

A Longitudinal Study of the Effects of Financial Aid on Nontraditional Students' College Success: The Case of Two-Year Beginning Students

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- 1 Introduction
- 2 Research Purpose
- 3 Literature Review
- 4 Theoretical & Conceptual Framework
- 5 Methodology
- 6 Results
- 7 Discussion and Implications

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- The prevalence of nontraditional students in the U.S. higher education (Horn & Carroll, 1996; Choy, 2002; Snyder & Dillow, 2011)
- Mission of two-year colleges and concentration of nontraditional students at the two-year sector (Nora, 2000; Townsend, 2002; Horn & Carroll, 1997; Choy, 2002; Snyder & Dillow, 2011)
- Nontraditional students face greater risk of dropping out and are less likely to complete a degree in a timely manner than their traditional counterparts (Greene & Greene, 2002; Taniguchi & Kaufman, 2005)
- The underachievement of nontraditional students is substantially attributable to insufficient financial resources acquired by these students (Long, 2009; Jacobs & King, 2011)
- Little is known about how the financial aid system serve the needs of nontraditional student and affects their college success (Long, 2009; Laposvsky, 2008; Baum, 2006)

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- To address limitations in the existing literature by exploring the role financial aid plays in college success of nontraditional students, defined as
 - students who demonstrate at least one of seven characteristics at first entry: delayed college enrollment, part-time attendance, single parent status, having dependent children, full-time employment, financial independence, lacking a standard high school diploma.
- To inform financial aid policy and practice at multiple levels that are likely to affect these underserved students

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- How are different types of financial aid, namely, Pell Grants, subsidized student loans and unsubsidized student loans, distributed among two-year beginning nontraditional students over time?
- What are the postsecondary pathways in terms of system departure and degree completion of these students over six years?
- To what extent do Pell Grants, subsidized student loans and unsubsidized student loans affect nontraditional student college outcomes?
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- External pulls such as family responsibilities (Bean & Metzner, 1985), employment (Nora, et al., 1996; Pike, Kuh, & McKinley, 2009), and financial constraints (Long, 2009; Jacobs & King, 2002).
- Role of financial aid
 - Positive in general (Cabrera, Nora & Castaneda, 1993; Hossler, et al., 2008)
 - Vary by type, over time and across subgroups of students (Hossler, et al., 2008; DesJardins, Ahiburg & McCall, 1999, 2002; Chen & DesJardins, 2008, 2010)
 - Failure to accommodate distinct needs and diverse backgrounds of today's nontraditional students (Choitz & Widom, 2003; Long, 2009; Baum, 2006; Laposvsky, 2008; St. John & Tuttle, 2004)

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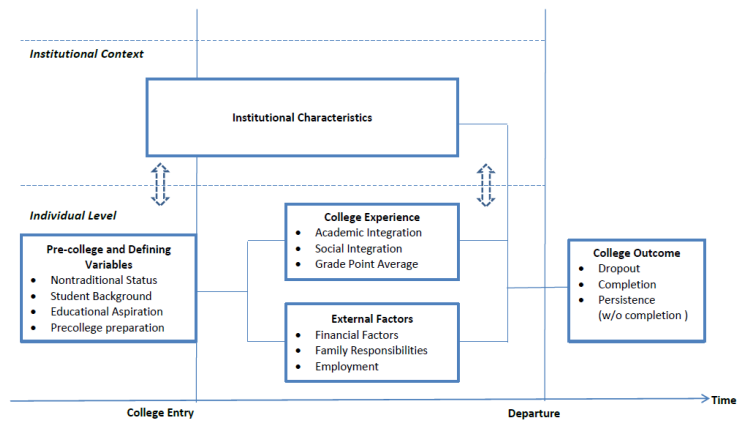
Theoretical Framework

- Bean and Metzner's (1985) model of nontraditional student attrition
- Incorporating economic (e.g. human capital) and sociological perspectives (e.g. social capital, cultural capital and habitus) and de-emphasizing psychological constructs that are rarely available to researchers.

