Student Future Academic Performance after Being Placed on Dean's List

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Abstract

This study examines the causal impact of being placed on the Dean's List, a positive education incentive, on future student performance using a regression discontinuity design. The results suggest that for students with low prior academic performance and who are native English speakers, there is a positive impact of being on the Dean's List on the probability of getting onto the Dean's List in the following year. However, being on the Dean's List does not appear to have a statistically significant effect on subsequent GPA, total credits taken, dropout rates, or the probability of graduating within four years. These findings suggest that a place on the Dean's List may not be a strong motivator for students to improve their academic performance and achieve better outcomes.

Introduction & Motivation

Having good academic performance is not only important for individual students, but also for the broader society and economy. It has been shown that higher levels of education are associated with better employment opportunities, higher wages, and improved health outcomes (Oreopoulos and Petronijevic, 2013). Moreover, academic success can lead to improved critical thinking, problem-solving, and communication skills, all of which are essential in various professions (Veerasamy et al., 2018). Additionally, students who perform well in school are more likely to have greater self-confidence and a positive sense of self-efficacy, which can have a positive impact on their personal and professional lives (Pintrich and De Groot, 1990). Therefore, understanding the factors that contribute to academic success, such as the impact of the Dean's List, is important for educators, policymakers, and employers alike.

To enhance student academic performance and positively influence economic outcome, educators are investigating various strategies to incentivize student achievements. One strategy is the implementation of a Dean's List, a widely adopted practice in universities that acknowledges and celebrates students' academic accomplishments. To earn a spot on the Dean's List, students are required to attain a specific grade point average (GPA) determined by the university. This recognition serves as a testament to their academic success and can inspire students to sustain or elevate their academic performance going forward.

The purpose of this study is to examine the impact of being included in the Dean's List on academic outcomes, as responses to different types of incentives can vary among individuals. The recognition can serve as a positive tool that encourages students to strive for higher achievement, which may lead to increased motivation, and more effort towards completing courses and graduating on time (Bliven, 2021). However, it is also important to note that such incentives may not always lead to the intended positive outcomes. For instance, research has shown that the competitiveness of certain academic programs, such as the Indiana Choice Scholarship Program, can create undue pressure on students, ultimately negatively affecting their future academic

achievement (Canbolat, 2021). Understanding the impact of academic recognition on student motivation and achievement can have implications beyond the academic setting, including workplace motivations. Therefore, the findings of this research could inform our understanding of the factors that promote or hinder success in a variety of contexts.

This paper was inspired by Lindo et al.'s study "Ability, Gender, and Performance Standards: Evidence from Academic Probation," which used regression discontinuity design to examine the effects of negative incentives on future academic performance. In contrast, this paper utilizes regression discontinuity design (RDD) to investigate the impact of being placed on the Dean's List after the first academic year on students' continued academic performance, particularly during the freshman year. RDD is a suitable method to study this research question as it allows me to isolate the effect of being on the Dean's List from other factors that may influence academic performance. By comparing the academic performance of students just above and below the Dean's List cutoff, I can estimate the causal effect of being on the Dean's List. To ensure the validity of RDD by addressing the problem of nonrandom sorting, this paper conducts a balance check by investigating the distribution of student grades relative to the cutoff. The continuous distribution of grades across the cutoff indicates the successful randomization of individuals into the treatment and control groups. Moreover, I examined whether students' observable traits, such as prior academic performance, age, and gender, remained continuous through the threshold. The absence of significant discontinuity through the threshold provides strong evidence that students with particular characteristics were unable to manipulate their grades to be included in the Dean's List.

To measure academic performance, this paper uses dependent variables such as probability of getting Dean's List in the second year, sophomore year GPA, dropout rate, number of course credits taken in the following year, and the likelihood of graduating within four years. These measures are relevant because they provide a comprehensive understanding of academic performance. The probability of getting Dean's List indicates the sustainability of academic success, sophomore year GPA measures academic improvement, and the number of credits taken in the following year captures the increased academic engagement and motivation. Additionally, the dropout rate reflects the likelihood of degree completion, and graduating within four years is a significant milestone that also minimizes additional tuition costs and allows earlier entry into the workforce. By considering these measures, I can gain a more comprehensive view of the impact of being on the Dean's List on students' academic outcomes.

The results of this study suggest that being on the Dean's List may not have a statistically significant effect on subsequent GPA, total credit taken, dropout rates, or the probability of graduating within four years for the overall student population. However, we did find a positive effect for students with low prior academic performance and for those who are native English speakers. For this group, being on the Dean's List increased the likelihood of sustained academic success, as they were more likely to get on the Dean's List again in their following year. These findings suggest that the Dean's List may be a more effective motivator for students who face academic challenges or don not have language barriers. However, overall, the effect of the Dean's List on academic outcomes is minor for the entire student population. These results challenge the assumption that positive incentives such as the Dean's List alone can lead to better academic performance and success. Alternative strategies may be needed to motivate students to achieve better outcomes.

Literature Review

Previous research has focused on how negative incentives, such as academic probation, affect student behavior and academic performance. Results showed that an academic probation status after the first semester can improve short-term academic performance, but this effect fades over time and does not increase rates of graduation or persistence (Jason and Mansur, 2017). In contrast, my research aims to investigate the impact of positive academic incentives. The El Dorado Promise scholarship, which provides financial assistance to high school graduates, has been shown to have a positive and statistically significant impact on math achievement (Ash and Swanson, 2020). Similarly, Leuven et al. found that monetary incentives offered on a first-year entrance exam positively affected students' future academic achievement. This makes intuitive sense, as tangible rewards can increase motivation to perform well academically. While there is extensive literature on monetary incentives, there is limited research on the impact of non-monetary incentives. One study by Lavy and Sand (2015) examined the effect of winning a math competition (without a reward) on subsequent math test scores in Israel and found that it improved academic performance. This suggests that non-monetary incentives may also have a positive impact on student motivation and performance.

