Determinants of Baccalaureate Degree completion and Time to Degree for High School Graduates in 1992

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Background

- Greater number of students leaving college without a degree (Horn, Berger, & Caroll, 2004)
- Longer time-to-degree (Adelman, 2004)
- Widespread use of degree completion rate and TTD (Knight & Arnold, 2000; DesJardins, Kim, & Rzonca, 2002)

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Review of Literature (Gap)

- Conflicting research findings (e.g., classic transfer)
- Unit of analysis: limited to individual level
- Different theories (Tinto, Bean, Noxel et al.)
- Analytic methods

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Research Questions

- What are the factors related to undergraduate students' degree completion?
- What are the determinants that impact time to undergraduate degree completion?
- Does the data from PETS:2000 support the Degree Commitment Model?

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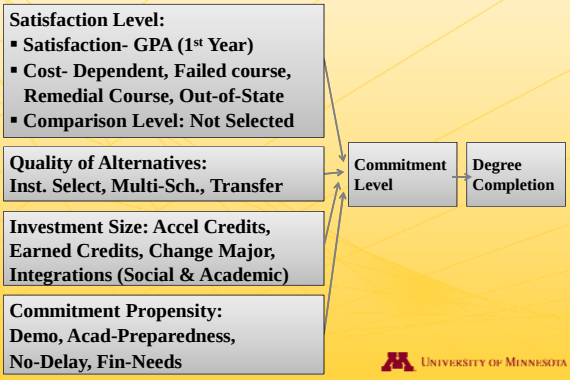
Degree Commitment Model (1)



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Data

- PETS:2000 from National Center for Education Statistics (NCES)
  - Transcripts were requested for 9,602 students
  - 15,562 transcripts were received from 8,889 students
  - Limited to 6,430 students who attended a 4-year institution
  - 170 students with no transcript record were further removed from the sample; 6,260.

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Dependent Variables

- Degree Completion
- Enrolled Time-to-Degree

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Descriptive Statistics

Variables	N	Mean	SD	Description
Degree Completion	6,260	64.73	0.48	A binary variable- Coded '1' if completed
Enrolled TTD	6,152	110.15	91.64	Total number of weeks to degree completion
SES	6,233	3.69	1.30	SES quintile
Male	6,260	0.47	0.50	Male coded as '1'
Asian	6,260	0.10	0.30	Asian coded as '1'
Hispanic	6,260	0.09	0.29	Hispanic coded as '1'
Black	6,260	0.08	0.27	Black coded as '1'
American Indian	6,260	0.01	0.08	American Indian coded as '1'
Dependent	6,260	0.07	0.25	Married and/or have child

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Descriptive Statistics

Variables	N	Mean	SD	Description
Anticipation	5,897	4.37	0.74	Highest level of education students expect
HS Curri. Intens.	5,465	2.22	1.21	Level of intensity of high school curriculum
HS Sen. Test	5,695	3.86	1.18	Achievement test score administered by NELS
Class Rank/GPA Q	5,117	2.39	1.31	Composite score of high school rank and GPA and recalibrated as quintile value
No-Delay	6,260	0.89	0.31	Enrolled college right after high school degree
Fin. Aid	5,919	0.65	0.48	Binary variable indication whether any financial aid received
First Year GPA	5,912	2.68	0.75	First college year GPA
W-Ratio	6,260	7.28	11.00	Ratio of withdrawal to attempted
Remedial Read	6,260	0.07	0.25	Took remedial reading
Remedial Math	6,260	0.19	0.39	Took remedial math

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Descriptive Statistics

Variables	N	Mean	SD	Description
First-Year Credits	6,260	24.92	10.10	Total number of credits earned for the first calendar year
Out-of-State	6,260	0.24	0.42	Different state from high school
Instit. Select	6,260	0.23	0.42	Selectivity of first institution attended
Multi School	6,260	0.62	0.49	Attend more than one 4-year institution
Classic Trans.	6,260	0.15	0.36	Transfer from a 2-yr institution to a 4-yr institution
Accel. Credit	6,260	2.32	5.89	Total credit earned prior to high sch. Graduation
Change Major	6,189	0.39	0.49	Coded as '1' if ever changed major
Co-op Internship	6,260	0.18	0.65	Participation in cooperative and internship course

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Elapsed Time-to-Degree (Adelman, 2006)

