Comparing the bachelor’s completion rates of native and transfer students using multiple informational sources

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Frisco, Texas
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Part of a demonstration project funded through the Longitudinal Data System Grant

• Funded by Illinois Board of Higher Education, managed by DePaul, implemented by IERC
• Part of the P-20 to Workforce initiative in Illinois
• Project intent is:
  – Gain experience in using a longitudinal data sets
  – Explore issues in merging data
  – Demonstrate types of questions that can be addressed
  – Identify additional data elements institutions would want to use
Project Concept

• Hybrid approach combining:
  – high school graduating class (pipeline)
  – institutional-level records (college cohort)

• Using multiple sources of information

• Includes both public and private high school graduates
Data Sources

• College level data similar to what colleges will have to report to the state
  – Enrollment
  – Degree Completion
  – Demographics
  – Financial Aid Markers and Transfer Hours

• Illinois High School Class of 2003 (source IBHE and ACT)
  – Prairie State Achievement Examination/ACT
    • Student Information
    • College Readiness Measures
  – National Student Clearinghouse
    • Enrollment/Transfer Patterns
    • Degree completion beyond DePaul
Benefits of the Approach

• Additional information on the transfer students that DePaul does not collect (ACT scores).

• Explore churn among the native students, specifically how different enrollment/transfer patterns impact bachelor’s completion.

• Augment institutional data sources with degree completion information from the NSC for both transfer students and native students
  – Degrees completed elsewhere prior to and after enrolling at DePaul
Conceptual Diagram of Full Study

HS Graduating Class Cohort Data → Progress through Higher Education → Earnings and Employment

SSN, Name, Race, Gender, DOB

School Code (RCDTS) → High School Characteristics

College Code (FICE) → College Characteristics
How well did the pipeline information match to the institutional data?

NSC takes a conservative approach in their matching that virtually eliminates Type I error but introduces Type II error.
Research Questions

• What were the predominant mobility patterns among the transfer students?
  – How did those patterns factor into bachelor’s degree completion?

• What were the predominate mobility patterns among the native students?
  – How did those patterns factor into bachelor’s degree completion?

• What were the differences between the native and transfer students in terms of bachelor’s degree completion?
Analyses

• Descriptive statistics

• Chi-Square Automatic Interaction Detection (CHAID)
  – Predicting and modeling technique similar to regression
  – Form of decision tree
  – Produces graphical tree to visually depict the relationship

• Survival analysis
  – Life Tables (1-survival)
Profile of the Two Groups

- **Public High School**: 76.0% Native Students, 81.4% Transfer Students
- **Female**: 60.4% Native Students, 50.9% Transfer Students
- **White or Asian**: 67.7% Native Students, 74.2% Transfer Students
- **Pell Eligible**: 33.6% Native Students, 22.2% Transfer Students
- **MAP Eligible**: 52.6% Native Students, 30.8% Transfer Students
- **Remedial Math**: 22.9% Native Students, 5.7% Transfer Students
- **College Readiness**:
  - **Math**: 48.5% Native Students, 56.9% Transfer Students
  - **English**: 76.7% Native Students, 72.0% Transfer Students
  - **Reading**: 58.2% Native Students, 72.0% Transfer Students
  - **Science**: 27.0% Native Students, 32.9% Transfer Students
The Transfer Subgroups (N=704)

- Vertical Transfer (community college to DePaul) - 42.2%
- Lateral Transfer (other four-year to DePaul) - 26.7%
- Reverse to Vertical (other four-year to community college to DePaul) - 24.0%
- Vertical to Lateral Transfer (community college to other four-year to DePaul) - 7.1%
# ACT Scores (Native vs. Transfer Subgroups)