The non-monetary positive incentive I plan to investigate is the placement of students on the Dean's List. Prior research has shown that earning a spot on the Dean's List early in the academic year helps students maintain the quality of their academic work, but does not have an impact on the amount of work they undertake (Seaver and Quarton, 1976). In their study, Seaver and Quarton used regression discontinuity analysis to investigate the effects of Dean's List placement on subsequent academic performance, using a sample of 1,002 students from Pennsylvania State University (196 on the Dean's List and 816 not on the Dean's List). Their findings revealed that being placed on the Dean's List led to an improvement in subsequent GPA, but did not lead to an increase in the number of credits students took. However, their study was limited by a small sample size, which could restrict the generalizability of their findings to a broader population of college students, The study also failed to control for potential confounding variables such as age, gender, and prior academic performance. My research aims to address these limitations by incorporating comprehensive student characteristics as controls and using a larger sample size, as well as exploring the longer-term outcome of Dean's List placement, such as the probability of graduating within four years. Additionally, my research aims to investigate the role of gender in response to educational incentives, as prior studies have suggested that female students may be more responsive to positive educational incentives (Angrist and Lavy, 2002).

Data and Context

The dataset used in this study comes from a Canadian university with three campuses: one main campus and two branch schools. The dataset was also used in a previous study titled "Ability, Gender, and Performance Standards: Evidence from Academic Probation" (Lindo et al., 2010). The criteria to qualify for the Dean's List are the same in all three schools: completion of a minimum of 5 total credits and a cumulative grade point average (CGPA) above 3.5 in the most recent year of study (on a 0-4.3 scale). Students who earn placement on the Dean's List receive a

congratulatory letter acknowledging their excellent academic performance. It is important to note that the Dean's List does not offer any tangible benefits such as monetary rewards or access to additional resources. As a result, any observed effects can be attributed solely to psychological factors, such as the sense of accomplishment and recognition that comes with being placed on the list. In order to focus specifically on these psychological effects, my analysis will exclude any potential influences related to monetary or resource-related factors. The research uses data on college students from a large Canadian university. The dataset spans a nine-year period between 1996 and 2005, and observations are at a student level, with the academic year broken down into fall, winter, and summer terms. The data includes student year 1 GPA, year 2 GPA, credit complete, gender, age, first language, previous high school performance, ethnicity, and term registration status. I further constructed binary variables based on a student's first and second year GPA and credit completion to indicate whether they qualified for the Dean's List in each respective year. The dataset used in the research has a total of 44,362 observations, which includes data through the end of the 2005 school year.
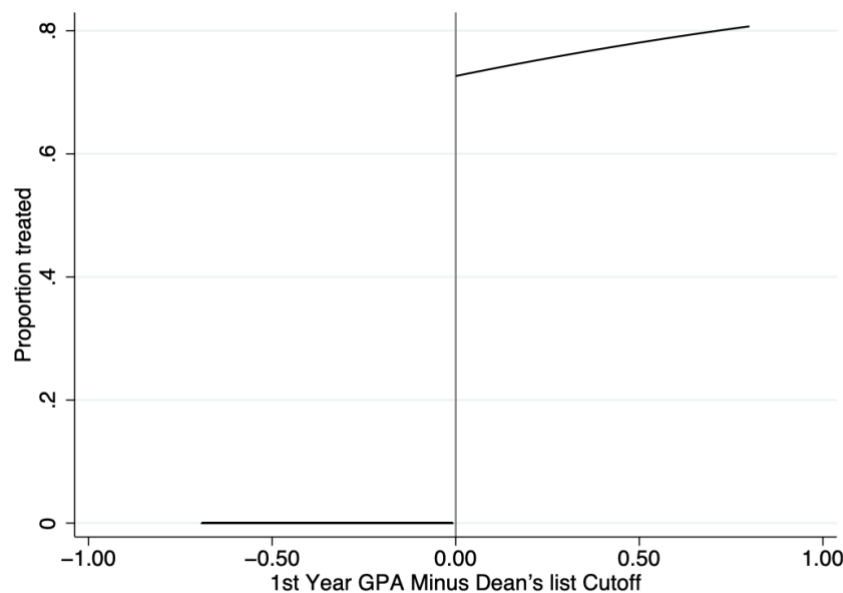

Figure 1: Predicted Probability of Getting into Dean's List

In my study, I will define specific parameters for the dataset utilized. To ensure the reliability of the results, I will only consider students who have completed a minimum of two academic years. Additionally, I will implement the sample restrictions recommended by Lindo et al. (2010), which includes students who entered the university between the ages of 17 and 21, comprising 99% of the remaining sample. Moreover, I will narrow down the sample by selecting students within 0.7 grade points of the Dean's List cutoff. This method will exclude students with exceptionally high academic abilities and those who fall significantly below the required GPA cutoff. This helps to

reduce bias and increase the precision of the estimated treatment effect. If I include students who are too far away from the cutoff, I may introduce noise or confounding factors that make it difficult to estimate the true effect of the Dean's List on academic outcomes.

Based on Figure 1, I can observe that all students on the left side of the cutoff received treatment, whereas only a portion of those on the right side of the cutoff received treatment due to not meeting the unit requirement after one academic year, despite meeting the GPA requirement. This non-compliance issue can introduce bias in the estimation of treatment effect, as the treatment and control groups may no longer be comparable. To address this issue, I will exclude students who did not meet the unit requirement (less than 5 credits taken) after the first academic year. By doing so, I can ensure that only students who meet both the GPA and unit requirements are included in the analysis, which will help to reduce potential bias and provide more accurate results.