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Conceptual Framework



Data Source and Sample

- Beginning Postsecondary Student Longitudinal Survey (BPS:04/09)
- 3,390 first-time nontraditional students who were initially enrolled in associate's programs at two-year colleges in 2003-04, representing a population of 1,040,587 students.

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Analytical Methods

- **Descriptive statistics**
- Nonparametric estimation methods, i.e. multiple-decrement life-table and Nelson-Aalen estimator
- Discrete-time event history analysis (EHA)
 - Baseline EHA model
 - Identify and include important interactions (full EHA model)
- Propensity score (PS) weighting to the full EHA model
 - Estimate PS for receiving respective types of financial aid using random-effect logit
 - Compute inverse probability weight (IPW) for each financial aid and trim extreme weights
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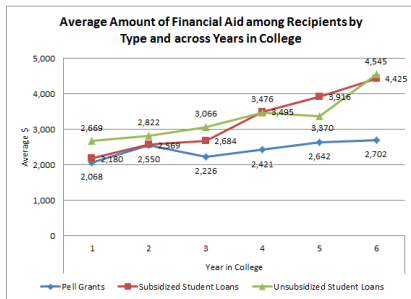
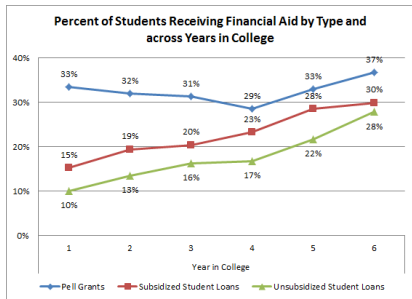
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Description of the Weighted Sample

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Variable	Mean	Variable	Mean
<i>Student Level</i>			
Delayed enrollment	0.61	Parental education: High school or below	0.43
No High School Diploma	0.14	Parental education: AA or some college	0.28
Part-time Attendance at entry	0.63	Parental education: BA or beyond	0.26
Financial Independence	0.49	First year degree goal: AA or below	0.4
Full-time employment while enrolled	0.40	First year degree goal: BA	0.6
Had dependent	0.32	Adjusted gross income 2003-04	41,150.74
Single parent	0.16	High school grade point average (GPA)	2.64
Female	0.58	First year college GPA	2.86
White	0.58	Academic integration index 2004	53
Black	0.16	Social integration index 2004	13.33
Hispanic	0.17	Hours worked per week 2003-04	25.13
Other race/ethnicity	0.09	Cost of attendance in dollars	6,775.71
Age at first entry	24.64		
<i>Institutional Level</i>			
Institutional control: Public	0.91		
Enrollment size 2003-04	9,128.60		

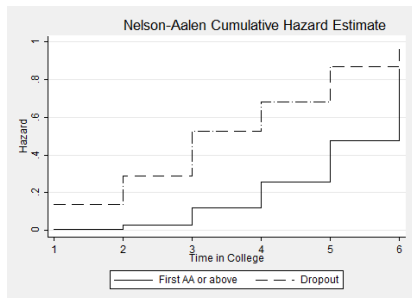
Distribution of Financial Aid



Overview of Pathways

Multiple Decrement Life-Table (Weighted Sample)

Time	Begin Tot	Complete	$H_{cum}(t)$	Dropout	$H_{cum}(t)$	Censored
1	1,040,563	8,133	0.0078	143,272	0.1377	0
2	889,158	21,436	0.0241	133,599	0.1503	0
3	734,123	71,727	0.0977	170,239	0.2319	23,694
4	468,464	43,396	0.0926	68,109	0.1454	34,136
5	322,823	43,528	0.1348	52,528	0.1627	40,445
6	186,322	52,673	0.2827	14,495	0.0778	119,154



EHA Model Results: Average Marginal Effects (AME)

