

Does Financial Aid Impact Collegiate Success?

The Effects of the Gates Millennium Scholars Program on College Performance and Non-Academic Behaviors

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Gates Millennium Scholars: Background

- Established 1999 and funded by \$1 billion grant from The Bill & Melinda Gates Foundation
- Renewable last-dollar scholarship
- Targets talented students of color who will be first-time, fulltime college students (2000-04 means):
 - African American: 35% Hispanic American: 33%
 - Asian American: 22% American Indian: 10%
- Pell Grant eligible (family income <\$40,000)
- Cumulative HS GPA of 3.3 on 4.0 scale or GED
- Selects finalists based on academic achievement, community service, and leadership potential
- Over 4,000 applicants each year / 1,000 chosen

Background

Previous GMS Research

- GMS improved odds of continuous enrollment (*St. John & Chung, 2002*)
- GMS students worked fewer hours per week and had higher retention rates (*DesJardins & McCall, 2008*)
- Scholars spend more time in extracurricular activities than non-recipients (*Hurtado, Laird, & Perorazio, 2005*)
- Contributions of this work:
 - More complete definition of student success
 - Further identify how/ where students spend their time

Prior Research

Research Question

Could aid impact collegiate success, particularly among low-income students of color?

Studying the Gates Millennium Scholars Program

- A scholarship to **talented** students → Unique opportunity to examine the causal impact of financial aid on collegiate success **apart from other influences**
- Focus on more than just academic performance – What **behaviors** are affected by financial aid?
- Designed to allow comparisons of aid recipients to **similar** students who did not receive the aid

Research Question

Research Methodology – Part 1

- **Goal:** Identify *similar* students who did not receive
- **Comparison Group #1:** Applicants who made it to the final round of consideration but were not selected for a GMS award
 - Students making it to the final round:

• Cohort 1: 100%	• Cohort 3: 57%
• Cohort 2: 86%	• Cohort 5: 52%
- **Comparison Group #2:** Applicants who met certain thresholds of achievement
 - Drop students with little chance of receiving the award
 - Assessment score of at least 76 *AND* an SAT score of at least 900 *or* an ACT score of at least 17 for Cohort 1. Minimum scores of 56, 63, and 60 for Cohorts 2, 3, & 5

Research Methodology – Part 1

How do the outcomes of GMS Scholars compare to Non-recipients?

OLS model

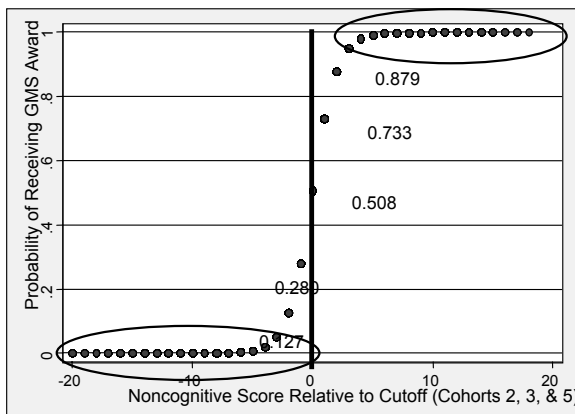
$$Y_i = \beta_0 + \beta_1 \text{GMS}_i + \beta_2 \text{Background}_i + \beta_3 \text{Preparation}_i + \beta_4 \text{Score}_i + \beta_5 \text{College}_i + \varepsilon_i$$

- **Background:** Gender, Race, 1st gen. college student, Max. level of parents' education, Parents own or rent home, Student attended private HS
- **Preparation:** SAT/ACT percentile, # AP exams in HS
- **Score:** Total score on GMS noncognitive assessment
- **College:** Public or private college, Selectivity

Research Methodology – Part 1

Research Methodology – Part 2

- **Goal:** Identify *similar* students who did not receive
- **Comparison Group #3:** Applicants just above and below the cutoff for making it to the final round of consideration → *Regression Discontinuity Approach*



