The Impact of Greek Affiliation on Grades and Course Selection

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Abstract

We seek to understand how affiliating with a Greek organization impacts both grades and course selection. This research provides a novel addition to the literature due to a unique situation at the sample university, in that the first opportunity for freshmen to join Greek organizations occurs in the spring semester rather than the fall, as is more common. This situation allows us to control for otherwise unobserved characteristics that may be common to those who affiliate with Greek organizations. For men, joining a Greek organization is associated with a .07 point decrease in the grade received for an average class, while, for women, it is associated with an increase of .02 points in the fall semester and a decrease of .06 points in the spring semester. Joining a Greek organization is also associated with a decrease in the difficulty of selected courses, such that the average course selected provides grades that are .03 points higher than the average course, controlling for enrolled student characteristics.

JEL Codes: I, I21, I23, I24

Keywords: Greek, fraternity, sorority, grades, GPA, course selection

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Introduction

As universities are primarily educational institutions, it is important for them to consider how the inputs they employ affect the outputs that they provide, most importantly the education of their students. While these inputs immediately appear to be students, professors, and academic resources, the set of inputs is large, and includes other elements such as campus norms, students' social lives, and extracurricular student organizations. It is in a university's interest to understand how particular organizations that attract significant portions of their undergraduate populations impact the university's overall educational mission. Two particularly prominent examples of these types of student groups are fraternities and sororities, collectively called Greek organizations.

At Duke University, an elite medium-sized private liberal arts university from which the data used in this research are derived, Greek organizations are the type of student group with the greatest undergraduate enrollment (Bryant, Spenner, Martin, Rollins, & Tipett, 2006). Students in these groups differ in some important ways from non-Greek-affiliated, or independent, students.

There is a large literature on peer effects in higher education, with much of that research focused on student grade attainment, and so it may be the case that joining a Greek organization has some impact on students' grades. Additionally, variation exists in grading practices among courses. Given that student view grades received as important for later life outcomes, students may selectively chose courses in which it is easier to attain a high grade. The purpose of this research is to understand the impact of Greek affiliation on grades and course selection.

Review of Previous Literature

If affiliating with a Greek organization impacts students' grades, it is likely the result of the large change in peer cohort that one undergoes as a result. The quality and behaviors of one's peers,

be they classmates, roommates, or friends, can have a significant impact on academic achievement, at all educational levels. For example, in the Chicago public school system, students are sometimes separated into high, medium, and low ability tracks. In schools with tracking, low ability students tend to perform more poorly than their counterparts in untracked schools, since they are surrounded by those with lower ability, and not place in a randomly assigned classroom. Similarly, high ability students in tracked schools tend to perform better than their peers in untracked schools (Lefgren, 2004). It is not only peer quality that has been observed to have an impact on student achievement, but also peer characteristics. The average parental education, gender representation, and racial representation of a classroom have all been shown to have an impact on student achievement (McEwan, 2001; Hoxby, 2000).

More relevant to this study, peer effects have also been studied at the undergraduate level. Sacerdote (2001) reports that peer effects impact GPA at the roommate level. That is, when controlling for academic quality via admissions office student ratings, the GPAs of randomly assigned freshman year roommates are correlated with each other. Similarly, the probability that a student's roommate drank alcohol before coming to college is correlated with lowered student GPAs, likely through a mechanism where either the student begins to drink or the student's roommate may expect the room to operate as more of a social space, both of which one would expect to lower grades (Kremer & Levy, 2008). Overall, the impact of peer effects seems to be quite strong and can impact a variety of outcomes and behaviors such as grades, drinking behaviors (Kremer & Levy, 2008), fraternity membership (Sacerdote, 2001), or even political views (Zimmerman, Rosenblum, & Hillman, 2004; Boisjoly, Duncan, Kremer, Levy, & Eccles, 2006).

Greek organizations serve as a particularly powerful peer cohort because of the degree to which these groups are involved in their members' lives and facilitate their members' interactions

with others. At the sample university, each particular Greek organization ("chapter") is reserved a block of a dormitory such that any member's room and dorm mates are primarily also members of the group. Additionally, many social activities are organized through the group and because of general proximity, it is easier for unscheduled social activities to occur with members rather than nonmembers students. Peers tend to have different impacts on individuals depending on how the agent and peer are related, be they roommates, dormmates, or friends (Sacerdote, 2001; Lam, 2012). Members of a given student's particular Greek organization ("chapter") are likely to occupy more than one of these roles.