<table>
<thead>
<tr>
<th>Transfer Status</th>
<th>ACT English</th>
<th>ACT Math</th>
<th>ACT Reading</th>
<th>ACT Science</th>
<th>ACT Composite</th>
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<tbody>
<tr>
<td>Native Student</td>
<td>23.3</td>
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<td>23.6</td>
<td>22.1</td>
<td>23.0</td>
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<tr>
<td>CC to DePaul</td>
<td>20.0</td>
<td>20.4</td>
<td>20.5</td>
<td>20.2</td>
<td>20.4</td>
</tr>
<tr>
<td>Other 4yr to DePaul</td>
<td>23.6</td>
<td>23.2</td>
<td>24.2</td>
<td>22.4</td>
<td>23.5</td>
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<tr>
<td>Other 4yr to CC to DePaul</td>
<td>22.7</td>
<td>22.6</td>
<td>23.1</td>
<td>22.8</td>
<td>22.9</td>
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<tr>
<td>CC to Other 4yr to DePaul</td>
<td>19.4</td>
<td>19.9</td>
<td>19.6</td>
<td>20.1</td>
<td>19.9</td>
</tr>
</tbody>
</table>
Gender and Transfer Status

- Native Student: 60.4% Female, 39.6% Male
- CC to DePaul: 49.1% Female, 50.9% Male
- Other 4yr to DePaul: 57.5% Female, 42.5% Male
- Other 4yr to CC to DePaul: 47.2% Female, 52.8% Male
- CC to Other 4yr to DePaul: 45.9% Female, 54.1% Male
School Type and Transfer Status

- Native Student: 24.0% Private, 76.0% Public
- CC to DePaul: 11.8% Private, 88.2% Public
- Other 4yr to DePaul: 24.7% Private, 75.3% Public
- Other 4yr to CC to DePaul: 26.4% Private, 73.6% Public
- CC to Other 4yr to DePaul: 8.3% Private, 91.7% Public
Race/Ethnicity and Transfer Status

- Native Student: 72.5% White and Asian, 27.5% Traditionally Underserved
- CC to DePaul: 82.8% White and Asian, 17.2% Traditionally Underserved
- Other 4yr to DePaul: 81.8% White and Asian, 18.2% Traditionally Underserved
- Other 4yr to CC to DePaul: 80.3% White and Asian, 19.7% Traditionally Underserved
- CC to Other 4yr to DePaul: 78.4% White and Asian, 21.6% Traditionally Underserved
High School GPA

Native Student
- 39.8% 3.5-4.0
- 37.0% 3.0-3.4
- 16.8% 2.5-2.9
- 6.4% <2.5

CC to DePaul
- 20.1% 3.5-4.0
- 31.7% 3.0-3.4
- 27.6% 2.5-2.9
- 20.6% <2.5

Other 4yr to DePaul
- 31.1% 3.5-4.0
- 40.0% 3.0-3.4
- 20.0% 2.5-2.9
- 8.9% <2.5

Other 4yr to CC to DePaul
- 27.3% 3.5-4.0
- 30.9% 3.0-3.4
- 31.8% 2.5-2.9
- 10.0% <2.5

CC to Other 4yr to DePaul
- 22.2% 3.5-4.0
- 33.3% 3.0-3.4
- 18.5% 2.5-2.9
- 25.9% <2.5
Hours Transferred to DePaul

- CC to DePaul: 81.8 hrs
- Other 4yr to DePaul: 69.4 hrs
- Other 4yr to CC to DePaul: 91.3 hrs
- CC to Other 4yr to DePaul: 91.5 hrs
Bachelor’s Degree Completion

<table>
<thead>
<tr>
<th></th>
<th>Native Students</th>
<th>Transfer Students</th>
</tr>
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<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>Mean Time to BA</td>
<td>Mean Time to BA</td>
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<tr>
<td></td>
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</tr>
<tr>
<td>76.3% %</td>
<td>78.9% %</td>
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</tr>
<tr>
<td>23.7% %</td>
<td>21.9% %</td>
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<tr>
<td>7.9% %</td>
<td>4.7% %</td>
<td></td>
</tr>
<tr>
<td>68.4% %</td>
<td>73.8% %</td>
<td></td>
</tr>
</tbody>
</table>

- No Degree
- Non-DePaul BA
- DePaul

- Total
- Mean Time to BA
- Years
Transfer Students Degree Completion

- CC to DePaul: 77.2%
- Other 4yr to DePaul: 70.7%
- Other 4yr to CC to DePaul: 73.2%
- CC to Other 4yr to DePaul: 67.6%