Research Methodology – Part 2

Data: Overview and Outcomes

- Collected by NORC (National Opinion Research Center)
- Four cohorts: fall 2000, 2001, 2002, & 2004
- Surveyed at three points: Spring semester of 1st year, 3rd year, and 5th year
- Approx 3,000 observations per cohort

Outcomes:

- **College Performance:** GPA in 3rd year
- **Academic Behaviors with Peers and Faculty:** Working with other students; Discussing ideas/ problems with faculty
- **Extracurricular and Social Behaviors:** Community service; Hours worked per week

Data

Sample Summary Statistics (Cohorts 1-3 & 5)

Data

	COMPARISON GROUP #1 (made it to the second round)	
	GMS Recipient	Non-Recipient
Female student	0.698	0.719
African-American	0.353	0.341
Asian	0.209	0.291
Hispanic/Latino	0.345	0.324
1 st Generation	0.352	0.239
Parent's education	13.87 (2.65)	14.41 (2.67)
Parents rent home	0.270	0.191
Public college	0.571	0.684
Highly Compet. college	0.626	0.520

How Often Students Worked with Other Students

(Negative values suggest students did so *more* often)

Results

Cohort 1, 2, 3, & 5	1 st Year	3 rd Year
CONTROL GROUP 1		
Received GMS	-0.2684*** (0.0507)	-0.3538*** (0.0646)
Observations	5513	4012
R-squared	0.0409	0.0477
CONTROL GROUP 2		
Received GMS	-0.2714*** (0.0529)	-0.3556*** (0.0681)
Observations	4994	3636
R-squared	0.0373	0.0481

Comparison Groups 1 and 2
Using OLS Regressions

Cohorts 2, 3, & 5	1 st Year	3 rd Year
REGRESSION DISCONTINUITY (+/- 5 points)		
Received GMS	-0.2497* (0.1392)	-0.6233*** (0.1602)
Observations	1875	1531
R-squared	0.0346	0.0526

Comparison Group 3
Regression Discontinuity Approach

How Often Students Discussed Ideas with Faculty

(Negative values suggest students did so *more* often)

Results

Cohort 1, 2, 3, & 5	1 st Year	3 rd Year
CONTROL GROUP 1		
Received GMS	-0.1560*** (0.0519)	-0.3155*** (0.0636)
Observations	5495	3974
R-squared	0.0496	0.0622
CONTROL GROUP 2		
Received GMS	-0.1435*** (0.0545)	-0.3290*** (0.0668)
Observations	4976	3603
R-squared	0.0473	0.0648
Cohorts 2, 3, & 5		
REGRESSION DISCONTINUITY (+/- 5 points)		
Received GMS	-0.0109 (0.1467)	-0.4511*** (0.1566)
Observations	1869	1523
R-squared	0.0492	0.0792

Comparison Groups 1 and 2
Using OLS Regressions

Comparison Group 3
Regression Discontinuity Approach

Impact of GMS on Participation in Community Service

Results

Cohort 1, 2, 3, & 5	1 st Year	3 rd Year
CONTROL GROUP 1		
Received GMS	0.1195* (0.0706)	0.3560*** (0.0544)
Observations	3382	3909
R-squared	0.0347	0.0484
CONTROL GROUP 2		
Received GMS	0.1713*** (0.0436)	0.3307*** (0.0575)
Observations	4988	3518
R-squared	0.0332	0.0487
Cohorts 2, 3, & 5		
REGRESSION DISCONTINUITY (+/- 5 points)		
Received GMS	0.2765** (0.1167)	0.3726*** (0.1297)
Observations	1873	1556
R-squared	0.0156	0.0315

Comparison Groups 1 and 2
Using OLS Regressions

Comparison Group 3
Regression Discontinuity Approach

Summary of Results

Results

- Weak evidence that GMS recipients had slightly higher GPAs than comparable students
- GMS recipients talked about their academic problems and ideas with faculty and worked more often with other students than non-GMS students
- Spent less time working while in college (more time to focus on college activities)
- GMS students spend more time in community service, both in the 1st and 3rd year

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Questions/ Comments

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