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

Eric Lichtenberger
Gerry McLaughlin
Liz Sanders
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

1. HS Graduating Class Cohort Data
   - SSN, Name, Race, Gender, DOB
   - School Code (RCDTS)

2. Progress through Higher Education
   - SSN, Name, Race, Gender, DOB

3. Earnings and Employment
   - College Code (FICE)

4. High School Characteristics

5. 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

259

1,199

9

Transfer Students

IERC & DePaul N=875

IERC & NSC N=704

171

704

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Native Students</th>
<th>Transfer Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public High School</td>
<td>76.0%</td>
<td>81.4%</td>
</tr>
<tr>
<td>Female</td>
<td>60.4%</td>
<td>50.9%</td>
</tr>
<tr>
<td>White or Asian</td>
<td>67.7%</td>
<td>74.2%</td>
</tr>
<tr>
<td>Pell Eligible</td>
<td>33.6%</td>
<td>22.2%</td>
</tr>
<tr>
<td>MAP Eligible</td>
<td>52.6%</td>
<td></td>
</tr>
<tr>
<td>Remedial Math</td>
<td>22.9%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Math</td>
<td>56.9%</td>
<td>48.5%</td>
</tr>
<tr>
<td>College Readiness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>76.7%</td>
<td>72.0%</td>
</tr>
<tr>
<td>Reading</td>
<td>72.0%</td>
<td>58.2%</td>
</tr>
<tr>
<td>Science</td>
<td>32.9%</td>
<td>27.0%</td>
</tr>
</tbody>
</table>

- **Native Students**
- **Transfer Students**
Bachelor’s Degree Completion

Native Students
Mean Time to BA
4.3 Years

Transfer Students
Mean Time to BA
5.1 Years

No Degree
Non-DePaul BA
DePaul
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%

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 and Bachelor's Degree Completion

Transfer Hours Category

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

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
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<tr>
<td>No BA</td>
<td>31.2</td>
<td>230</td>
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<tr>
<td>BA from any institution</td>
<td>68.8</td>
<td>508</td>
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<tr>
<td>Total</td>
<td>40.4</td>
<td>738</td>
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</table>

2 or more years

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
<th>n</th>
</tr>
</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>Total</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

<table>
<thead>
<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>
<tr>
<td>Category</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>No BA</td>
<td>16.3</td>
<td>131</td>
</tr>
<tr>
<td>BA from any institution</td>
<td>83.7</td>
<td>673</td>
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<td>Total</td>
<td>44.0</td>
<td>804</td>
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<table>
<thead>
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<th>Node 4</th>
<th>Category</th>
<th>%</th>
<th>n</th>
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<tbody>
<tr>
<td>No BA</td>
<td>25.8</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>BA from any institution</td>
<td>74.2</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10.0</td>
<td>182</td>
<td></td>
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</table>
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>
<tr>
<th>Category</th>
<th>%</th>
<th>n</th>
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</thead>
<tbody>
<tr>
<td>No BA</td>
<td>12.7</td>
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<tr>
<td>BA from any institution</td>
<td>87.3</td>
<td>792</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>75.6</strong></td>
<td><strong>907</strong></td>
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</table>

Native CC Summer Sessioner

Not Summer Sessioner

Node 7

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
<th>n</th>
</tr>
</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><strong>Total</strong></td>
<td><strong>64.1</strong></td>
<td><strong>769</strong></td>
</tr>
</tbody>
</table>

CC Summer Sessioner

Node 8

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
<th>n</th>
</tr>
</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><strong>Total</strong></td>
<td><strong>11.5</strong></td>
<td><strong>138</strong></td>
</tr>
</tbody>
</table>
Time to Degree Completion

Mean Years to Bachelor’s Degree Completion

<table>
<thead>
<tr>
<th>Transfer Status</th>
<th>Mean Years</th>
</tr>
</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

Mean Years to Bachelor’s Degree Completion

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean Years</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