- Total for CC to DePaul: 80.1%
- Total for Other 4yr to DePaul: 77.9%
- Total for Other 4yr to CC to DePaul: 76.6%
- Total for CC to Other 4yr to DePaul: 70.3%
Transfer Hour Categories

- Less than a Year: 14.6%
- One Year to less than Two Years: 36.2%
- Two or more Years: 49.1%

Bachelor’s Completion

- Less than a Year: 65%
- One Year to less than Two Years: 77%
- Two or more Years: 86%

Legend:
- Less than a Year
- One Year to less than Two Years
- Two or more Years
## College Readiness in Mathematics and Bachelor’s Degree Completion

### Transfer Hours Category

1 year to less than 2 Years; Less than a Year; <missing>

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<td>508</td>
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2 or more years

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**Less than a Year; <missing>**

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**2 or more years**

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Public High School Students Outperformed their Similarly Ready Peers from Private High Schools

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<table>
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<td>No BA</td>
<td>12.7</td>
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<tr>
<td>BA from any institution</td>
<td>87.3</td>
<td>89</td>
</tr>
<tr>
<td>Total</td>
<td>5.6</td>
<td>102</td>
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</table>
Churn among the Native Students

• Undergraduate reverse transfer-15.8%
• Summer sessioners-15.5%
• Concurrent enrollment-3.1%
• Lateral transfers (prior to BA completion)-15.3%
• Post-Bac reverse transfers-6.0%
Churn among the Native Students

- Concurrent Enrollment – 3.1%
- Summer Session – 15.5%
  - Undergraduate Reverse Transfer – 15.8%
  - Post-Bachelors Reverse Transfers – 6.0%
  - Lateral Transfers (prior to BA completion) – 15.3%
Churn Among Native Students

Did Not Reverse Transfer

Node 3

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Native CC Summer Sessioner

Not Summer Sessioner

Node 7

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CC Summer Sessioner

Node 8

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Time to Degree Completion

Mean Years to Bachelor’s Degree Completion

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<td>4.2179</td>
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<tr>
<td>CC to DePaul</td>
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<td>Other 4-Year to DePaul</td>
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Time to Degree Completion
Transfer Students Only

Mean Years to Bachelor’s Degree Completion

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<th>Years to Completion</th>
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<td>1 Year to Less than 2 Years</td>
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<tr>
<td>2 or More Years</td>
<td>5.6500</td>
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College Readiness in Math and time to Bachelor’s Degree Completion

Native Student

Transfer Student

Cumulative % Earning Degree

Time to Bachelor’s Degree Completion (Years)

College Ready

Not College Ready
Majors among DePaul Bachelor’s Degree Earners: General Patterns

• The greatest number of degrees was in Business/Accounting (40%).
• Communications/Journalism was next following by Psychology, Social Sciences, and then Education.
• Those five instructional areas covered more than 70% of all degrees awarded by DePaul.
• There weren’t many STEM majors (9%).
Majors among DePaul Bachelor’s Degree Earners: Native Students

• There were more Native Students with Degrees in:
  – Education
  – Visual and Performing Arts
  – Biological Science
  – Physical Science
  – Social Science
  – Public Administration
Majors among DePaul Bachelor’s Degree Earners: Transfer Students

• There were more Transfer Students with Degrees in:
  – Communication/Journalism
  – English
  – Business/Accounting
  – History
Majors among DePaul Bachelor’s Degree Earners: Math Ready

• There were more Math Ready with Degrees in:
  – Business/Accounting
  – CIS
  – Physical and Biological Sciences
  – Visual and Performing Arts
Majors among DePaul Bachelor’s Degree Earners: Not Math Ready

• There were more missing the Math Benchmark with Degrees in:
  – Communication/Journalism
  – Psychology
Future Work

• Integrate parallel information for a Illinois public four-year institution

• Explore employment outcomes (IDES)
  – By major
  – By enrollment type (native v. transfer)

• Utilize more recent institutional cohorts
  – High school course-taking patterns
  – More detailed financial aid information
Questions

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