Table 1: Summary Statistics for the Full Sample and Restricted Sample

	Full Sample		Restricted Sample	
	Mean	SD	Mean	SD
Characteristics				
High School Grade Percentile	50.17	28.86	74.07	21.95
First-year GPA	2.44	0.89	3.37	0.35
Age at Entry	18.67	0.74	18.55	0.72
First-year Credit Total	4.57	0.51	5.01	0.09
Male	0.38	0.49	0.39	0.49
Primary Language: English	0.71	0.45	0.74	0.44
Place of Birth: North America	0.87	0.34	0.89	0.31
Attend Campus 1	0.58	0.49	0.75	0.44
Attend Campus 2	0.17	0.38	0.09	0.29
Attend Campus 3	0.24	0.43	0.16	0.37
Dean's List Eligibility	0.09	0.29	0.38	0.48
Outcomes				
Second-year GPA	2.55	0.83	3.23	0.54
Left University after 1st year	0.05	0.22	0.09	0.29
Second-year Credit Total	3.86	1.55	4.36	1.35
Graduated by year 4	0.45	0.50	0.68	0.47
Second-year Dean's List Eligibility	0.09	0.29	0.26	0.44

Notes: The summary statistics for the full sample and restricted sample are presented in the table. The restricted sample comprises students who meet two criteria: they are within 0.7 of the Dean's List cutoff and take more than 5 units in a single academic year. Regarding all students characteristics variables, the full sample and restricted sample contain 44362 and 10978 each. The second year GPA variable includes 38,576 students for the full sample and 9,978 for the restricted sample. Similarly, the second year credit taken variables include 43,593 in the full sample and 10,846 in the restricted sample. The graduate within four-year variable is observed for 30,017 students in the full sample and 7,167 students in the restricted sample.

Table 1 presents summary statistics for the full sample and the restricted sample. The restricted sample consists of students who are within 0.7 grade points of the Dean's List cutoff, took a minimum of 5 units, and have completed at least two academic years. Compared to the full sample, the restricted sample exhibits some notable differences in terms of characteristics and outcomes. For instance, the mean high school grade percentile in the restricted sample is 74.07%, which is substantially higher than the full sample mean of 50.17%. Similarly, the mean first-year GPA in

the restricted sample is 3.37, which is considerably higher than the full sample mean of 2.44. These differences suggest that the restricted sample comprises students who are more academically accomplished than the full sample.

Regarding the outcome variables, the mean second-year GPA in the restricted sample is higher at 3.23 compared to the full sample mean of 2.55. However, the proportion of students who left the university after the first year is higher in the restricted sample (0.09) compared to the full sample (0.05). On the other hand, the proportion of students who graduated by year 4 is higher in the restricted sample (0.68) compared to the full sample (0.45). Overall, the restricted sample have higher academic abilities because I select students within 0.7 grade points of the Dean's List cutoff, I am effectively selecting a group of students who are performing well academically and are close to meeting the criteria for the Dean's List, then we can ensure that the treatment and control groups are more comparable in terms of their observed and unobserved characteristics. This helps to reduce the potential bias in the estimates of the treatment effect and increase the validity of the causal inference from the RDD.

Empirical Specification and identification

The aim of this paper is to estimate the causal impact of being named to the Dean's List on future academic performance. To achieve this, I will estimate the following equation:

$$Y_i^{year\ j} = \beta\left(GPASDIZE_i^{year\ 1}\right) + \tau\left(GPASDIZE_i^{year\ 1} > 0\right) + X'_i\gamma + u_i$$

The outcome of interests is, alternatively, the second year GPA and credit taken, the dropout rate in year 2, probability of making the Dean's List in the second year and probability of graduating within four year for student i. $GPASDIZE_i^{year\ 1}$ is the standardized first year GPA for student i (distance from students' GPA and Dean's List for ith observation). $GPASDIZE_i^{year\ 1} > 0$ is an indicator variable that takes a value of 1 if the standardized first year GPA is above 0 (meaning that the student GPA is above the cutoff), and 0 otherwise. I also include random error term u_i to include the unobserved characteristics that potentially have impact on my outcome variable. The main parameter of interest is τ from the model, which is the estimated effect of treatment effect being placed on Dean's list after first academic year. Also, I have a row vector of controls (X'_i) allows me to control for the effect of other variables that may influence the outcome variable, such as gender, ethnicity, and previous high school performance. As suggested by Calonico et al. (2019), I estimate the discontinuity using local linear regressions with triangular kernel weights, which assigns equal weight to all observations within a certain bandwidth of the cutoff value and gradually reduces the weight of observations as they move further away from the cutoff value. I present results using a bandwidth of 0.5 grade points. Also, since GPA data are discrete (in hundredths of a grade point), I cluster the standard errors as recommended by Davis S. Lee and David Card" (2008) because clustering the standard errors on GPA can help to improve the validity and reliability of the RDD by accounting for potential correlation among observations with similar GPA values.
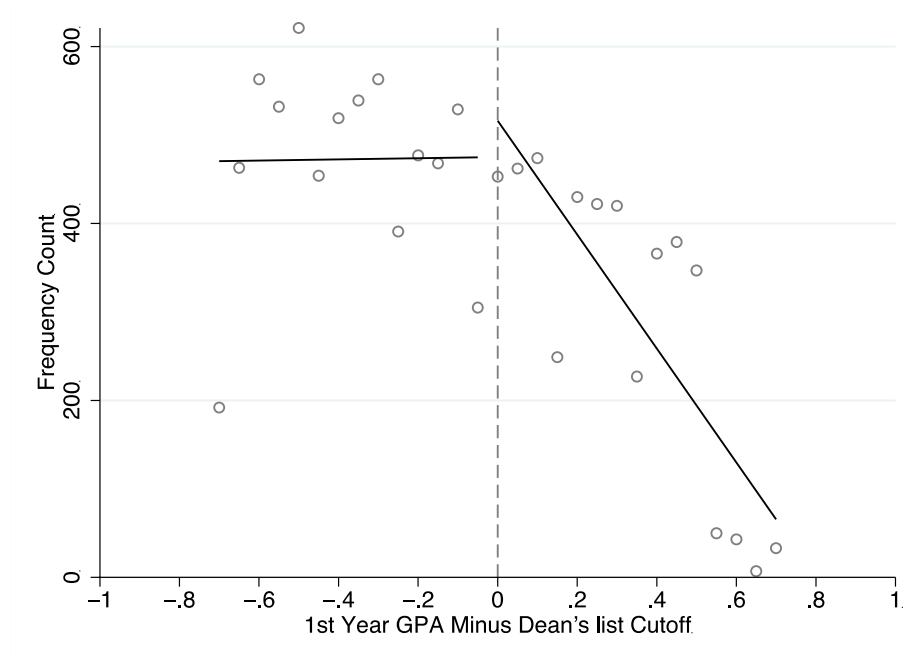
Figure 2: Student Grade Distribution Relative to the Cutoff

