



The Community College Penalty and Bachelor's Degree Completion: Fact or Fiction?

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Our Mission

To provide objective and reliable evidence for Illinois P-20 education policy making and program development.

Ensuring Research-Informed Education Policy for Illinois

Community College Penalty and Bachelor's Degree Completion?

- Penalty-Community college students are less likely to earn a bachelor's degree than direct entrants to four-year colleges.
- Penalty seems to be related to the point at which the given study commences tracking outcomes
 - At initial community college enrollment
 - After vertical transfer
- Wide variation in college readiness among community college enrollees
- Observationally equivalent groups
- One cannot earn a bachelor's degree at a community college
- Parallel point of entry and time allotted for degree completion

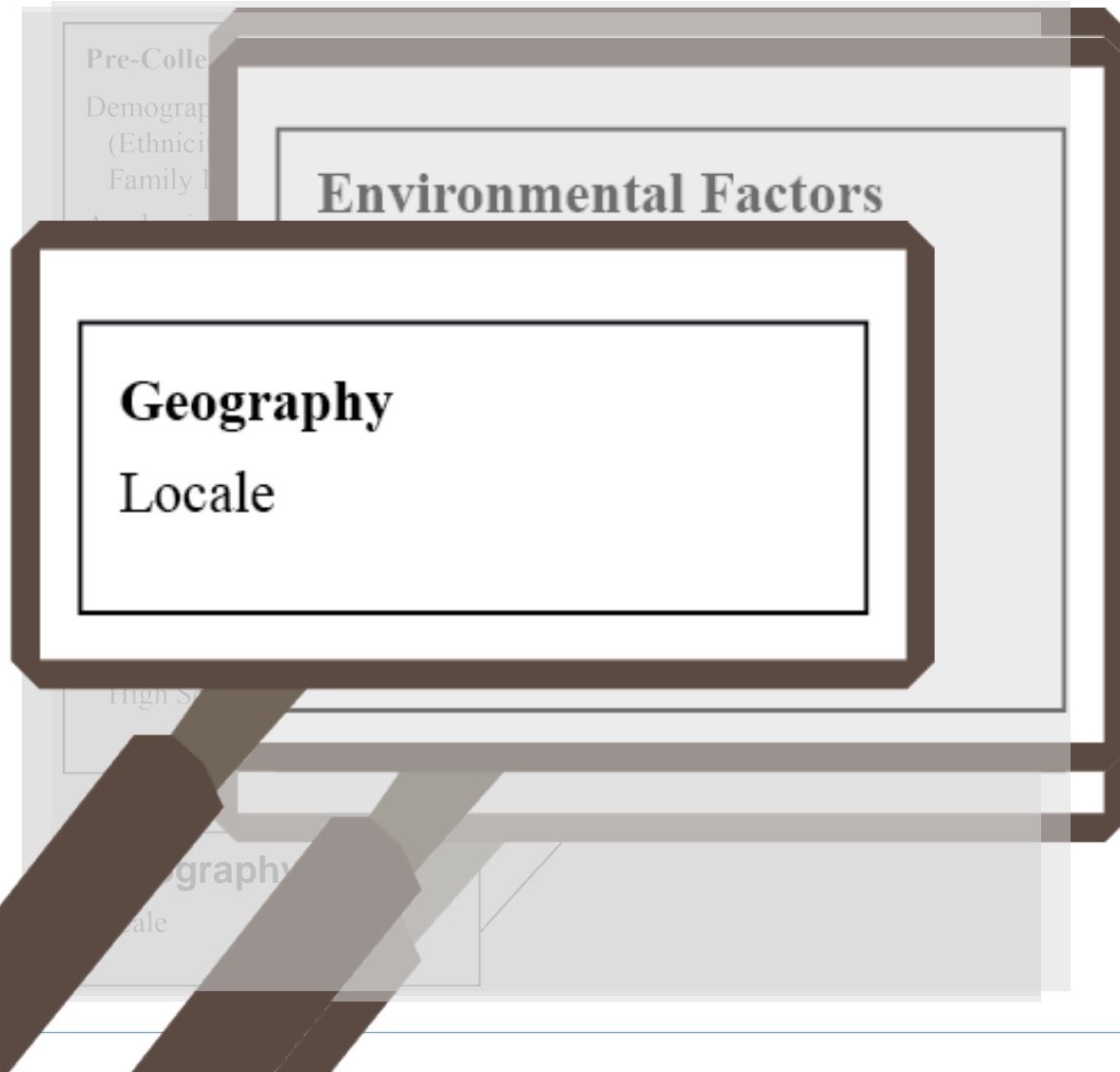
Observationally Equivalent Groups

- **Treatment group** ($n=2,154$): those initially enrolling at a community college FT, maintaining that enrollment through their 1st and 2nd years, and then transferring to a four-year college (no lateral transfers).
- **Comparison group** ($n=21,522$): rising four-year college juniors with a similar pattern of full-time enrollment (no lateral transfers)

