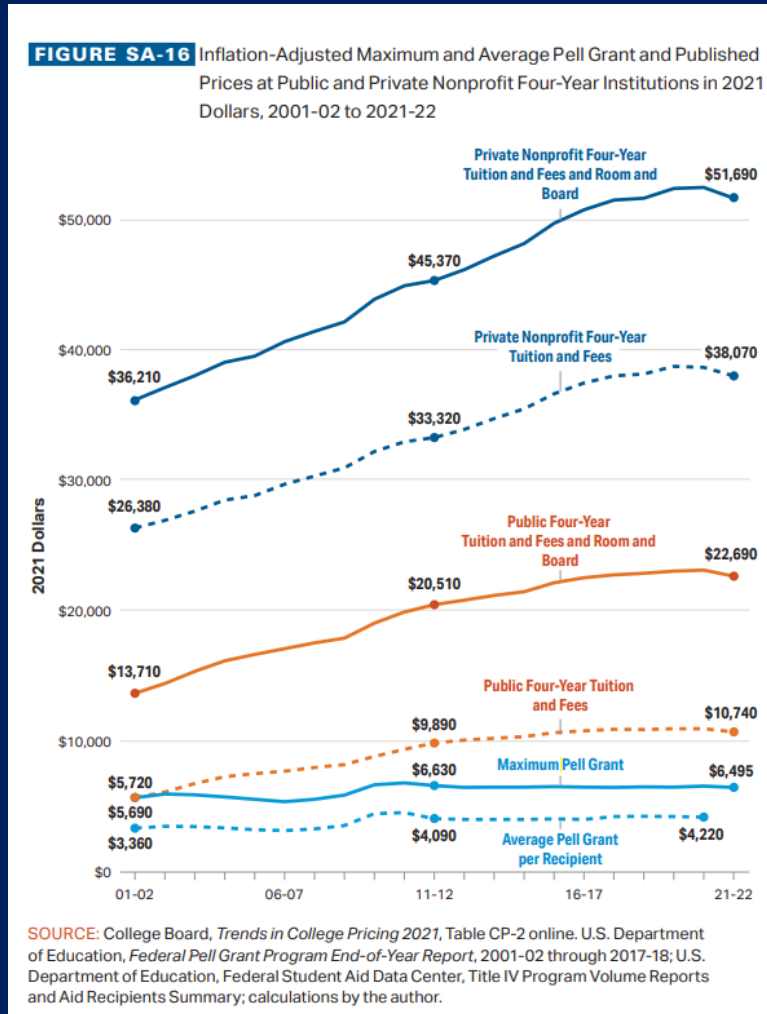
2000

Pell covers 22%
Private Tuition + R&B

Pell covers 16%
Private Tuition

Pell covers 42%
Public Tuition + R&B

Pell covers 99%
Public Tuition



2021

Pell covers 13%
Private Tuition + R&B

Pell covers 17%
Private Tuition

Pell covers 29%
Public Tuition + R&B

Pell covers 60%
Public Tuition



Federal Pell Grant & Eligibility

- Authorized by the Title IV Higher Education Act of 1965; Pell Grant awarded starting in 1973
- Students are required to submit the Free Application for Federal Student Aid (FAFSA)
- Changes to Eligibility
 - 2012: decreased from 18 to 12 semesters
 - 2017: Summer eligibility (year round)
- New Biden proposal to increase by \$820 (\$7,395 to \$8,215)



Previous Research

Serving Their Share: Some Colleges Could Be Doing a Much Better Job Enrolling and Graduating Low-Income Students (IHEP, 2015)

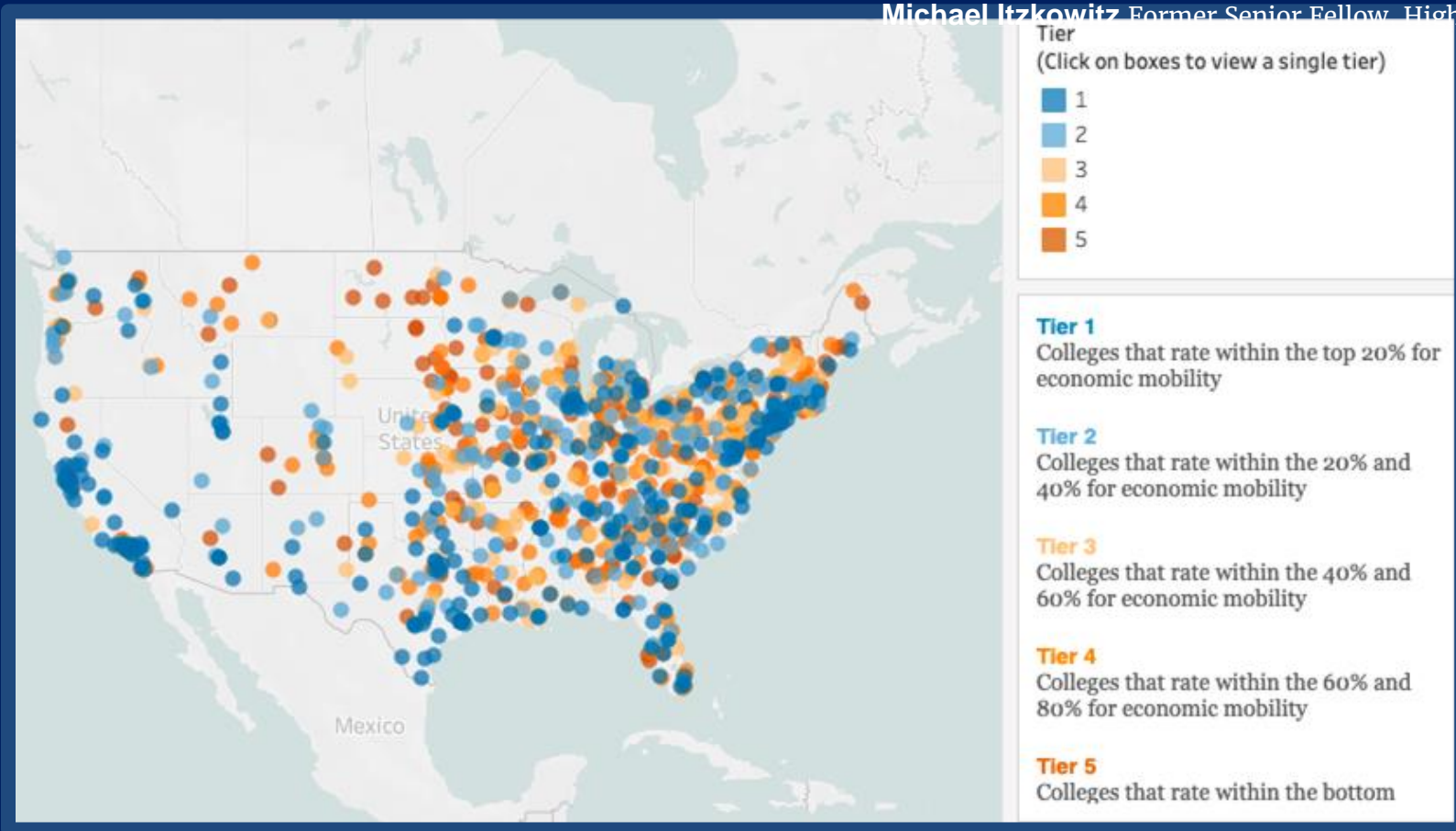
- Examined colleges who un/successfully graduate Pell Grant recipients (IPEDS data)
- Success: Institutional commitment, system-wide strategies, strong leader