Before using the Regression Discontinuity Design (RDD) method, it is essential to ensure its validity. Addressing the issue of non-random sorting is crucial, as intentional positioning above or below the cutoff can lead to biased results. In this study, I am concerned that students may have intentionally raised their GPA to get above the cutoff for the Dean's List, potentially skewing the results. However, several factors reduce the likelihood of this concern. Firstly, first-year students are less familiar with university policies and may not know what grades are needed to get on the Dean's List. Secondly, most grades are based on end-of-semester examinations, making it challenging for students to adjust their performance in time to get their GPA above the threshold. To further investigate this issue, I examined the distribution of student grades relative to the threshold (Figure 2) with cell sizes of 0.05 grade points. If there is sorting or manipulation, then the distribution of grades is likely to be different around the cutoff point, which may result in biased estimates. From the observation of Figure 2, we can infer that the estimated discontinuity at the threshold is not statistically significant, which implies a continuity of student grades across the threshold. It is worth noting that when estimating the discontinuity at the threshold for different subgroups of the population, the results confirm that they are statistically insignificant. This suggests a continuity of student grades across the threshold for these subgroups as well. this suggests that there is no evidence of sorting or manipulation of the treatment variable, ensuring the balance between the treatment and control groups.

Additionally, I also ensure that students cannot manipulate their grades above the cutoff by making sure there are no discontinuities in their characteristics. According to the Table 2, I observed that several variables are statistically insignificant at the threshold: student high school grade percentile, number of credits attempted in the 1st year, male, age at entry, birth in North America, English as the native language, and attendance at campus 1 and 2. This suggests that students' observable characteristics do not influence their placement on the Dean's List after the first year. Since all

observable characteristics are continuous through the cutoff, this implies the validity of the RDD strategy.

Table 2: Estimated Discontinuities in Students' Observed Traits

	(1) HS grade percentile ranking	(2) Age at entry	(3) Male	(4) Borned in North America	(5) Native English Speaker	(6) Credit Taken	(7) Attending Campus 1	(8) Attending Campus 2
First year GPA > cutoff	0.104 (1.127)	0.016 (0.031)	-0.003 (0.018)	-0.018 (0.013)	-0.013 (0.021)	-0.021 (0.068)	0.013 (0.011)	0.008 (0.071)
Constant	76.7*** (0.653)	18.57*** (0.018)	0.386*** (0.011)	0.909*** (0.009)	0.75*** (0.016)	0.757*** (0.039)	0.085*** (0.007)	0.158*** (0.04)
Observations	10978	10978	10978	10978	10978	10978	10978	10978

Notes: Standard errors in parentheses, clustered on GPA

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Result

My study investigates the impact of Dean's List placement on several important academic outcomes, including the probability of making the list in the second year, subsequent GPA, total credits taken, dropout rate, and likelihood of graduating within four years. I examine these outcomes as they represent various measures of academic achievement and offer a more comprehensive understanding of the relationship between being on the Dean's List and overall success. Furthermore, I investigated the different effect of being on the Dean's List on different student subgroups based on varying levels of high school performance, gender, and native language.

I would expect to observe differences in the response of genders to positive incentives, given that prior studies suggest that women tend to be more receptive to positive incentives such as scholarship programs and academic advising compared to men, who are less responsive (Angrist et al., 2007). Additionally, research indicates that students from disadvantaged backgrounds may experience greater benefits from scholarship programs (Cismaru et al., 2022). Thus, I aim to investigate how students with poor prior academic performance respond to being on the Dean's List. Additionally, I also anticipate that English language proficiency may have an impact on the

Table 3: The Effect of Dean's List on the Probability of Getting Dean's list in the second year

	(1) All	(2) HS grades below median	(3) HS grades above median	(4) Male	(5) Female	(6) Native English speaker	(7) Nonnative English speaker
First year GPA > cutoff	0.017 (0.02)	0.107** (0.049)	0.013 (0.021)	-0.003 (0.029)	0.032 (0.022)	0.036* (0.021)	-0.032 (0.033)
Constant	0.23*** (0.008)	0.184*** (0.023)	0.237*** (0.009)	0.231*** (0.012)	0.23*** (0.011)	0.246*** (0.01)	0.183*** (0.019)
Observation	10978	1709	9269	4304	6674	8071	2907

Notes: Standard errors in parentheses, clustered on GPA

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

relationship between being on the Dean's List and academic success. Students who are non-native English speakers may face additional challenges in navigating the academic environment, which could influence their response to the Dean's List program. Our analysis aims to identify potential disparities in academic achievement and provide insights into how the Dean's List program can be utilized to support and promote student success. In the following sections, I present our findings on the impact of being on the Dean's List on various outcomes and across different subgroups.