Additionally, membership in a Greek organization is related to a variety of behaviors that differ from non-Greek students. At the sample university, Greeks spend more time socializing and partying, drink and use drugs more, and consider drugs and alcohol more important to their social lives (Bryant et al., 2006). Alcohol consumption, both in intensity and frequency, is negatively correlated with GPA (Wolaver, 2002). This is compounded by the previously mentioned facts that Greek students tend to room together and alcohol consumption has a negative peer effect on GPA at the roommate level.

Previous studies have attempted to determine the impact of Greek affiliation on GPA. Grubb (2006) reports that Greek students tend to have higher GPAs nationwide but that, controlling for initial academic quality, joining a Greek organization is correlated with decreased academic performance, with Greek students receiving GPAs that are 1 to 10% lower than non-Greek students. However, this study suffers from the same issue that much research into peer effects suffers. Manski (1993) separates the impact of group membership into exogenous, endogenous, and correlated effects. Exogenous and endogenous effects are those where an agent is affected by the nature of their peer group's exogenous characteristics or endogenous behaviors,

respectively. Comparatively, correlated effects are not truly peer effects but can appear to be peer effects when selection bias is not controlled for. They arise when the characteristics of a given group's members are correlated and so they tend to have similar behaviors, behaviors which they would have regardless of their peer relationship. The issue alluded to earlier is that it is difficult to parse out correlated effects from the others if selection bias is not controlled for. While Grubb's work attempts to control for this using academic quality, there may also exist some unobserved personality or behavioral traits that are common to those who eventually join a Greek organization. Typically, this would be impossible to control for, since, at most schools, recruitment for Greek organizations ("rush") occurs during the first few weeks of school. However, at the sample university, rush occurs in primarily in freshman spring, allowing us to better control for these characteristics with academic performance and course selection prior to joining. Moreover, there is some additional heterogeneity provided as all groups also allow sophomores to rush, though it is less likely that they gain membership. Even more rarely, some Greek organizations even allow individuals to rush at any point in their undergraduate careers.

If there are differences in the relative ease of earning a high grade in a course, students believe their GPAs will impact overall life outcomes, and Greek affiliation impacts grade attainment, then it is conceivable that Greek students will selectively seek out courses in which grade attainment is comparatively easier. For this paper, course "ease" or "difficulty" will refer to "ease of grade attainment," generally how well a student can expect to be able to maximize their grade while minimizing their time investment, relative to other courses. It can be considered a function of both content difficulty and grade distributions. It is widely regarded that significant grade variation exists among universities, departments, and professors. Goldman, Schmidt, Hewitt, and Fisher (1974) report, for example, that STEM courses tend to have more difficult grading standards, controlling for student quality. As could be expected, students tend to gravitate towards both easier majors and

courses. In a longitudinal study which tracked the divergence of grading practices between departments over time, it was reported that as grading practices diverged, the enrollment in easier grading departments increased (Sabot & Wakeman-Linn, 1999).

While vague ideas about the nature of these differences are common, specific knowledge about which courses are easier to attain high grades in is not. An increase in the accessibility of grading information may then increase the probability that students select courses in which it is easier to attain high grades. At Cornell, when a website rolled out to make course grade distributions publicly available, enrollment began to slant towards courses with easier grading standards. As evidence that students were using this information to make course selection decisions, visits to the website increased dramatically during course enrollment periods (Bar, Kadiyali, & Zussman, 2011). Information about grade distributions is not available at most institutions, but certain peer groups privy to large pools of anecdotal evidence, like Greek organizations, may have greater information about these course characteristics and may be able to circulate that information to members more easily.

Other characteristics about Greek students may also support the hypothesis that they are more likely to select easier courses. In the data used, while Greek students tend to report enjoying their overall undergraduate experience more, they tend to enjoy classes and relationships with their professors less (Bryant et al., 2006). Broadly, individuals tend to report lower satisfaction with choices when they are more externally incented rather than intrinsically motivated (Stringer, Didham, & Theivananthampillai, 2011). This statistic, then, may allude to course selection choices being more externally motivated for Greek students – i.e. they chose their courses less because they are interested in the material and more because they want to increase their GPA. Additionally, work at the University of Florida has shown that Greek students are more likely to admit to cheating, a

behavior that is also correlated with one's degree of involvement within their chapter (Storch & Storch, 2002). This greater willingness to use non-academic grade maximization strategies may extend to course selection.