Economic Mobility Index

Pell Grant Enrollment & Recoup Costs (July 2022)

Michael Itzkowitz, Former Senior Fellow, Higher Education



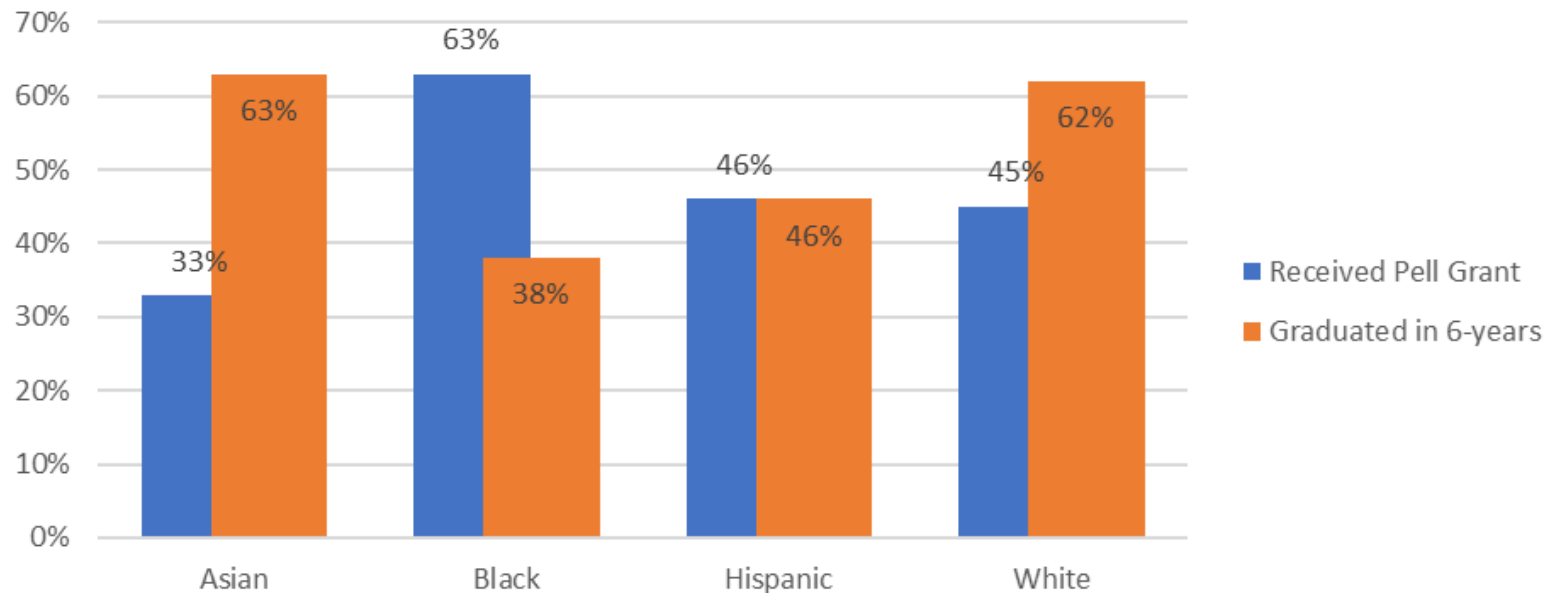
Pell Grant Recipients Demographics

- Come from low- or moderate-income households
- Maintain employment throughout college
- Complete college at lower rates
- Have delayed enrollment
- Be financially independent
- Have dependents



Racial Differences

% of Pell Grant Recipients &
% of 6-Year Graduation Rates by Race/Ethnicity



Source: NCES Data 2015-16 Pell Grant Recipients and 2010 6-Year Graduation Rates by Race