Table 3 examines the effect of making the Dean's List in the first year on the probability of making the list again in the second year. The first column displays the estimated effect on all students group. The result shows that the estimated impact is small and statistically insignificant, suggesting that being on the Dean's List in the first year has little to no effect on the likelihood of making it again in the second year. Columns 2-7 of Table 3 examine the heterogeneity in the response of different student subgroups to making the Dean's List in the first year, revealing that the average effect is not consistent across all groups. The estimated impact of making the Dean's List in the first year on students with high school grades above the university median is small and statistically insignificant, but our results indicate that the encouragement effect is more significant for students who performed relatively poorly in high school, specifically those in the group who scored below the 50th percentile. I interpret these results as showing that students who are placed on the Dean's List have an average 10.7% greater chance of making the list again in their second year, after controlling for other characteristics, with a statistical significance level of 5%. By observing the Figure 3, I can observe there is significant discontinuity around the thresholding, indicating a positive impact on low-performing high school students. Our analysis also revealed a heterogeneity effect across students' English proficiency levels. Controlling for other characteristics, I found that native English speakers have a 3.6% greater chance of making the Dean's List again in their second year, with a statistical significance level of 10%. Figure 4 also shows a jump in likelihood around the cutoff, indicating a positive impact for this group. I can observe that the encouragement effect of making the Dean's List in the first year is more significant for low-performing high school students, with more than double the probability of making the list again in their second year compared to the native English speaker group.
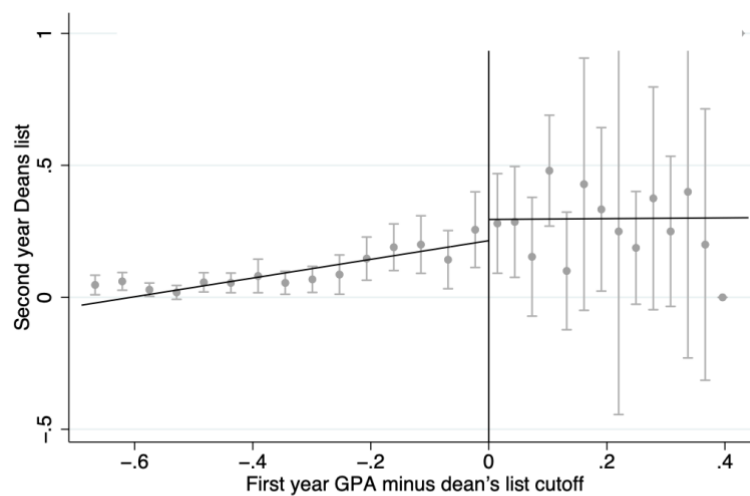

Figure 3: Estimated Impact on the Probability of Making the
Dean's List in the Second Year for Low Prior Academic
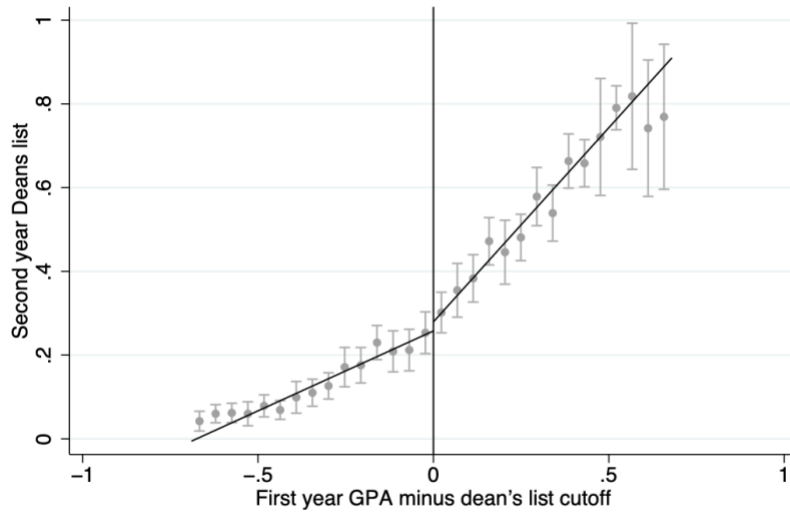Performance Group

Figure 4: Estimated Impact on the Probability of Making the
Dean's List in the Second Year for Native English Speaker

As our initial analysis suggests a positive effect of making the Dean's List in the first year on the probability of making it again in the second year, I further investigated whether students who make the list improve their future academic performance. Table 4 shows that being on the Dean's List has, on average, a negative effect on second-year GPA, decreasing it by 0.018. However, it is important to note that this result is statistically insignificant and does not vary by students' high school grade, sex, or English proficiency. Thus, our findings indicate that being on the Dean's List does not have a significant causal effect on improving students' second-year GPA, regardless of their characteristics. To further illustrate the impact of these results, we refer to Figure 5, which shows the estimated effect of being on the Dean's List on students' second-year GPA. As demonstrated by the continuous line in the figure, there appears to be little to no effect on students' second-year GPA. Additionally, Figure 6 displays the effect of being on the Dean's List on subsequent GPA for different subgroups, such as gender, high school performance, and native English speaker status. Consistent with Figure 5, the graphs in Figure 6 show mostly continuous lines through the threshold, suggesting a negligible effect on these subgroups.

Table 4: The Effect of Dean's List on the Second year GPA

	(1) All	(2) HS grades below median	(3) HS grades above median	(4) Male	(5) Female	(6) Native English speaker	(7) Nonnative English speaker
First year GPA > cutoff	-0.018	-0.072	-0.014	-0.014	-0.019	-0.003	-0.055
	(0.02)	(0.069)	(0.019)	(0.031)	(0.021)	(0.022)	(0.038)
Constant	3.326***	3.23***	3.334***	3.293***	3.346***	3.336***	3.293***
	(0.013)	(0.03)	(0.013)	(0.018)	(0.016)	(0.014)	(0.031)
Observations	9979	1559	8420	3927	6052	7348	2631