If it is the case that Greek students are more likely to selectively choose easier courses, this has broader consequences. Many consider there to be a "STEM Crisis" in the United States, based on the notion that the number of students being educated in Science, Technology, Engineering, and Mathematics fields is too low to be able to keep up with the projected future demand for these skills. In China and Japan, half of all university degrees awarded are in these fields, whereas in the United States, only one-third of awarded degrees are (National Science Foundation, 2012). This differential may make the United States a less competitive nation in the future. Part of this comparatively lower ratio can be attributed to the difficulty of STEM courses. If there is some aspect about the Greek community that encourages people to select out of courses in which it is more difficult to attain high grades, which, on average, are more likely to be STEM courses, this may aggravate this issue.

Empirical Approach

Measuring the Effect of Greek Affiliation on Grades

We first seek to determine how Greek affiliation impacts course grades. To do this, the following model is considered:

$$GP_{tij} = \beta_0 + \beta_1 G_{Stij} + \beta_2 G_{Ei} + \beta_3 X_{it} + \beta_4 \delta_j + \varepsilon \quad (1)$$

Here, GP is the grade received by student i for their performance in course j taken in semester t, measured on Duke's 4 point scale. G_S is the primary variable of interest, a dummy that equals 1 if the course was taken during a semester in which the student was a member of a Greek organization. G_E is a dummy that equals 1 if the student was a member of a Greek organization at any point during

their undergraduate career. It captures any otherwise unobserved characteristics of those who eventually join Greek organizations. δ_j is the fixed effect for course j. X is a vector of controls. These controls include race, gender, parental income and education, high school type, SAT score, Office of Admissions' scores (scores which range from 1-5 are assigned to the student by Duke's Office of Admissions at the time the student applied in the areas of achievement, curriculum difficulty, essay, personal qualities, and letters of recommendation), which semester the course was taken in, and whether or not the course was taken during the spring semester.

G_S is time variant while G_E is not. While course characteristics may change slightly over time, δ is also considered to be time invariant. X includes both time variant and time invariant controls, all of which may have an impact on grades. The time invariant controls are all student characteristics. Race, gender, and family background have all been shown to have an impact on student performance (Darity, Castellino, Tyson, Cobb, & McMillen, 2001; Hendrix, 2009; Betts & Morell, 1999). Admissions ratings and SAT scores are used to proxy for pre-matriculation student quality using the same metrics that the university considers when trying to predict how successful an applicant would be at the university, were they admitted. One might consider the valid arguments that academic success is not the only type of success the Admissions office might consider, or that not each of these categories may necessarily be predictive of academic success; however, these ratings are still all positively correlated with student grades. The time variant controls indicate when the course was taken. In the data, semester grades tend to increase over time. Also, there appear to be GPA differences between the fall and spring semester for Greek students.

In addition to helping us understand the impact of Greek affiliation on course grades, this model was used to generate a proxy for course difficulty. Not only do course fixed effects control

for course specific grade variation, but the value for each course could then be used as an indicator of the ease of grade attainment of the course.

Measuring the Effect of Greek Affiliation on Course Selection

We next consider a similar model to determine how Greek affiliation impacts the selection of courses by their ease of grade attainment:

$$E_{it} = \beta_0 + \beta_1 G_{Sit} + \beta_2 G_{Ei} + \beta_3 X_{it} + \varepsilon \quad (2)$$

Here, E_{is} is the average of δ_j for all courses J_t taken by student i in semester t. All other variables are the same as those explained above, with the rationale that any factor that may influence a student's grades may also influence their propensity to select harder or easier courses. One slight difference is that, for this model, G_S equals 1 if the student was Greek during the semester the course was chosen, rather than taken, which is typically the semester before.

A benefit of this model is that it can be interpreted easily, since the course fixed effects were generated from a regression (1) where course grade is the dependent variable. The value for the course fixed effect reflects the increase in one's course grade a given student could expect from taking that course compared to a course of average difficulty. As a result, the coefficients of this regression (2) indicate each variable's effect on course selection, in terms of the course difficulty's impact on their expected grade.