Cost Benefit of Post-Secondary Education

With the continued rise in costs for a post-secondary education:

- Stronger national and state effort to have students graduate within four years with bachelor's degree
- Evaluation of the costs versus benefits of bachelor's degree
- Stronger emphasis on the value of a 4-year degree



Institutional Differences in Pell Enrollment and Completion

- College completion rates are highest at institutions with higher % of students enrolled full time
- Private institutions
 - Higher graduation rates
 - Drawback: higher costs of tuition
- Public institutions
 - More financial aid support
 - Drawback: poorer graduation rates
- Regional Differences
 - Racial demographics vary across the United States
 - The types of institutions vary by region



Challenges that Limit Pell Grant Usage

States vary in their Higher Education Funding and Pell Grant approach

- Some offer a comprehensive financial aid packages without making Pell available
- Others exhaust students' Pell Grant funding first, offering less institutional and state financial aid
- Culminating Result: Students having to take out loans to make up for difference because Pell Grant did not absorb costs



Addressing the Gaps in the Literature

- Categorization of institutions by enrollment share and on-time graduation rate of Pell recipients
- Examination of institutional characteristics that facilitate enrollment and on-time graduation of Pell recipients

Our findings offer a glimpse of which institutional characteristics are related to lower income students graduating within four years.



Methods: Datasets

Integrated Postsecondary Education Data System (IPEDS)

- **AY 2012-13 cohort (first-time, full-time students)**
 - 2020 Outcome Measures Survey
 - IC Header
 - Institutional Characteristics
 - Admissions
 - Fall Enrollment Survey
 - 12-Month Enrollment
 - Student Financial Aid



Sample Construction

Sample = 1,661 institutions

Included...

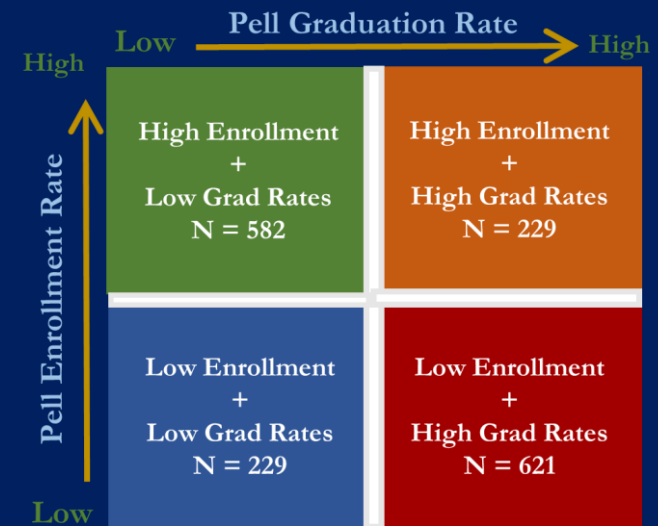
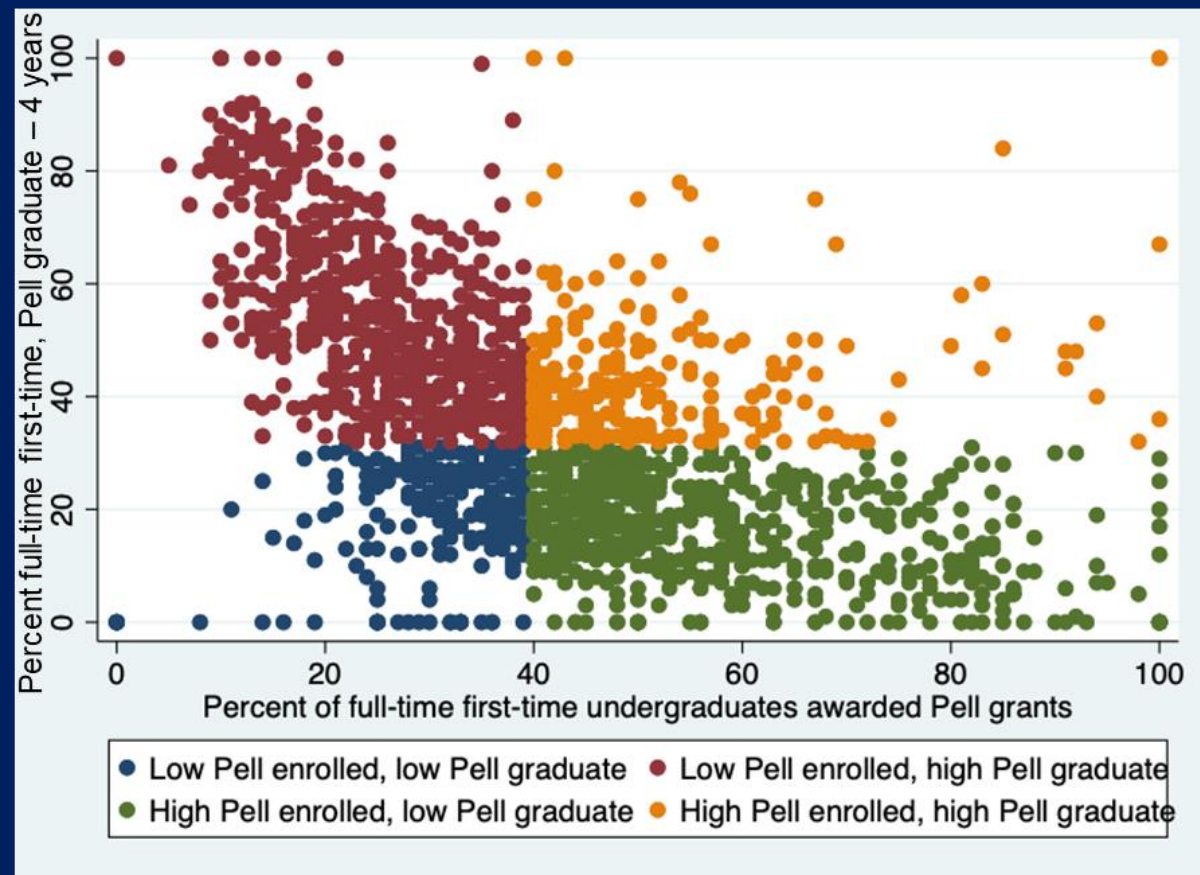
- Title IV participating
- Degree-granting institutions - Primarily baccalaureate and above
- Four-year sector (public, private, not-for-profit and private for-profit)
- Has full-time, first-time undergraduate students

Excluded...