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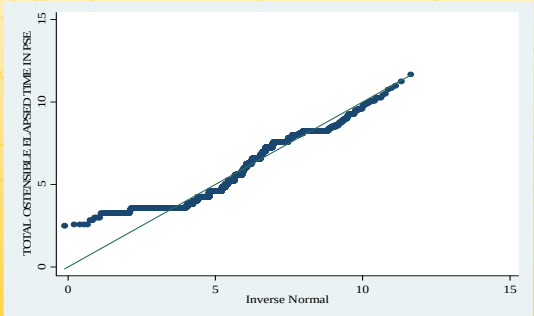
Elapsed Time-to-Degree



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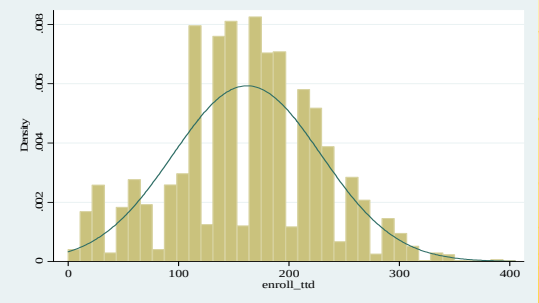
Enrolled Time-to-Degree (All)



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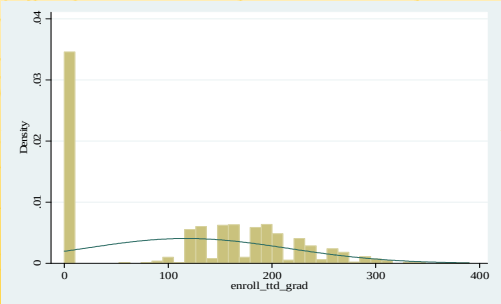
Enrolled Time-to-Degree (Grad)



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Analytic Strategy

- **The Zero-Inflated-Negative-Binomial Model**
  - **Logistic Reg: Zero category or not**
  - **Negative Binomial Reg: Number of weeks to degree**
  - **Panel weight applied-Represents 984,052 students**
    Weight variable in PETS:2000: [F4F2P3WT]

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Findings (1)

Variables	Degree Completion		Time-to-Degree	
	Sig.	%	Sig.	%
SES	***	26.4		
Anticipation	**	27.4		
HS Curriculum Intensity	***	27.5		
HS Rank/GPA Quintile				
HS Senior Test				
Hispanic				
Asian				
Black				
Gender				
American Indian			**	13.2
No-Delay	**	49.5		
Fin. Aid			**	4.8

*= P < .05; ** = P < .01; *** = P < .001
Red: Positive; Blue: Negative

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Findings (2)

Variables	Degree Completion		Time-to-Degree	
	Sig.	%	Sig.	%
First-Year GPA	***	58.2	**	3.2
W-Ratio (Percent)	***	11.8	***	1.5
Remedial Reading			*	6.5
Remedial Math				
Out-of-State			***	5.2
Inst. Selectivity	**	41.7	***	5.6
Multi School	**	49.6	***	19.3
Classic Transfer	***	59.4		
Accelerating Credits			*	0.2
First-Year Credits	***	4.8		
Change Major		49.5	***	5.7
Co-op/Internship Course	***	54.7		

*= P < .05; ** = P < .01; *** = P < .001
Red: Positive; Blue: Negative

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Policy Implications (1)

- Examine high school curriculum and improve it. It makes a difference.
- Academic momentum during the freshman year deserves to be focused.
- Institution needs to help students with reading competency to help them graduate in a timely manner.
- Interventions for students with dependent(s) would increase the degree completion rate (234%).
- Changes in the matrix measuring institutional accountability are required from using raw degree completion rate to an adjusted one.

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Policy Implications (2)

- Promote student awareness of and access to appropriate co-operative and internship courses.
- Institutions need to help transferred students (not from classic transfer) to increase degree completion and TTD.
- More microscopic research needs to be done to identify why students withdraw from classes.
- Institutions also are pointed to use the information of students' intent to educational expectation to predict students' success.
- Collaboration between high school and college is essential to increase degree completion rate and decrease TTD.
- Encourage high school students to take college level courses to shorten TTD.

Limitations

- Financial aid variable was too much simplified
- SEM might elucidate the inter-relationship among the six theoretical constructs of the Degree Commitment Model.

Thank You !!

Questions?

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