Data and Methodology

Source

The data come from Duke University's Campus Life and Learning Project, a large longitudinal survey of student life at the university, given to the matriculating classes of 2001 and 2002. These surveys were deployed four times: prior to matriculation and during the student's 1st,

2nd, and 4th years. On each survey, students could opt in to permit the surveyors access to certain confidential information held by the Admissions, Registrar's, and Financial Aid Offices. These surveys were targeted to the entire undergraduate student body, though underrepresented groups were oversampled to achieve meaningful sample sizes for those groups, such that under half of White students, all Black and Hispanic students, and about 2/3s of Asian students were sampled. The dataset includes 1,365 students in total.

Response rates for the surveys began high at 77% between each cohort's first survey, but decreased each year to 71%, 65%, and then 59% in the final year. There is some non-response bias such that the population of students who chose to complete the first survey is less likely to be black and more economically advantaged than the overall population (Bryant et al., 2006). After this point, though, the sample characteristics remain relatively stable throughout successive surveys (Arcidiacono, Aucejo, & Spenner, 2012). Among those that completed at least one survey, 91% provided permission to access administrative data. Included in this administrative data are the transcripts of each student, providing each course taken, the semester it was taken in, and the grade received – a total of 55,344 course observations.

Variable Creation and Data Treatment

Each variable used in these models could easily be constructed given the dataset, with the exception of G_S. A series of rules and assumptions (available in the Data Appendix) was used to attempt to determine which semesters individuals were members of a Greek organization based on survey responses regarding Greek membership and an administrative Greek membership variable. Briefly, if they reported membership first during freshman year, they were assumed to have entered during Freshman Spring Rush, if they reported membership first during Sophomore year, they were assumed to have entered during Sophomore Spring Rush, and if they reported it first during their

senior year, which is uncommon, they were assumed to have entered halfway between filling out the latter two surveys, in their junior spring.

Since the set of rules used to generate this variable's values is quite extensive, it is possible that some error may have been introduced as a result. However, $G_S = 1$ for 32.5% of student-semesters, which is similar to statistics provided by the university that around 30% of students are members of a Greek organization at any given time. It should be noted that the number of students ever affiliated with a Greek organization, in the data, is far higher, at 46%. Some of this discrepancy can probably be explained by the flow of individuals into and out of Greek organizations at various points in their undergraduate career as well as the existence of off-campus (unregistered) Greek organizations.

A number of observations were removed for a variety of reasons. These included any observations with missing values, with courses taken outside the fall or spring of the student's freshman through senior years, any courses from which the student withdrew, any courses which were not present in the dataset at least 20 times, and Writing 20, Special Topics courses or Independent Study courses. While removing courses from which students withdrew may bias the results, since presumably an individual would only withdraw if they were expecting to receive a grade far lower than their GPA, there is no way to know exactly how low their expected grade must be for that individual to consider withdrawing. However, fewer than 3% of courses had a withdrawal grade. While removing classes which are present in the dataset fewer than 20 times preferences larger courses, this was necessary to limit the dataset to courses for which course fixed effect values could be ascribed with reasonable confidence. This limited the number of courses to 536, which is about 25% of courses, but 75% of observations. Lastly, Writing 20, Special Topics courses, and Independent Study courses were removed as these courses numbers are used to bucket together sets of unrelated courses. While these courses have higher grades on average, which may also introduce

some bias, it is unreasonable to consider them groups in a fixed effects model. Also, they should not be included in the semester average ease of grade attainment in the second model since all freshman are required to take Writing 20 and courses labelled Special Topics or Independent Study are so varied and offered so infrequently that no student could reasonably select these courses on the basis of their ease or difficulty. After these observations were removed, 19,806 remained.

Results and Discussion

Summary Statistics

Summary statistics showing population differences between those who were ever or never affiliated with a Greek organizations ($G_E = 1$ vs. $G_E = 0$) can be found in Table 1. Greek students in general are less likely to be Black or Asian, are more affluent, and tend to have better educated parents. However, there are no statistically significant differences between Greek and non-Greek populations in any admissions metric. With the exception of the lower probability that these students are Asian, these background characteristics tend to be correlated with improved academic performance. This information raises another possible hypothesis for how joining a Greek organization may affect one's grades. Since peer characteristics impact student performance, joining a Greek organization may improve one's grades as Greek organization tend to concentrate individuals with backgrounds that are correlated with improved performance. These statistics suggest then that one could expect joining a Greek organization to have a positive impact on grades.