Data Sources

- ACT HS Class of 2003
 - ACT Scores
 - Student Interest Profiler
- National Student Clearinghouse
 - Enrollment
 - Degree completion
- Illinois Interactive Report Card
- Barron's

Propensity Score Matching Model



Matching Approach

- Exact match on high school
- Used propensity scores to find suitable matches
- Nearest neighbor (one-to-one)
- Caliper (.25 standard deviation units)
- Replacement (allows a comparison group member to be matched to more than one treatment group member)

Post-Treatment Adjustment

- Controlled for college context
- Exact match on the selectivity (Barron's) of their undergraduate college
 - Large differences in bachelor's completion by selectivity level even after controlling for academic preparation (Lichtenberger & Dietrich, 2012)
- This approach is theoretically supported by Flores and Flores-Lagunes (2009) and Frangakis and Rubin (2002)

Comparing the Matched Pairs

For each community college transfer student we found a rising four-year college junior:

- With a similar profile based on key demographic, academic, and environmental factors.
- Graduated from the same high school
- Enrolled at a similarly selective four-year college (in many cases it was the same college)

Research Question

1. Is there a community college penalty with regard to bachelor's degree completion after achieving sufficient balance between the community college transfer students and the rising four-year college juniors?

Differences in Demographics Prior to Match

| | Prior to Matching |
|--------------------------------------|-------------------------|
| | Standardized Difference |
| Control | |
| Race: White | 26.32 |
| Race: Latino | -5.43 |
| Race: Asian | -18.16 |
| Race: African American | -21.65 |
| Race: Other | 3.27 |
| Gender: Male | 8.19 |
| Family Income: High \$80k+ | -32.37 |
| Family Income: Mid High \$50k-<\$80k | 9.95 |
| Family Income: Mid Low \$30k-<\$50k | 16.27 |
| Family Income: Low \$<30k | 6.70 |
| Family Income: Missing | 0.00 |

* Cells are shaded according to their difference from zero

Difference favoring 4-year group



Difference favoring community college group

Differences in Academic Factors Prior to Match

| | Prior to Matching |
|---------------------------|-------------------------|
| Control | Standardized Difference |
| HS GPA: 3.5+ | -37.07 |
| HS GPA: 3.0-3.4 | 11.99 |
| HS GPA: 2.5-2.9 | 19.51 |
| HS GPA: <2.5 | 22.23 |
| HS GPA: Missing | 4.71 |
| ACT Math | -80.05 |
| ACT English | -80.11 |
| ACT Reading | -62.94 |
| ACT Science | -67.67 |
| ACT Composite | -84.18 |
| HS Program: College Prep | -27.99 |
| HS Program: CTE | 19.25 |
| HS Program: General | 21.35 |
| HS Program: Missing | 4.65 |
| HS Class Rank: Top 25% | -33.93 |
| HS Class Rank: Second 25% | 26.22 |
| HS Class Rank: Third 25% | 22.49 |
| HS Class Rank: Bottom 25% | 0.00 |
| HS Class Rank: Missing | 4.71 |

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Difference favoring 4-year group



Difference favoring community college group

Differences in Environmental Factors Prior to Match

| | Prior to Matching |
|---------------------------|-------------------------|
| | Standardized Difference |
| Control | |
| Work Expectation: Yes | 4.05 |
| Work Expectation: No | -9.12 |
| Work Expectation: Missing | 4.86 |
| Aid Expectation: Yes | -2.06 |
| Aid Expectation: No | -2.83 |
| Aid Expectation: Missing | 2.44 |
| Number of Siblings | -3.57 |
| Locale: Chicago | -27.11 |
| Locale: Other Urban | 0.00 |
| Locale: Suburban | -29.63 |
| Locale: Town | 32.90 |
| Locale: Rural | 35.65 |