Notes: Standard errors in parentheses, clustered on GPA
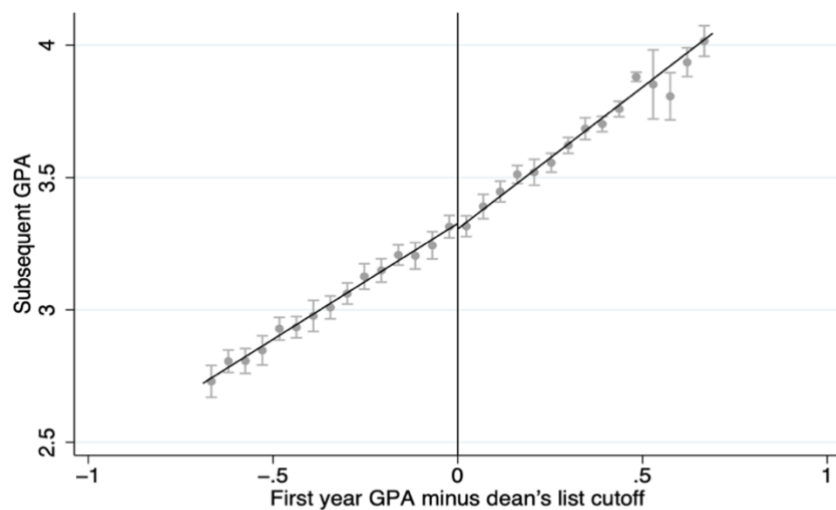* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

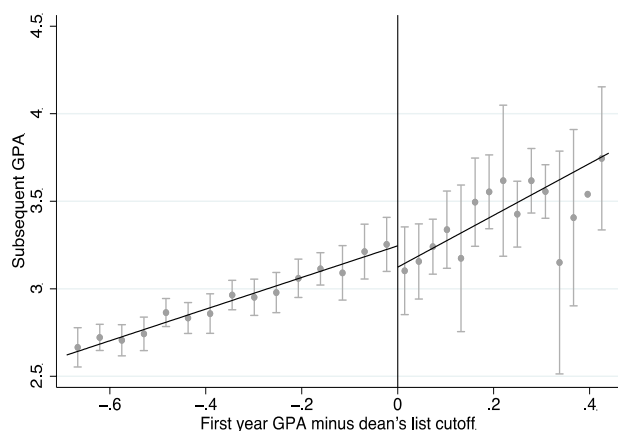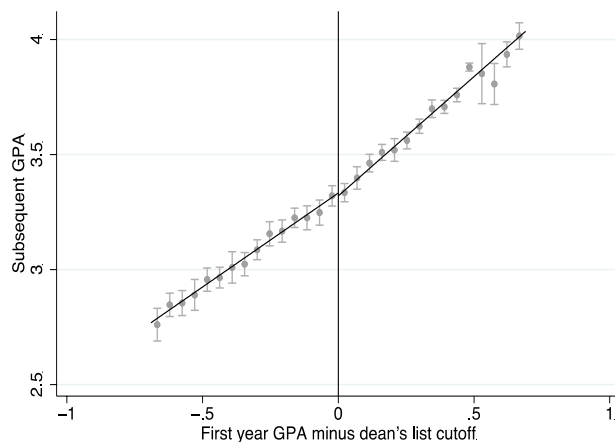Figure 5: Estimated Effect of Dean's List on Student
Second Year GPA

High School
Performance

High School Grade < Median

High School Grade > Median
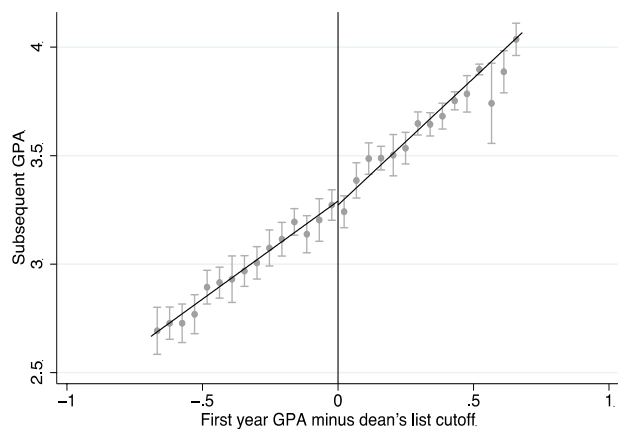

Gender

Male

Female

Native English Speaker or not
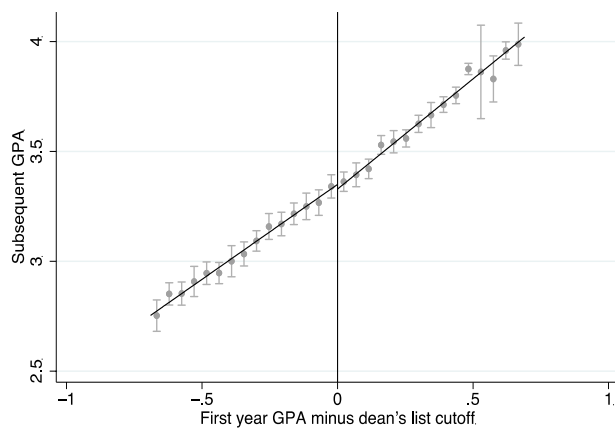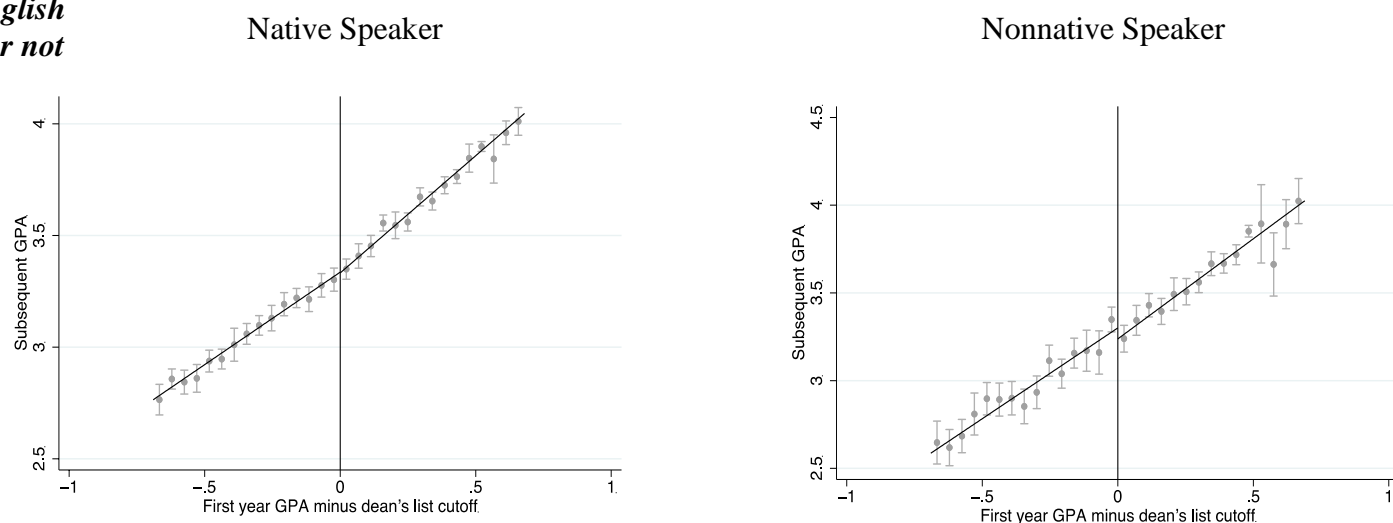
Figure 6: Estimated Effect of Being Named to the Dean's List on Second-Year GPA for Subgroup of Students