GPA Trends

GPA trend differences between students who were ever affiliated with a Greek organization and never affiliated with a Greek organization can be found for men and women in Figure 1. When considering these trends, it is important to remember that they capture student background, student ability, Greek peer effects, and course selection. For men, Greek GPAs appear, overall, to be quite

Table 1. Summary statistics of selected characteristics by Greek affiliation[1]

Mean variable values for:	$G_E = 0$	$G_E = 1$
Demographics:		
Black	0.15*	0.06*
Hispanic	0.09	0.11
Asian	0.21*	0.08*
Other Race	0.04	0.04
Female	0.49	0.52
Legacy	0.18	0.19
Attended Private High School	0.17	0.23
Admission's Office Scores:		
SAT[2]	1400	1400
Achievement	4.24	4.20
Curriculum	4.66	4.68
Essay	3.41	3.37
Personal Qualities	3.39	3.39
Letter of Recommendation	3.77	3.73
Mother's Education:		
Less than Bachelor's	0.24*	0.16*
Bachelor's to Masters	0.53	0.57
PhD, JD, or MD	0.08	0.12
Missing	0.16	0.15
Father's Education:		
Less than Bachelor's	0.14*	0.09*
Bachelor's to Masters	0.42	0.38
PhD, JD, or MD	0.28*	0.38*
Missing	0.16	0.15
Family Income:		
<50,000	0.15*	0.09*
50,000-100,000	0.21*	0.14*
100,001 - 200,000	0.26	0.24
>200,000	0.19*	0.30*
Missing	0.18	0.22
Observations (Sample %)	983 (63.96%)	554 (36.04%)
Weighted Population %	0.54	0.46

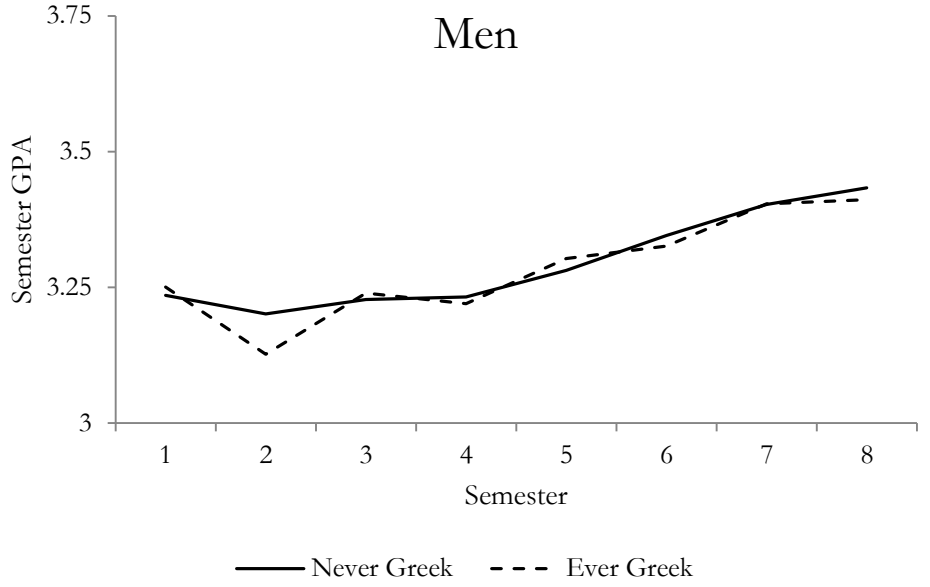
[1]The data oversample by race. Observations were reweighted by race to better represent the population distribution and thus these statistics are not representative of the sample used.

[2] For students who only took the ACT, scores are imputed.

*p<.05 for difference in mean between groups

similar to non-Greek GPAs, whereas for women Greek GPAs are higher than their non-Greek peers, by an average of .09 points. A one-way ANOVA indicates that the difference in semester GPA is statistically significant for women, but not for men. This suggests that the models explained earlier should also include interaction terms between being female and all Greek related variables. There are some important differences between sororities and fraternities that may explain this difference. Sororities tend to be larger and thus less selective. At the time the data were collected, sororities did not live together, while fraternities did. There are also large differences in the general cultures of each of these types of groups. For example, nationally, while there are significant differences in alcohol, marijuana, and cigarette use between Greek and non-Greek men, no such differences exist for women (McCabe et al., 2005).