* Cells are shaded according to their difference from zero

Difference favoring 4-year group



Difference favoring community college group

Differences in Institutional Selectivity Prior to Match

| Barron's Institutional Selectivity | Prior to Matching |
|------------------------------------|-------------------------|
| | Standardized Difference |
| Barron's: Most/Highly Competitive | -49.15 |
| Barron's: Very Competitive | -34.98 |
| Barron's: Competitive | 60.94 |
| Barron's: Less/Non Competitive | 21.32 |
| Barron's: Other | 14.36 |

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Difference favoring 4-year group



Difference favoring community college group



- Rising four-year juniors were more likely to be at more competitive institutions.
- Community college transfer were more likely to be at less competitive institutions.

Differences in Demographics After Match

| | Prior to Matching | After Match |
|--------------------------------------|-------------------------|-------------------------|
| | Standardized Difference | Standardized Difference |
| Control | | |
| Race: White | 26.32 | -4.91 |
| Race: Latino | -5.43 | 0.00 |
| Race: Asian | -18.16 | 5.44 |
| Race: African American | -21.65 | 0.00 |
| Race: Other | 3.27 | 0.00 |
| Gender: Male | 8.19 | 4.03 |
| Family Income: High \$80k+ | -32.37 | 2.63 |
| Family Income: Mid High \$50k-<\$80k | 9.95 | 7.19 |
| Family Income: Mid Low \$30k-<\$50k | 16.27 | 0.00 |
| Family Income: Low \$<30k | 6.70 | 0.00 |
| Family Income: Missing | 0.00 | -8.51 |

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Difference favoring 4-year group



Difference favoring community college group

Differences in Academic Factors after Match

| | Prior to Matching | After Match |
|---------------------------|-------------------------|-------------------------|
| | Standardized Difference | Standardized Difference |
| Control | | |
| HS GPA: 3.5+ | -37.07 | 2.24 |
| HS GPA: 3.0-3.4 | 11.99 | 0.00 |
| HS GPA: 2.5-2.9 | 19.51 | 9.08 |
| HS GPA: <2.5 | 22.23 | 0.00 |
| HS GPA: Missing | 4.71 | -6.72 |
| ACT Math | -80.05 | -3.04 |
| ACT English | -80.11 | -2.30 |
| ACT Reading | -62.94 | -0.40 |
| ACT Science | -67.67 | -0.29 |
| ACT Composite | -84.18 | -1.14 |
| HS Program: College Prep | -27.99 | 0.00 |
| HS Program: CTE | 19.25 | 0.00 |
| HS Program: General | 21.35 | 10.21 |
| HS Program: Missing | 4.65 | -8.92 |
| HS Class Rank: Top 25% | -33.93 | 0.00 |
| HS Class Rank: Second 25% | 26.22 | 2.22 |
| HS Class Rank: Third 25% | 22.49 | 3.59 |
| HS Class Rank: Bottom 25% | 0.00 | 0.00 |
| HS Class Rank: Missing | 4.71 | -8.92 |

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Difference favoring 4-year group



Difference favoring community college group



Differences in Environmental Factors After Match

| | Prior to Matching | After Match |
|---------------------------|-------------------------|-------------------------|
| | Standardized Difference | Standardized Difference |
| Control | | |
| Work Expectation: Yes | 4.05 | 12.02 |
| Work Expectation: No | -9.12 | -7.08 |
| Work Expectation: Missing | 4.86 | -6.89 |
| Aid Expectation: Yes | -2.06 | 6.17 |
| Aid Expectation: No | -2.83 | 2.93 |
| Aid Expectation: Missing | 2.44 | -6.89 |
| Number of Siblings | -3.57 | 1.79 |
| Locale: Chicago | -27.11 | 0.00 |
| Locale: Other Urban | 0.00 | 0.00 |
| Locale: Suburban | -29.63 | 0.00 |
| Locale: Town | 32.90 | 0.00 |
| Locale: Rural | 35.65 | 0.00 |