- Bureau of Economic Analysis Regions (BEA)
 - U.S. Service Schools (would not provide Title IV funding)
 - U.S. territories
- Institutions that did not complete the Outcomes Measures 2020-21 survey (reporting on the time-to-graduation for the AY 12-13 cohort)



Methods: Sample Institutions (N = 1,661)



Methods: Analysis Conducted

- Descriptive analysis
- Analysis of variance (ANOVA)
 - Pairwise deletion for missing cases
- Multinomial logistic regression
 - Reference Group = High-enrollment/Low-graduation rate (H-erl/L-grad)



Multinomial Logistic Regression Results

<u>Variable</u>	H-enl / L-grad	L-enl / L-grad	L-enl / H-grad	H-enl / H-grad
FT/FT 1-yr Retention rate	REF GROUP	+	+	+
Private, not-for-profit			+	+
12-month FTE enrollment				-
Avg. Pell Grant award		-	-	-
Admission rate		+		
Yield rate			-	
UG population - % Blk/AfrAm		-	-	-
UG population - % Hisp/Latino		-	-	
UG population - % Asian			-	
UG population - % International		+		-

All significant at or below $p < .05$;
n = 1,474



First-to-Second Year Retention (Cohort of Full-time, First-time Students)

	L-erl/L-grad	L-erl/H-grad	H-erl/L-Grad	H-erl/H-grad
ANOVA (Mean/SD)	73.4% (13.1%)	83.9% (8.3%)	64.0% (15.0%)	73.1% (11.6%)
Regression Multinomial Logistic (Coefficient/SE)	.07 (0.013)***	.24 (.015)***	Reference Group	.10 (.012)**

n = 1,474; *** p < .001; ** < .01; * p < .05



Institutional Control

	L-erl L-grad	L-erl H-grad	H-erl L-grad	H-erl H-grad	Total
Public	123 (23.9%)	125 (24.3%)	244 (47.5%)	22 (4.3%)	514 (100%)
Private, not-for-profit	93 (8.8%)	491 (46.3%)	284 (26.8%)	192 (18.1%)	1,060 (100%)
Private, for-profit	13 (14.9%)	5 (5.7%)	54 (62.1%)	15 (5.7%)	87 (100%)
Total	229 (13.9%)	621 (37.4%)	582 (35.0%)	229 (13.8%)	1,661 (100%)



Average Pell Award

(Full-time, First-time Students, fall 2012 cohort)

	L-erl/L-grad	L-erl/H-grad	H-erl/L-Grad	H-erl/H-grad
ANOVA (Mean/SD)	\$4,141 (\$523)	\$4,163 (\$314)	\$4,298 (\$553)	\$4,228 (\$561)
Regression Multinomial Logistic (Coefficient/SE)	-.001 (0.00)	-.002 (.000)***	Reference Group	-.001 (.000)**

n = 1,474; *** p < .001; ** < .01; * p < .05



Undergraduate Racial/Ethnic Composition

	L-erl L-grad	L-erl H-grad	H-erl L-grad	H-erl H-grad
% Black/African American	6.2% (7.4%)	4.5% (3.7%)	21.0% (24.8%)	12.3% (17.9%)
% Hispanic/Latino	6.0% (6.1%)	6.0% (4.2%)	8.9% (12.4%)	7.1% (8.4%)
% Asian	3.1% (6.5%)	4.0% (4.4%)	2.4% (4.5%)	2.9% (5.3%)
% American Indian/ Alaska Native	0.7% (1.9%)	0.3% (0.4%)	0.8% (3.5%)	0.5% (0.8%)
% Native Hawaiian/ Pacific Islander	0.2% (0.7%)	0.1% (0.7%)	0.2% (1.2%)	0.3% (0.8%)
% International	3.3% (4.8%)	4.2% (4.4%)	2.2% (3.0%)	2.0% (3.1%)



Undergraduate Racial/Ethnic Composition

	L-erl L-grad	L-erl H-grad	H-erl L-grad	H-erl H-grad	U.S. Fall '12 4-yr inst.*
% Black/African American	6.2% (7.4%)	4.5% (3.7%)	21.0% (24.8%)	12.3% (17.9%)	14.4%
% Hispanic/Latino	6.0% (6.1%)	6.0% (4.2%)	8.9% (12.4%)	7.1% (8.4%)	12.0%