The difference between the spring and fall semesters seems to have an important effect on Greek students' GPAs. While grades tend to go up over time, for Greek men, there are dips in GPA in the spring of the first two years, with a large dip in semester 2, likely the result of pledging. For Greek women, this trend is even more extreme with decreases in GPA between fall and spring semesters for their first three years of a larger magnitude than men ever see. The GPA differences between fall and spring semesters for Greek members may be attributed to some characteristics exclusive to Duke. Rush and fraternity pledging all occur in the spring semester, whereas at most schools they occur in the fall. For both potential new members and existing members, rushing and pledging are stressful and require large time commitments. Also, the university has a strong basketball program. Students cannot buy tickets for these games but must instead line up or camp out before games for admission, which also incurs large time costs. It may be the case that Greek students are more likely to attend games.



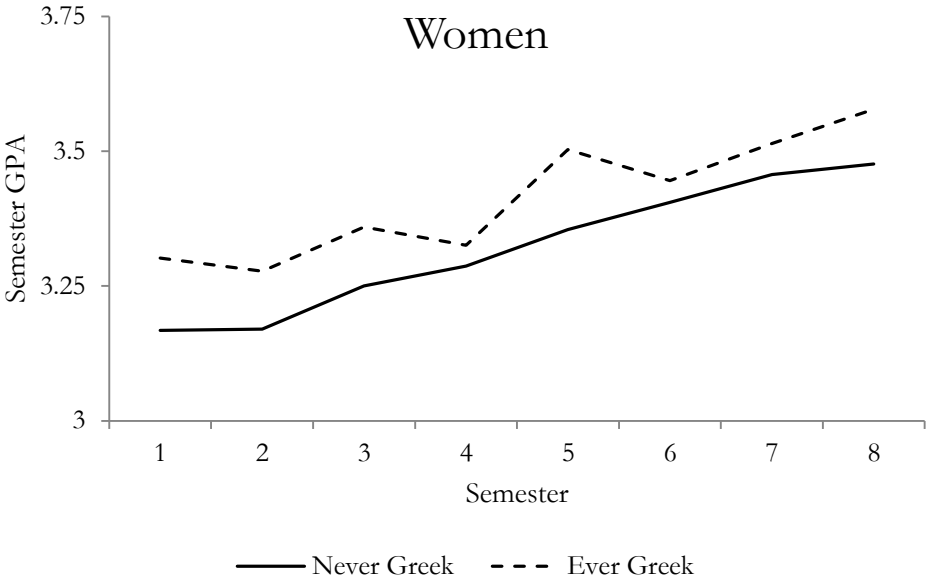


Figure 1. Non-cumulative semester GPAs between students who have ever been affiliated with a Greek organization and who have never been affiliated with a Greek organization, separated by gender

Greek Affiliation on GPA

To determine the effects of joining a Greek organization on GPA, we regress course grades on a variety of controls, the results of which are presented in Table 2. The Greek-related variables of interest suggest that, overall, there is a small but significant ($p<.05$) negative effect on grades from joining a Greek organization. For men, there is a decrease of .07 points regardless of semester, while, for women, the effect is more nuanced, as the spring semester interaction variable is statistically significant. Female Greeks experience a slight increase in grades during the fall semester of .02 points, while, in the spring, grades decrease by .06 points. This variation matches what would be expected by the trends shown in Figure 1. Assuming a roughly equal number of classes is taken by Greek women each semester, going Greek has a negative effect on women's grades overall. We are not able to explain though, what may cause Greek women to experience between-semester variation in grade impacts while men do not.

The Greek ever variable is not statistically significant, so we can't make a claim as to the nature of those who select into Greek organizations outside of any other background characteristics already being controlled for. This may bolster confidence in the accuracy of any previous literature that could not control for any personality or behavioral differences between those who select into Greek organizations and those who don't, such as the analysis done by Grubb (2006). Additionally, this model is robust to two potentially limiting methodological points. When including all courses, not just those featured at least 20 times in the dataset, and when imputing for projected course grade rather than removing withdrawals[1], the results and p-values are similar.

[1] When a student withdraws from a course, they receive a W, WP, or WF, the latter two of which indicate whether they were passing or failing the course at that time. We attempted to impute what expected grades might be for students to choose to withdraw by assigning very low grades which are uncommon in the dataset. W or WPs are assigned Ds and WFs are assigned Fs.

