Academic Momentum and Traditionally Underrepresented Student Outcomes: Does 15-to-Finish Initiative Make A Difference?

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Background

- Fall 2013, the Board of Regents approved a proposal to adopt the Enrollment Intensity and Student Achievement Campaign, known as 15 to Finish

- Encouraging 18 to 24 year old undergraduate students to enroll at least 15 credits per semester OR 30 credits per year.
Background

Graduate on Time.  
Save money.  
Earn sooner.

Take 15 credits a semester and finish your degree on time!  
Meet with your advisor today.
Background

Getting the Word Out

- Student Orientation
- Institutional Website
- Advising Center
- Poster
- And more
Background

- **Academic Momentum**
  - The initial academic course load and progress, the speed with which undergraduates initially progress in college.
  - Academic momentum significantly affects the likelihood of completing a degree.
  - An effect separate from those of high school academic preparation and family socioeconomic status.
Background

- The Fall 2014 and Fall 2015 outcomes data for the NSHE institutions indicate that overall this initiative was positively related with student GPA and persistence.

- HOWEVER, one may argue that some students may have challenges to enroll in 15 or more credits, particularly those who have been historically underrepresented in post-secondary education.

- Literature typically employs aggregated data to examine the effects of campus initiatives on student success without disaggregating performance based on demographic variables (Bensimon, 2005; Dowd & Bensimon, 2015).
Purpose of The Study

- To examine the outcomes metrics measured by retention, semester GPA, and cumulative credits by Academic Momentum (≥ 15; < 15), and
- Pell recipient status,
- Race and ethnicity, and
- First-generation status

- To test the effect of 15-to-Finish on student outcomes using censored model
Research Questions

❖ **Study 1**
❖ Compared with their peer counterparts who enrolled < 15 credits in first fall:
  ❖ Were students enrolled in 15 or more credits retained at a higher rate?
  ❖ Did students enrolled in 15 or more credits earn a higher GPA?
  ❖ Did students enrolled in 15 or more credits earn higher cumulative credits?
❖ **BY**
  ❖ Pell recipient status,
  ❖ Race and ethnicity, and
  ❖ First-generation status
Research Questions

- **Study 2**
  - How does the trained credit hour enrollment choice model based on Fall 2010 to Fall 2012 cohort data predict student enrollment behavior in Fall 2013 to Fall 2015?
  - How does predicted enrollment differ from actual enrollment pre- and post-treatment?
  - Are there measurable differences in student performance pre- and post-treatment?
Theoretical Framework

- **Academic Momentum**
  (Credit momentum, gateway momentum, and program momentum)
  - Cliff Adelman (1999, 2006) first introduced the notion of academic momentum.
  - Attewell, Heil, and Reisel (2012): *first-semester attempted credit hours.*
  - Wang, Chan, Phelps, and Washbon (2015) defined it using four components: total attempted credits during the first year, delayed entry, summer enrollment, and first-term GPA.
Theoretical Framework

- Academic Momentum ➞ Integration/Involvement/Engagement
- The amount of physical and psychological energy that a student devotes to the academic experiences.
- The amount of time and effort a student devotes to their studies and other educationally purposeful activities

- Intense enrollment brings a student more integrated into the social and academic life (Tinto, 1975).
- Intense enrollment channels students’ time toward educational pursuits, depth of academic focus, and thus commitment to completion (Astin, 1984).
- The more a student is involved/engaged in the educational experience, the more he/she could gain intellectually and socially (Astin, 1984, 1999; Kuh, 2003).
Theoretical Framework

- **Academic Momentum and Student Outcomes**
  - Higher completion rates for students who took 15 or more credits than 12 in the first term (Belfield, Jenkins, & Lahr, 2016).
  - Especially, strong effects on credit momentum for students of color (Attewell & Monaghan, 2016; Belfield et al., 2016).
  - Students taking heavier course-loads tended to earn higher GPAs and were more likely to remain enrolled after 1 year (Szafran, 2001).
  - Data from the National Educational Longitudinal Survey (NELS:88/2000) indicate that attending part time in the first semester is related to a reduced probability of degree completion (Attewell et al., 2012).
Data Sources

- **Study 1**: Enrollment census data of Fall 2014 FTFT Cohort
- **Study 2**: Enrollment census data of Fall 2010 to Fall 2015
Participants

- **Study 1**: 3,715 first-time, full-time undergraduate degree-seeking students starting Fall 2014, IPEDS cohort of Fall 2014 (Table 1)

- **Study 2**: 19,603 students enrolled from Fall 2010 to Fall 2015
Table 1  
Characteristics of 2014 IPEDS FTFT Cohort