After studying the effect of being on the Dean's List on students' second-year GPA, I now turn my attention to investigating the impact on students' second-year credit load, or workload. This analysis provides insight into whether academic achievement translates into an increased workload, indicating whether students take more classes after being placed on the Dean's List.

Looking at the results presented in Table 5, I found that being on the Dean's List had a negative impact on the number of credits taken by students the following year, with an average decrease of 0.029. This trend was observed across all subgroups, including prior academic performance, gender, and English proficiency, although none of the estimates were statistically significant at conventional levels. Therefore, I can conclude that being on the Dean's List does not have a significant causal effect on a student's credit load. These findings suggest that academic achievement, as measured by being placed on the Dean's List, does not necessarily result in an increase in a student's academic workload in the following year.

Table 5: The Effect of Dean's List on the Total Credit Taken in the Second Year

	(1) All	(2) HS grades below median	(3) HS grades above median	(4) Male	(5) Female	(6) Native English speaker	(7) Nonnative English speaker
First year GPA > cutoff	-0.029 (0.086)	-0.018 (0.193)	-0.018 (0.081)	-0.028 (0.096)	-0.030 (0.099)	-0.043 (0.091)	-0.006 (0.108)
Constant	3.185*** (0.061)	3.406*** (0.111)	3.153*** (0.058)	3.225*** (0.074)	3.159*** (0.064)	3.159*** (0.059)	3.262*** (0.079)
Observations	10978	1709	9269	4304	6674	8071	2907

Notes: Standard errors in parentheses, clustered on GPA
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Expanding upon the previous analysis of the impact of being on the Dean's List on students' second-year credit load, we can delve deeper into the relationship between academic achievement

and student retention by examining the likelihood of dropping out in subsequent years. This analysis aims to shed light on whether being on the Dean's List has a lasting impact on students' academic trajectories beyond the second year.

Moving to Table 6 and Figure 7, I can see that being on the Dean's List has a coefficient estimate of 0.000 (value rounds to zero) in the overall student group, which is statistically insignificant at conventional levels. This indicates that being placed on the Dean's List does not have a significant causal effect on student dropout rates. However, it is worth noting that the point estimate for being on the Dean's List is negative, suggesting a potential reduction in the likelihood of dropping out. The estimates for subgroups of students, such as those with high school grades below and above the median, males and non-native English speakers, are also not statistically significant. The analysis is based on a total of 10,978 observations, with subgroups ranging from 1,709 to 9,269 observations. According to the result, I cannot conclude that being placed on the Dean's List has a significant causal effect on student dropout rates. In other words, regardless of their characteristics, students on the Dean's List may not necessarily be more or less likely to leave school.

Table 6: The Effect of Dean's List on the Drop Out rate

	(1) All	(2) HS grades below median	(3) HS grades above median	(4) Male	(5) Female	(6) Native English speaker	(7) Nonnative English speaker
First year GPA > cutoff	0.000	-0.012	0.000	0.009	-0.008	0.007	-0.020
	(0.014)	(0.037)	(0.014)	(0.017)	(0.018)	(0.015)	(0.023)
Constant	0.094***	0.092***	0.094***	0.095***	0.094***	0.091***	0.106***
	(0.008)	(0.019)	(0.008)	(0.011)	(0.010)	(0.009)	(0.015)
Observations	10978	1709	9269	4304	6674	8071	2907

Notes: Standard errors in parentheses, clustered on GPA

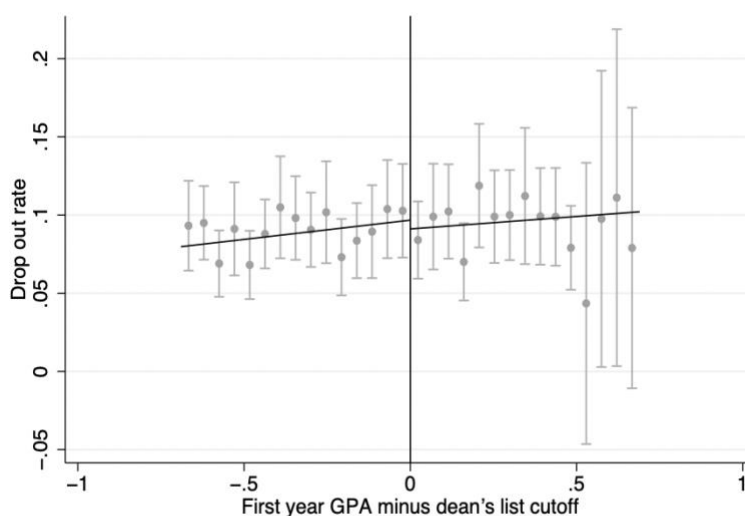* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 7: Estimated effect of Being on the Dean's List on Decision to Drop Out

To gain a more comprehensive understanding of the relationship with overall academic achievement, beyond just the immediate response of students, I conducted further analysis to examine the long-term impact of being on the Dean's List. I used Table 7 and Figure 8 to estimate the effect of being on the Dean's List on the likelihood of graduating within four years. My findings suggest that being on the Dean's List may decrease the likelihood of students graduating within four years by 2.2%, with an estimated result ranging from -0.032 to -0.009 across different student subgroups. However, it's important to note that these results are not statistically significant at conventional levels, and they do not vary based on students' high school grades, gender, or English proficiency.