Table 2. OLS Regression, Effects on Course Grade with Course Fixed Effects

Demographics		Family Background	
Black	-0.168***	Mother < Bachelor's	0.026**
	(0.017)		(0.012)
Hispanic	-0.049***	Mother PhD, JD, MD	0.023
	(0.015)		(0.016)
Asian	0.046***	Father < Bachelor's	-0.046***
	(0.014)		(0.015)
Other Race	0.006	Father PhD, JD, MD	0.052***
	(0.023)		(0.012)
Female	0.073***	Income < $50,000	-0.102***
	(0.013)		(0.015)
Legacy	0.074***	Income $50,000 - 100,000	-0.014
	(0.015)		(0.014)
Private HS	0.071***	Income > $200,000	-0.021
	(0.013)		(0.013)
Admissions Scores		Semester	-0.014***
SAT x 100	0.104***		(0.003)
	(0.006)	Spring	-0.024*
Achievement	0.164***		(0.014)
	(0.007)	Ever Greek	0.016
Curriculum	0.047***		(0.026)
	(0.01)	Greek in Semester	-0.072**
Essay	-0.008		(0.031)
	(0.01)	Greek in Semester * Spring	0.001
Personal Qualities	0.055***		(0.027)
	(0.009)	Greek Ever * Female	0.009
Letters of Recommend.	0.048***		(0.034)
	(0.009)	Greek in Semester * Female	0.088**
			(0.041)
		Greek in Semester * Female * Spring	-0.078**
			(0.035)
		Constant	0.581***
			(0.088)
R^2	.108		
Observations	19,806		

Note: *p<.1, **p<.05, ***p<.01

Despite this trend though, this information should not be seen as an attempt to make any sort of value judgment on the nature of Greek organizations. They provide a number of both short and long term benefits to their members, which, for undergraduates, may be worth the academic cost. In fact, joining a Greek organization may be a lifetime utility maximizing choice, which is still the primary goal for undergraduates, even if they are at an academic institution. Also, two arguments supporting Greek organizations from a university's standpoint may be valid. In one, some may consider the central mission of a university to be maximizing the lifetime utility of their undergraduates, which, if the possibility mentioned above is true, also holds. Alternatively, even if the university's mission is primarily academic, improving lifetime outcomes may increase alumni donations, which can loosen future financial constraints, and thus the short term trade off may maximize long term academic improvements.

Greek Affiliation on Course Selection

To determine the effect of Greek affiliation on course selection, we regress semester average course difficulty, as determined by course fixed effects averaged for that semester, on a variety of characteristics. The results of this regression are presented in Table 3. Joining a Greek organization has a small but significant positive effect on average semester ease. The coefficient on the Greek in semester variable can be interpreted as saying that Greek affiliated students take easier courses such that the grade one can expect to receive is increased by .03 points as a result.

While it may seem surprising that there is no variation between the fall and spring semesters for Greek women, as there is for the grades of Greek women, it should not be. It is unlikely that anyone would be able to detect such small variation between semesters in their own lives. Even if they do, since all semesters affect final GPAs equally, there would be no incentive to mitigate this between-semester grade variation via course selection. What may also be surprising is that Greek

Table 3. OLS Regression, Effects on Semester Average Course Ease

Demographics		Family Background	
Black	-0.026***	Mother < Bachelor's	0.002
	(0.009)		(0.007)
Hispanic	-0.005	Mother PhD, JD, MD	-0.015
	(0.009)		(0.009)
Asian	-0.051***	Father < Bachelor's	0.008
	(0.008)		(0.009)
Other Race	-0.037***	Father PhD, JD, MD	-0.021***
	(0.013)		(0.007)
Female	0.027***	Income < $50,000	-0.03***
	(0.007)		(0.009)
Legacy	0.000	Income $50,000 - 100,000	-0.014*
	(0.008)		(0.008)
Private HS	0.027***	Income > $200,000	0.000
	(0.008)		(0.008)
Admissions Scores		Semester	0.056***
SAT x 100	-0.008**		(0.001)
	(0.003)	Spring	0.009
Achievement	-0.022***		(0.007)
	(0.004)	Ever Greek	-0.013
Curriculum	-0.044***		(0.012)
	(0.005)	Greek in Semester	0.033**
Essay	0.011***		(0.016)
	(0.006)	Greek in Semester * Spring	-0.009
Personal Qualities	-0.007		(0.016)
	(0.005)	Greek Ever * Female	0.013
Letters of Recommend.	-0.006		(0.016)
	(0.006)	Greek in Semester * Female	0.002
			(0.021)
		Greek in Semester * Female * Spring	0.018
			(0.022)
		Constant	0.185***
			(0.049)
R^2	.281		
Observations	7175		