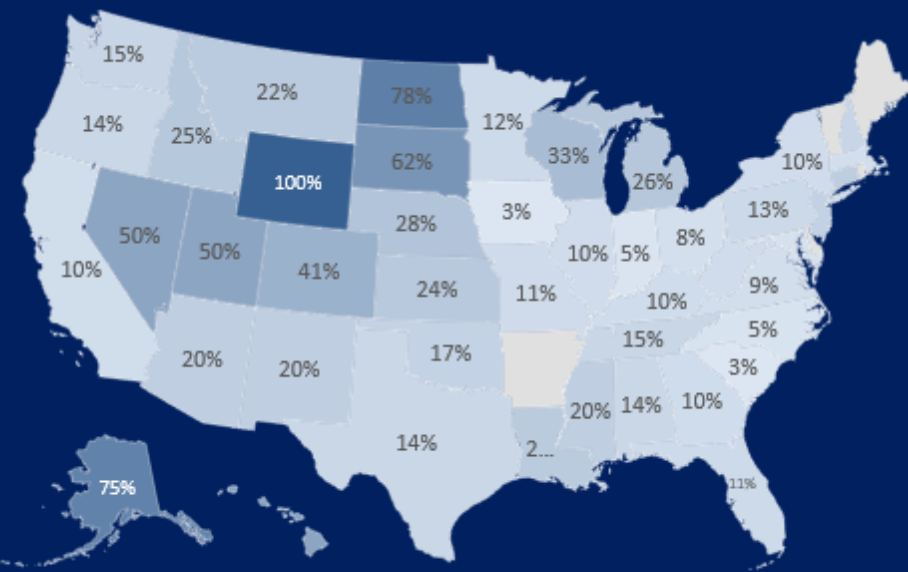
*Source: 2013 Digest of Education Statistics, Table 306.20. Total fall enrollment in degree-granting postsecondary institutions, by level and control of institution and race/ethnicity of student: Selected years, 1976 - 2012 (https://nces.ed.gov/programs/digest/d13/tables/dt13_306.20.asp)



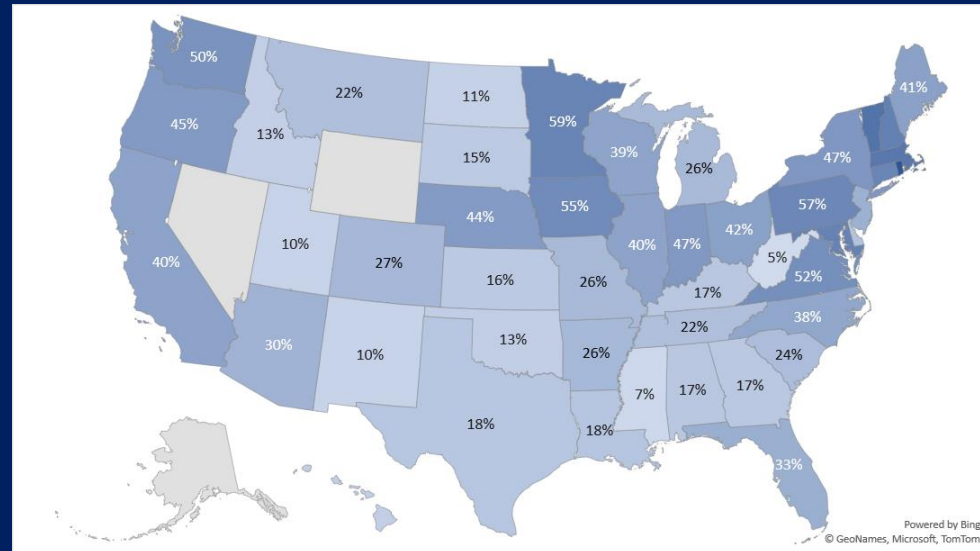
Low FT/FT Pell Recipient Institutions

Low Enl / Low Grad

v. Low Enl / High Grad



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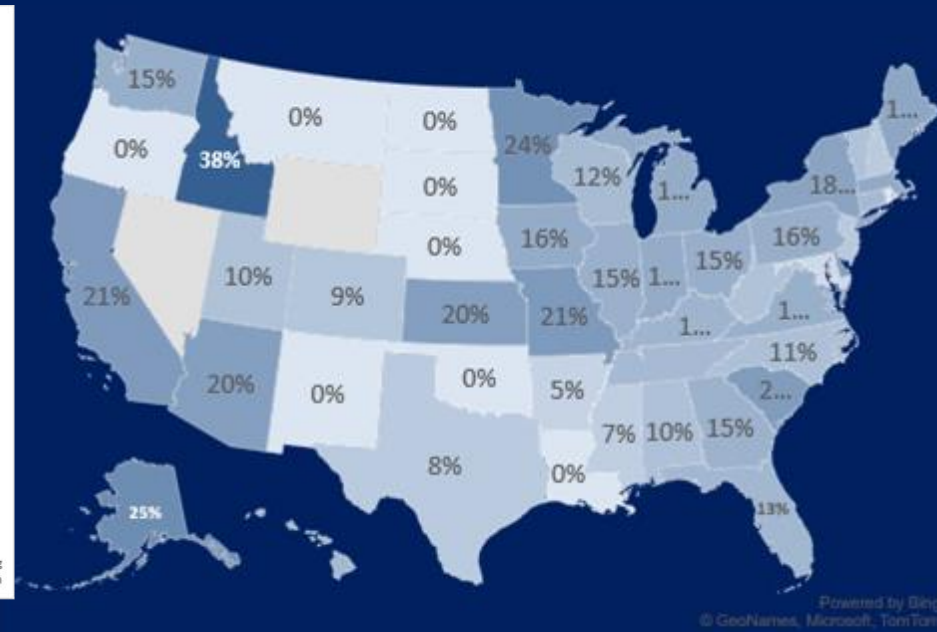
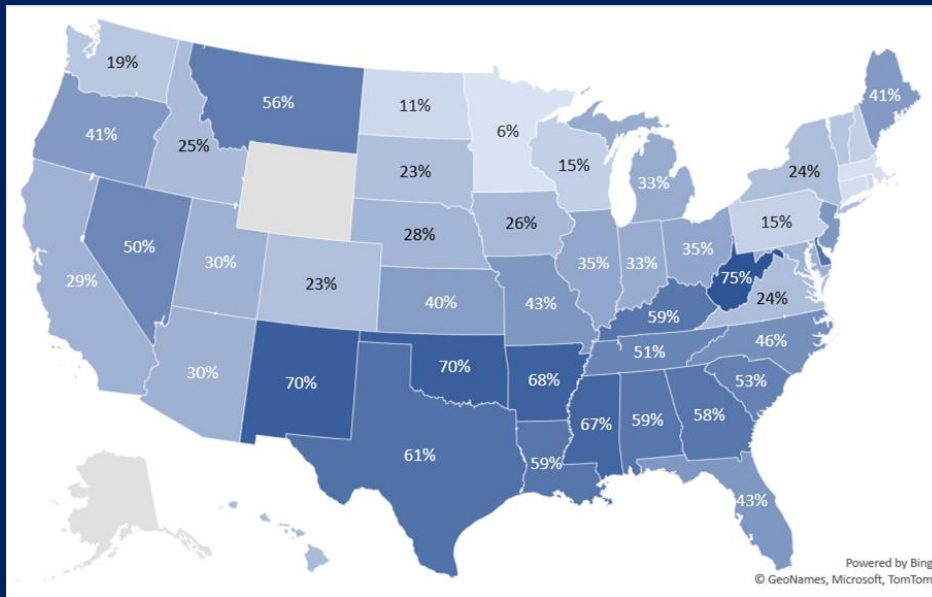