Table 7: The Effect of Dean's List on the Probability of Graduating within Four Years

	(1) All	(2) HS grades below median	(3) HS grades above median	(4) Male	(5) Female	(6) Native English speaker	(7) Nonnative English speaker
First year GPA > cutoff	-0.022 (0.026)	-0.015 (0.108)	-0.029 (0.024)	-0.032 (0.04)	-0.009 (0.03)	-0.024 (0.027)	-0.016 (0.052)
Dean's List	0.692*** (0.013)	0.624*** (0.033)	0.704*** (0.014)	0.649*** (0.023)	0.72*** (0.016)	0.694*** (0.014)	0.686*** (0.035)
Constant	7167	1202	5965	2828	4339	5404	1763

Notes: Standard errors in parentheses, clustered on GPA
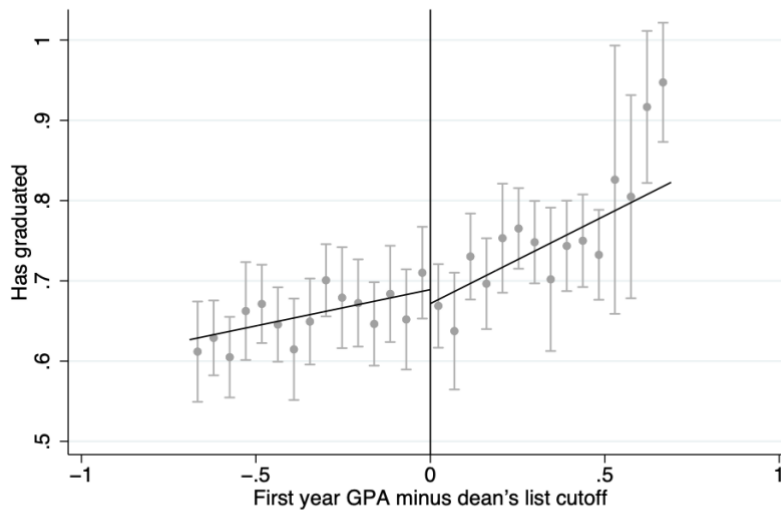
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 8: Estimated effect of Being on the Dean's List on Probability of Graduating within four years

Discussion

After conducting an analysis of various academic outcomes, including second-year GPA, credit load, and likelihood of dropping out, I have found that being on the Dean's List has a significant impact on the likelihood of getting on the list again for students with poor high school academic performance, which aligns with previous literature suggesting that students with poor academic backgrounds may be more responsive to educational incentives. One possible explanation for this effect is that students who were not high achievers in high school may feel a greater sense of accomplishment and recognition from being on the Dean's List, which could further motivate them to continue their academic success. Additionally, I have found that being on the Dean's List has a moderately sized impact on native English speakers' likelihood of getting on the list again in the second year. This could be due to the advantage these students have in understanding and utilizing the academic language used in their courses, which could lead to higher grades and an increased likelihood of being recognized on the Dean's List. However, I found no significant causal effect of being on the Dean's List on subsequent GPA, retention, and probability of graduating within four years, regardless of students' characteristics. This suggests that being on the Dean's List is more of a recognition of past academic achievement than a predictor of future success. Therefore, students who make it onto the Dean's List may have already been high achievers before being recognized, and their academic performance in the following year is unlikely to change significantly.

Additionally, being on the Dean's List is not necessarily indicative of all aspects of academic success, such as motivation, study habits, or critical thinking skills. Therefore, simply being on the Dean's List may not be enough to ensure continued academic success in subsequent years. Finally, it's possible that being on the Dean's List is not a strong enough motivator for students to continue performing at a high level. For instance, if a student's primary motivation for being on the Dean's List is to receive recognition or a boost to their resume, rather than a genuine desire for academic success, they may not be motivated to continue performing at a high level in subsequent years.

However, the study's limited access to data, specifically student third-year and fourth-year GPA, may limit the accuracy of its findings regarding the long-term impact of being on the Dean's List on student outcomes. Graduation rates are influenced by numerous factors, including student performance in later academic years, personal circumstances, and external factors such as employment opportunities and financial constraints. Without access to this additional data, it may be challenging to draw definitive conclusions about the impact of being on the Dean's List on a student's ability to graduate within four years.

Conclusion

The study utilized regression discontinuity analysis to investigate the causal effect of being on the Dean's List on students' future academic performance. The findings indicated a positive impact of being on the Dean's List for students who had poor high school performance and those who are native English speakers. However, the study did not find a significant effect of being on the Dean's List on a student's subsequent GPA, number of course credits taken in the following year, probability of dropping out, and likelihood of graduating within four years. Although there was some variation in the effect of being on the Dean's List on the probability of getting on the Dean's

List in the second year, the overall impact was minimal. These results suggest that while being on the Dean's List may be a valuable recognition of academic achievement, it may not necessarily lead to improved academic outcomes in subsequent years. Further research is needed to investigate other factors that contribute to academic success, such as motivation, study habits, and support systems.

These findings have important implications for higher education institutions, particularly in terms of recognizing and rewarding academic achievement. Institutions should consider alternative ways to recognize and incentivize academic excellence, such as providing additional resources or opportunities for students to engage in research or leadership roles.

In conclusion, this study's findings provide evidence that being on the Dean's List has no significant causal impact on a student's academic success in the short or long term. More research is needed to explore other factors that influence academic performance, and institutions should consider innovative ways to recognize and reward academic excellence beyond symbolic recognition.

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