Average Marginal Effects of Financial Aid (in \$1000) on Predicted Probabilities

	Degree Attainment			Dropout		
	Base EHA	Full EHA	IPW EHA	Base EHA	Full EHA	IPW EHA
Pell Grant	.005*	.004	.005	-.027***	-.042***	-.037***
Subsidized Student Loans	.002	.002	.002	-.016**	-.023**	-.028***
Unsubsidized Student Loans	-.006**	-.005**	-.006*	-.016**	-.023***	-.021**

EHA Model Results: Differential Effects

	Degree Attainment			Dropout		
	Pell Grants	Subsidized Loans	Unsubsidized Loans	Pell Grants	Subsidized Loans	Unsubsidized Loans
Across Time:						
Year 1	.000	-.002	.001	-.045***	-.032*	-.044**
Year 2	.008*	-.007	-.003	-.020*	-.017	.011
Year 3	.020**	.002	-.008	-.033*	-.034*	-.025*
Year 4	-.010	-.001	.004	-.038	-.044**	-.039*
Year 5	-.018	.035	-.035*	-.050**	-.014	-.020
Year 6	.024	.021	-.023	-.076**	-.018	-.004
<i>F</i> (5,232)	4.45***	0.94	2.40*	2.43*	1.06	1.67
By Nontraditional Characteristic						
Delayed enrollment	.005	.002	-.005	-.041***	-.031**	-.023**
No high school diploma	.005	.001	-.004	-.041***	-.031	-.024**
Part-time enrollment	-.004	.010	-.003*	-.058***	-.044**	-.029***
Financial independence	.005	.003	-.006*	-.043***	-.031**	-.023**
Full-time employment	.004	.002	-.005*	-.041***	-.032**	-.023**
Single parent status	.005*	-.001	-.004	-.040***	-.029**	-.024**

Time to Event

- The highest dropout risk in the third college year
 - Track nontraditional student academic progress and extend retention practice to later college years
- Increased likelihood of degree attainment over time, and 21 percent were right censored
 - Insufficiency of six-year graduation rates

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- Greater reliance on student loans over time, perhaps due to rising college costs and growing capability of navigating the system

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Effects of Financial Aid on Reducing Dropout Risks

- All three types of financial aid are effective for reducing dropout risks, with Pell Grants showing the greatest effects
 - Continue and strengthen support through financial aid programs especially Pell Grants or similar obligation-free financial aid programs
 - Increase access to financial aid information, provide guidance on navigating the system, integrate components of financial aid into retention practice
- Differential effects across time
 - Students' changing psychological dispositions towards financial aid, appropriate interventions may be needed
- More effective for part-time students
 - Extend financial support to nontraditional students who fall out of the original policy intent, e.g. extend loan eligibility to less-than-half-time students

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- Differential effects across time
 - Students' changing psychological dispositions towards financial aid, appropriate interventions may be needed
- More effective for part-time students
 - Extend financial support to nontraditional students who fall out of the original policy intent, e.g. extend loan eligibility to less-than-half-time students

Effects of Financial Aid on Reducing Dropout Risks

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Effects of Financial Aid on Timely Degree Attainment

- Insignificant effects of Pell Grants and subsidized student loans
 - Insufficient support and/or insufficient time to assess degree attainment
- Negative effects of unsubsidized student loans
 - High interest rates, consequences of loan default and prospects of high repayment
 - Consider policy components that may shorten time to degree, e.g. discounted interest rates and extended non-interest grace period for “timely” degree completion

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Implications for Research

- Advantages of national data set to capture students' complex pathways
- The temporal nature of student success and financial aid requires longitudinal modeling techniques (Perna & Thomas, 2006; DesJardins, et al., 2002; Chen & DesJardins, 2008, 2010)
- Self-selection bias needs to be addressed wherever applicable (Schneider, et al., 2007)
- Marginal policy effects may be more informative and comprehensible than commonly used odds ratio (Hannaway, 2012)
- Future research will benefit from more nuanced analysis, e.g subgroups of nontraditional students

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Thank You!
Questions and comments are welcome and appreciated