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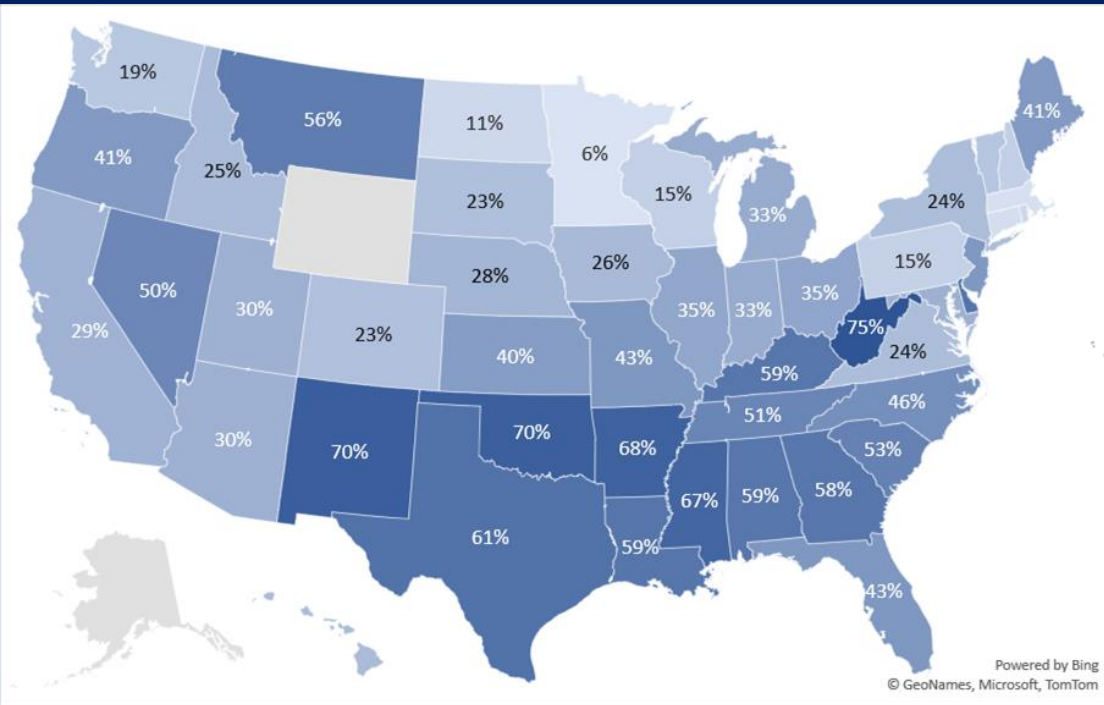


High FT/FT Pell Recipient Institutions

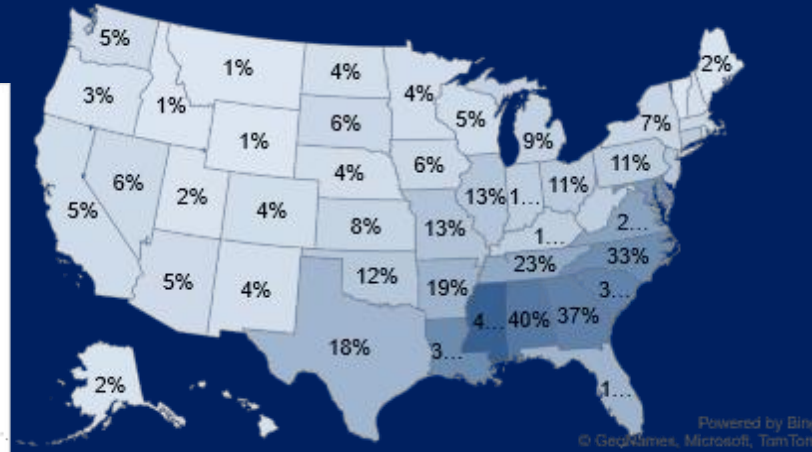
High Enl / Low Grad v. High Enl / High Grad



