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

Eric Lichtenberger, IERC
Gerry McLaughlin, DePaul University
Liz Sanders, DePaul University
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Part of a demonstration project funded through the ILDS Grant

• Funded by IBHE, managed by DePaul, implemented by IERC
• Part of the p-20 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 ILDS (parallels IHEC reporting requirements)
  – Enrollment
  – Degree Completion
  – Demographics
  – Financial Aid Markers and Transfer Hours

• Illinois High School Class of 2003 (source IBHE and ACT)
  – PSAE/ACT
    • Student Information
    • College Readiness Measures
  – National Student Clearinghouse (approximates full ILDS database)
    • Enrollment/Transfer Patterns
    • Degree completion beyond DePaul
Benefits of the Approach

- Additional information on the transfer students that the institution does not collect.
- Explore churn among the native students, specifically how different enrollment 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) → College Code (FICE)

High School Characteristics

College Characteristics
How well did the pipeline information match to the institutional data?

Native Students

- IERC & DePaul: N=1,458
- IERC & NSC: N=1,208
- Matched: 1,199
- Mismatched: 259

Transfer Students

- IERC & DePaul: N=875
- IERC & NSC: N=704
- Matched: 704
- Mismatched: 171

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 enrollment patterns among the transfer students?
  – How did those patterns factor into bachelor’s degree completion?

• What were the predominate enrollment 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) vs. 81.4% (Transfer Students)
- **Female**: 50.9% (Native Students) vs. 60.4% (Transfer Students)
- **White or Asian**: 67.7% (Native Students) vs. 74.2% (Transfer Students)
- **Pell Eligible**: 33.6% (Native Students) vs. 22.2% (Transfer Students)
- **MAP Eligible**: 52.6% (Native Students) vs. 30.8% (Transfer Students)
- **Remedial Math**: 22.9% (Native Students) vs. 5.7% (Transfer Students)
- **College Readiness**
  - **Math**: 48.5% (Native Students) vs. 56.9% (Transfer Students)
  - **English**: 72.0% (Native Students) vs. 76.7% (Transfer Students)
  - **Reading**: 58.2% (Native Students) vs. 72.0% (Transfer Students)
  - **Science**: 32.9% (Native Students) vs. 27.0% (Transfer Students)
Bachelor’s Degree Completion

- Native Students
  - Mean Time to BA: 4.3 Years
  - Total: 76.3%
    - No Degree: 23.7%
    - Non-DePaul BA: 7.9%
    - DePaul: 68.4%

- Transfer Students
  - Mean Time to BA: 5.1 Years
  - Total: 78.9%
    - No Degree: 21.9%
    - Non-DePaul BA: 4.7%
    - DePaul: 73.8%
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%

The transfer subgroups didn’t matter as much as the number of credit hours transferred into DePaul. However, the more convoluted patterns were associated with lower BA completion rates.
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%
College Readiness in Mathematics was Significant in terms of Overall BA Completion

<table>
<thead>
<tr>
<th>Transfer Hours Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year to less than 2 Years; Less than a Year; &lt;missing&gt;</td>
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<tr>
<td>2 or more years</td>
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### Node 3

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
<th>n</th>
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<tbody>
<tr>
<td>No BA</td>
<td>31.2</td>
<td>230</td>
</tr>
<tr>
<td>BA from any institution</td>
<td>68.8</td>
<td>508</td>
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<tr>
<td><strong>Total</strong></td>
<td>40.4</td>
<td>738</td>
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### Node 4

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<th>Category</th>
<th>%</th>
<th>n</th>
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</thead>
<tbody>
<tr>
<td>No BA</td>
<td>12.7</td>
<td>13</td>
</tr>
<tr>
<td>BA from any institution</td>
<td>87.3</td>
<td>89</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5.6</td>
<td>102</td>
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Public High School Students Outperformed their Similarly Ready Peers from Private High Schools

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<tr>
<th>High School Type</th>
<th>Public: &lt;missing&gt;</th>
<th>Private</th>
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<td><strong>Node 3</strong></td>
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<tr>
<td>Category</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>No BA</td>
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<td>131</td>
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<tr>
<td>BA from any institution</td>
<td>83.7</td>
<td>673</td>
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<tr>
<td>Total</td>
<td>44.0</td>
<td>804</td>
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</table>

| **Node 4**            |                   |         |
| Category              | %     | n  |      |      |
| No BA                 | 25.8  | 47 |      |      |
| BA from any institution | 74.2 | 135|      |      |
| Total                 | 10.0  | 182|      |      |
Churn among the Native Students
(N=1,199)

• 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

<table>
<thead>
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<th>Category</th>
<th>%</th>
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<tbody>
<tr>
<td>No BA</td>
<td>12.7</td>
<td>115</td>
</tr>
<tr>
<td>BA from any institution</td>
<td>87.3</td>
<td>792</td>
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<tr>
<td>Total</td>
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Native CC Summer Sessioner

Not Summer Sessioner

Node 7

<table>
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<tr>
<th>Category</th>
<th>%</th>
<th>n</th>
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</thead>
<tbody>
<tr>
<td>No BA</td>
<td>13.9</td>
<td>107</td>
</tr>
<tr>
<td>BA from any institution</td>
<td>86.1</td>
<td>662</td>
</tr>
<tr>
<td>Total</td>
<td>64.1</td>
<td>769</td>
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</table>

CC Summer Sessioner

Node 8

<table>
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<tr>
<th>Category</th>
<th>%</th>
<th>n</th>
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</thead>
<tbody>
<tr>
<td>No BA</td>
<td>5.8</td>
<td>8</td>
</tr>
<tr>
<td>BA from any institution</td>
<td>94.2</td>
<td>130</td>
</tr>
<tr>
<td>Total</td>
<td>11.5</td>
<td>138</td>
</tr>
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</table>
Time to Degree Completion

<table>
<thead>
<tr>
<th>Transfer Status</th>
<th>Mean Years to Bachelor’s Degree Completion</th>
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</thead>
<tbody>
<tr>
<td>Native Student</td>
<td>4.2179</td>
</tr>
<tr>
<td>CC to DePaul</td>
<td>5.5221</td>
</tr>
<tr>
<td>Other 4-Year to DePaul</td>
<td>4.8458</td>
</tr>
<tr>
<td>Other 4-Year to CC to DePaul</td>
<td>5.7500</td>
</tr>
</tbody>
</table>
Time to Degree Completion
Transfer Students Only

<table>
<thead>
<tr>
<th>Transfer Hours</th>
<th>Mean Years to Bachelor’s Degree Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a Year</td>
<td>4.9659</td>
</tr>
<tr>
<td>1 Year to Less than 2 Years</td>
<td>5.0750</td>
</tr>
<tr>
<td>2 or More Years</td>
<td>5.6500</td>
</tr>
</tbody>
</table>
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
Future Work

• Integrate parallel information for the 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