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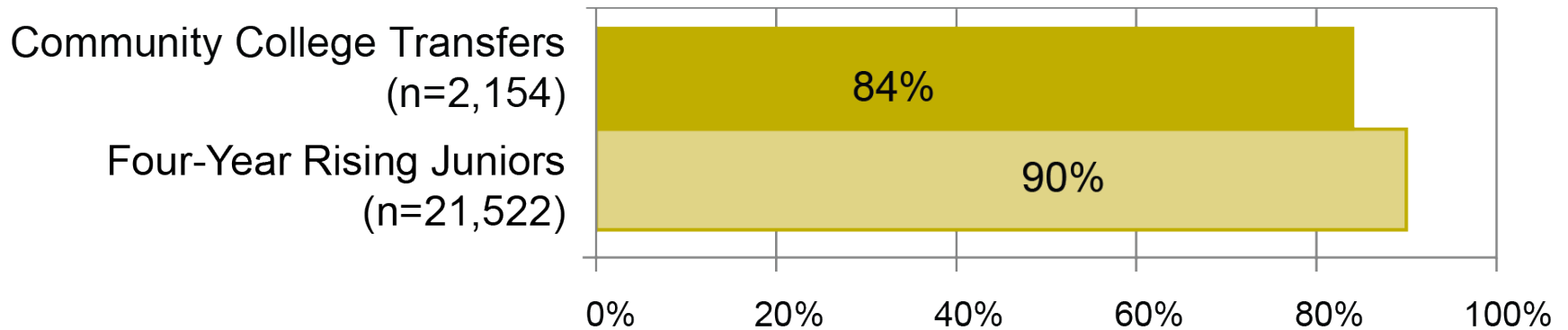
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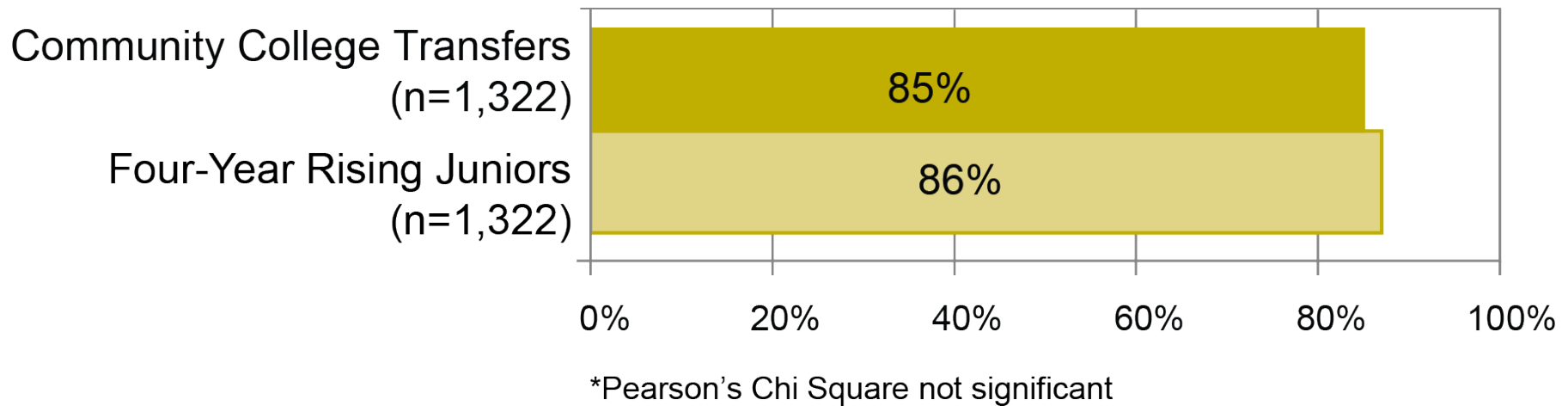
- After the Post-Treatment Adjustment- perfect balance on institutional selectivity.

Bachelor's Completion Rates Prior to Match



* Statistically significant based on Pearson's Chi Square

Bachelor's Completion Rates after Match



Summary

- The profile of CC transfers was significantly different than that of the rising four-year college juniors prior to matching.
- 84% of the CC transfers had earned a bachelor's degree within 5 academic years of transitioning to a four-year college.
- The match process provided for sufficient balance between the two groups.
- After matching on key factors, *no community college penalty was evident.*

Policy Implications

- Continue to develop baseline information about statewide transfer performance.
- Set goals for institutional performance related to vertical transfer.
 - Community colleges and four-year institutions
- Help students face their financial aid future by developing information and incentives spanning undergraduate enrollment.
- Full-time enrollment for degree seeking students



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