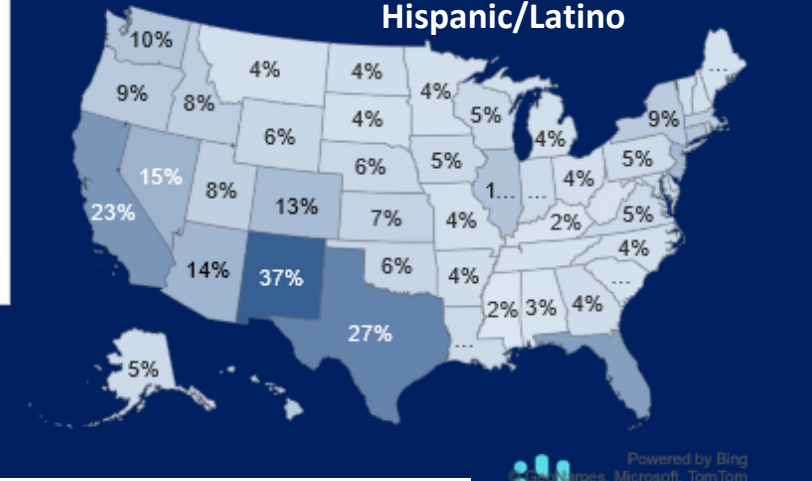
Regional Patterns in Race/Ethnicity and High Enrollment/Low Graduation



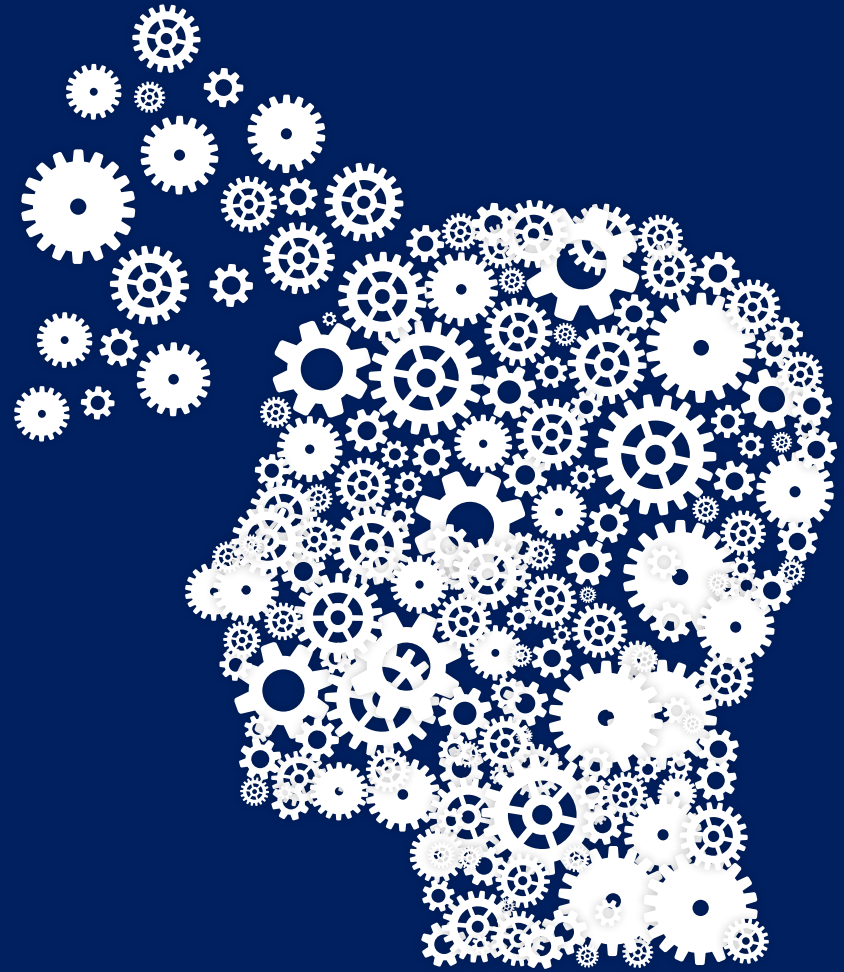
Black/African-American



Hispanic/Latino



Final thoughts



Next Steps: Future Research I

1. Examine the following as it relates to Pell enrollment and success:

- Role of institutional wealth (e.g., endowment)
- Role of instructional and student support expenditures per FTE
- Enrollment and time-to-graduation of new transfer students at four-year institutions
- Public, two-year institutions

2. Examine policy environments that impact variations between, across, and among U.S. states.

Next Steps: Future Research II

3. Move towards a longitudinal analysis—has the median enrollment and the median on-time graduation changed over time and what is related to that?
4. Qualitative analysis on institutions that are successful at serving Pell Students - (PSI)



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QUESTIONS AND DISCUSSION



Variables

Variable	IPEDS Survey	Definition
Pell recipient enrollment	Outcomes Measures	All full-time, first-time degree/certificate-seeking students entering the institution during the 12-month period July 1, 2012 and June 30, 2013 that received a Pell Grant upon entry (adjusted cohort).
Pell recipient four-year graduation rate	Outcomes Measures	Number of the adjusted cohort of full-time, first-time Pell recipients receiving an award at 4 years [AY 2012-13 cohort (as of August 31, 2016)]
Control of institution	IC Header	A classification of whether an institution is operated by publicly elected or appointed officials or by privately elected or appointed officials and derives its major source of funds from private sources.
State	General Information	US Postal Service state abbreviation.
Tuition and fees	Institutional Characteristics	Published tuition and fees.
Average Pell Grant awarded	Student Financial Aid	Average amount of Pell grant aid awarded to full-time, first-time degree/certificate-seeking undergraduate students.
12-month FTE enrollment	12-Month Enrollment / AY 2012-13	The full-time-equivalent (FTE) enrollment is the sum of the institutions' FTE undergraduate enrollment and FTE graduate enrollment (as calculated from or reported on the 12-month Enrollment component) plus the reported FTE of doctoral professional practice students. Undergraduate and graduate FTE are estimated using 12-month instructional activity (credit and/or clock hours).