<table>
<thead>
<tr>
<th></th>
<th>Fall 2014 (3716)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>2082</td>
</tr>
<tr>
<td>Male</td>
<td>1634</td>
</tr>
<tr>
<td>Pell Recipient Status</td>
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<tr>
<td>Pell recipient</td>
<td>1347</td>
</tr>
<tr>
<td>Non-Pell recipient</td>
<td>2369</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
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</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>8</td>
</tr>
<tr>
<td>Asian</td>
<td>634</td>
</tr>
<tr>
<td>Black or African American</td>
<td>269</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1104</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>59</td>
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<tr>
<td>Nonresident Alien</td>
<td>82</td>
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<tr>
<td>Two or more races</td>
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<tr>
<td>Unknown</td>
<td>23</td>
</tr>
<tr>
<td>White</td>
<td>1127</td>
</tr>
<tr>
<td>First-Generation Status*</td>
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<tr>
<td>First-Generation</td>
<td>1986</td>
</tr>
<tr>
<td>Non-First-Generation</td>
<td>1575</td>
</tr>
<tr>
<td>Not Indicated</td>
<td>155</td>
</tr>
<tr>
<td>Residency</td>
<td></td>
</tr>
<tr>
<td>IS</td>
<td>3064</td>
</tr>
<tr>
<td>OS</td>
<td>652</td>
</tr>
<tr>
<td>Credit load in first fall term</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>578</td>
</tr>
<tr>
<td>13 - 14</td>
<td>675</td>
</tr>
<tr>
<td>≥ 15</td>
<td>2463</td>
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<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>18.07</td>
</tr>
<tr>
<td>$SD$</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Note: a first-generation student is a student neither of whose parents received a 4-year degree.
Data Analysis

- **Study 1**
  - Descriptive statistics of academic momentum in first fall term
  - One-year, two-year retention, and cumulative university credits
  - By academic momentum, measured by attempted credits (1: $\geq 15$, 0: $< 15$),
  - Pell recipient status (1: ever received Pell, 0: no Pell),
  - Race and ethnicity (Asian/White, Non-Asian/Non-White), and
  - First-generation status (FG, Non-FG)
Data Analysis

- Study 2
  - Training a credit hour enrollment model using Fall 2010 to Fall 2012 census data (pre-treatment)
  - Using trained model to predict sequential enrollment behavior of Fall 2013 to Fall 2015 (post-treatment)
Findings (Study 1)

- Retention Rate by Academic Momentum and Pell Status

![Retention Rate Graph]

- Non-Pell Recipient
- Pell Recipient
Findings

- Semester GPA by Academic Momentum and Pell Status
Findings

- Cumulative Credits by Academic Momentum and Pell Status
## Findings

### Retention by Academic Momentum and FG Status

<table>
<thead>
<tr>
<th></th>
<th>Non-First Generation</th>
<th>First Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Fall</strong></td>
<td>99.6</td>
<td>98.4</td>
</tr>
<tr>
<td><strong>Second Fall</strong></td>
<td>74.7</td>
<td>67.3</td>
</tr>
<tr>
<td><strong>Third Fall</strong></td>
<td>65.7</td>
<td>58.6</td>
</tr>
</tbody>
</table>

- **<15**
- **≥ 15**

**Non-First Generation**

**First Generation**

**Legend**

- First Fall
- Second Fall
- Third Fall

**Ping Pong Chart**

- Non-First Generation
- First Generation
Findings

- Semester GPA by Academic Momentum and FG Status

<table>
<thead>
<tr>
<th></th>
<th>First Fall</th>
<th>Second Fall</th>
<th>Third Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 15</td>
<td>2.75</td>
<td>2.67</td>
<td>2.91</td>
</tr>
<tr>
<td>≥ 15</td>
<td>2.64</td>
<td>2.53</td>
<td>2.78</td>
</tr>
</tbody>
</table>

Legend:
- Blue: Non-First Generation
- Orange: First Generation
Findings

- Cumulative Credits by Academic Momentum and FG Status
Findings

- Retention by Academic Momentum and Race/Ethnicity
### Findings

- **Semester GPA by Academic Momentum and Race/Ethnicity**

<table>
<thead>
<tr>
<th></th>
<th>Asian/ White</th>
<th>Non-Asian/ Non-White</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Fall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;15</td>
<td>2.8</td>
<td>2.59</td>
</tr>
<tr>
<td>≥15</td>
<td>2.86</td>
<td>2.65</td>
</tr>
<tr>
<td><strong>Second Fall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;15</td>
<td>2.66</td>
<td>2.52</td>
</tr>
<tr>
<td>≥15</td>
<td>2.85</td>
<td>2.65</td>
</tr>
<tr>
<td><strong>Third Fall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;15</td>
<td>2.95</td>
<td>2.73</td>
</tr>
<tr>
<td>≥15</td>
<td>2.99</td>
<td>2.86</td>
</tr>
</tbody>
</table>
Findings

- Cum Credits by Academic Momentum and Race/Ethnicity