Variables

Variable	IPEDS Survey	Definition
Student:Faculty Ratio	Fall Enrollment / Fall 2012	<p>Student-to-faculty ratio - Total FTE students not in graduate or professional programs divided by total FTE instructional staff not teaching in graduate or professional programs.</p> <p>Total FTE students is equal to the number of full-time students plus 1/3 the number of part-time students.</p>
Undergraduate gender	Fall Enrollment / Fall 2012	The number of men and women enrolled as undergraduate students at the institution as of fall 2012; created a percentage men and percentage women of total undergraduate population.
Undergraduate race/ethnicity	Fall Enrollment / Fall 2012	The number of students by racial/ethnic groups enrolled as undergraduate students at the institution as of fall 2012; created a percentage of total undergraduate population for each race/ethnicity.
Admission rate	Admissions	The number of first-time, degree/certificate-seeking undergraduate students who were admitted divided by those that applied for the fall period.
Yield rate	Admissions	The number of first-time, degree/certificate-seeking undergraduate students who enrolled (full or part-time) divided by those that were admitted for the fall period.



Variables

Variable	IPEDS Survey	Definition
Full-time retention rate	Fall Enrollment	The full-time retention rate is the percent of the (fall full-time cohort from the prior year minus exclusions from the fall full-time cohort) that re-enrolled at the institution as either full- or part-time in the current year.



References

- Association of Community College Trustees. (n.d.). Pell Grant eligibility changes. Retrieved from <https://www.acct.org/files/Advocacy/Factsheets%20and%20Summaries/pell%20grant%20eligibility%20changes%20website.pdf>
- Belfield, C., Jenkins, P. D., & Lahr, H. E. (2016). Momentum: The academic and economic value of a 15-credit first-semester course load for college students in Tennessee.
- Baum, S., Ma, J., Pender, M., & Libassi, C. (2018). Trends in Student Aid 2018, New York: The College Board. Retrieved from <https://research.collegeboard.org/pdf/trends-student-aid-2018-full-report.pdf>
- Carnevale A., Rose S. J., and Cheah B., The College Payoff: Education, Occupations, Lifetime Earnings, Center on Education and the Workforce, (Washington, D.C.: Georgetown University, 2014), <https://cew.georgetown.edu/wp-content/uploads/2014/11/collegepayoff-complete.pdf>
- Davidson, J. C., and Blankenship, P. (2017). Initial academic momentum and student success: Comparing 4- and 2- year students. *Community College Journal of Research and Practice*, Vol 41(8), 467-480
- Dortch, C. (2018). Federal Pell Grant Program of the Higher Education Act: Primer. CRS Report R45418, Version 2. Updated. Congressional Research Service.
- Elliott, W., & Lewis, M. K., 2015. The real college debt crisis: How student borrowing threatens financial well-being and erodes the American dream (Praeger Publishers, Santa Barbara, California).
- Eng, A., & Matsudaira, J. (2021). Pell Grants and Student Success: Evidence from the Universe of Federal Aid Recipients. *Journal of Labor Economics*, 39(S2), S413-S454.
- Hanson, Melanie. "Pell Grant Statistics" EducationData.org, November 18, 2021, <https://educationdata.org/pell-grant-statistics>.
- Irwin, V., NCES; Zhang, J., Wang, X., Hein, S., Wang, K., Roberts, A., York, C., AIR; Barmer, A., Bullock Mann, F., Dillig, R., and Parker, S., RTI (May 2020). U.S. Department of Education, Report on the Condition of Education 2021. Publication# NCES 2021144. https://nces.ed.gov/programs/digest/d18/tables/dt18_326.27.asp
- Katsinas, S. G., Davis, J. E., Friedel, J. N., Koh, J. P., & Grant, P. D. (2013). The impact of new Pell Grant restrictions on community colleges: A three state study of Alabama, Arkansas, and Mississippi.
- Ma, Jennifer and Matea Pender (2021), *Trends in College Pricing and Student Aid 2021*, New York: College Board. © 2021 College Board.
- Nichols, A. H. (2015). The Pell Partnership: Ensuring a shared Responsibility for Low-income Student Success. *Education Trust*.
- Nichols, A. H., & Schak, J. O. (2018). Degree Attainment for Black Adults: National and State Trends. *Education Trust*.
- Park, R. S. E., & Scott-Clayton, J. (2018). The impact of Pell Grant eligibility on community college students' financial aid packages, labor supply, and academic outcomes. *Educational Evaluation and Policy Analysis*, 40(4), 557-585.
- Postsecondary Value Commission. (2021). Equitable value: Promoting economic mobility and social justice through postsecondary education. *Institute for Higher Education Policy and Bill & Melinda Gates Foundation*.
- Wright-Kim, J., Perna, L. W., & Ruiz, R. (2022). Institutional characteristics and bachelor's degree completion of pell grant recipients. *Journal of College Student Retention: Research, Theory & Practice*, 23(4), 1042-1077.
- Womack, B. (2018). Predatory Student Lending: The Disparate Impact on Minorities' Higher Education Plans. *Pub. Int. L. Rep.*, 24, 43.
- Yang, F., and Mao Y. (2021). Which factors impact Pell Grant students' persistence and graduation? *Journal of Higher Education Theory and Practice*, Vol. 21(3), 111-122.