Note: *p<.1, **p<.05, ***p<.01

women have higher grades than men and experience a lower decrease in grades via Greek affiliation, yet they select into easier courses to the same degree as Greek men. This shows that, at least for Greek women, even if easier courses are selected, this selection is not necessarily motivated by a desire to affect their GPAs. Instead, they may have majors or interests in easier fields. In general, one limitation of this methodology is that while the Greek ever (G_E) variable controls for selection bias (i.e. G_E would capture if students who go Greek are disproportionately likely to have interests in and subsequently take courses in easier fields) it may be the case that joining a Greek organization encourages students to develop interests in fields that tend to grade more easily. For example, if a Greek student becomes more comfortable in social situations as a result of their affiliation, they may become more comfortable with the idea of acting, and thus more likely to take a Theater Studies class, which tend to be graded more easily. This is quite a different effect from the alternative possibility that joining a Greek organization encourages students to seek out easier courses to attain higher grades, or worse, to purposefully attempt to obscure the negative impact on grades that affiliating causes.

Future Work

While this work provides good evidence that Greek students' grades are negatively impacted and that they choose easier courses as a result of their affiliation, it does not, as is addressed somewhat in the previous paragraph, allow us to understand why these effects are occurring, which is necessary to making effective policy recommendations about the nature of Greek life on college campuses. It would be impossible to understand the full range of effects that going Greek may cause, and the full range of reasons why students may choose a given course, but the possible mechanisms behind the results of this paper can be hinted at by determining what other variables in the data may aggravate or mitigate either of the effects reported.

Some methodological changes, which would require additional data collection, could also refine this work. There exists some variation between the nature of different fraternities and sororities in a variety of dimensions. Looking at these effects on a chapter by chapter basis may be more informative as to their nature. Similarly, at Duke, Selective Living Groups are a type of student group similar to Greek organizations. These groups are typically co-ed, do not have national organizations, and have very different cultures from Greek organizations, but still assemble large groups of undergraduates to live and socialize together. Additional analysis would include these types of groups. Lastly, both grades and course selection are a function of professor, so additional analysis could benefit by including professor fixed effects.

Conclusion

In this paper, we attempt to determine the impact of Greek affiliation on GPA and course selection. We find that, for Greek men, joining a Greek organization is associated with a .07 point decrease in grades attained, while for women there is an increase of .02 points in the fall semester and a decrease of .06 points in the spring semester. We also find that joining a Greek organization is associated with a decrease in the difficulty of selected courses, such that Greek students select courses that grade .03 points higher on average.

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Data Appendix

Extended methodology for creation of G_E and G_S variables

The dataset includes 4 related variables: one from each of the 1st, 2nd, and 4th year surveys, that asked if students were members any of the following campus organizations, one of which was a fraternity or sorority, and a fourth administrative variable that indicates if Duke's administration was aware that the student was a member of a Greek organization at any point in their undergraduate career, though the origin of that variable is unknown. G_E equals 1 if any of these variables are equal to 1. The three survey variables, however, did not effectively record Greek affiliation so generating the G_S variable required significant assumptions. In the surveys, participants could only check a box indicating that they were a member of a given group. As a result, a checked box was recorded as a 1 and an unchecked box as a 0, but if no boxes were checked for any of the groups, then a null value was recorded for all groups, assuming that the participant had abstained from the question, rather than assuming the participant had intended to indicate that they were not a member of any of the groups. Likewise, if a participant chose solely to abstain from indicating their Greek affiliation, or lack thereof, a 0 would be recorded, rather than the more accurate null value. Thus, while a 1 definitely indicates that a participant was a member of the group in that semester, a 0 or missing value may both indicate either that the subject was not a member of any group or that the subject abstained from the question, though it is more likely that a 0 indicates not being a member and a missing value indicates abstention.

First, we attempt to determine what would be the true answer for whether or not they were in a Greek organization for each of the three surveys, the methodology for which is depicted in Figure A1. Each of the 8 possible combinations of being

Greek affiliated or not for each of the three surveys was ranked by the number of observations.[2] Then, if a participant had a missing value for any of the survey responses, we attempted to impute that value by comparing them to observations with no missing responses. From the set of 8 possible combinations, any that had values contradicting non-missing values in the observation being imputed were removed. For example if a participant has a 1 for Year 1, a missing value for Year 2,

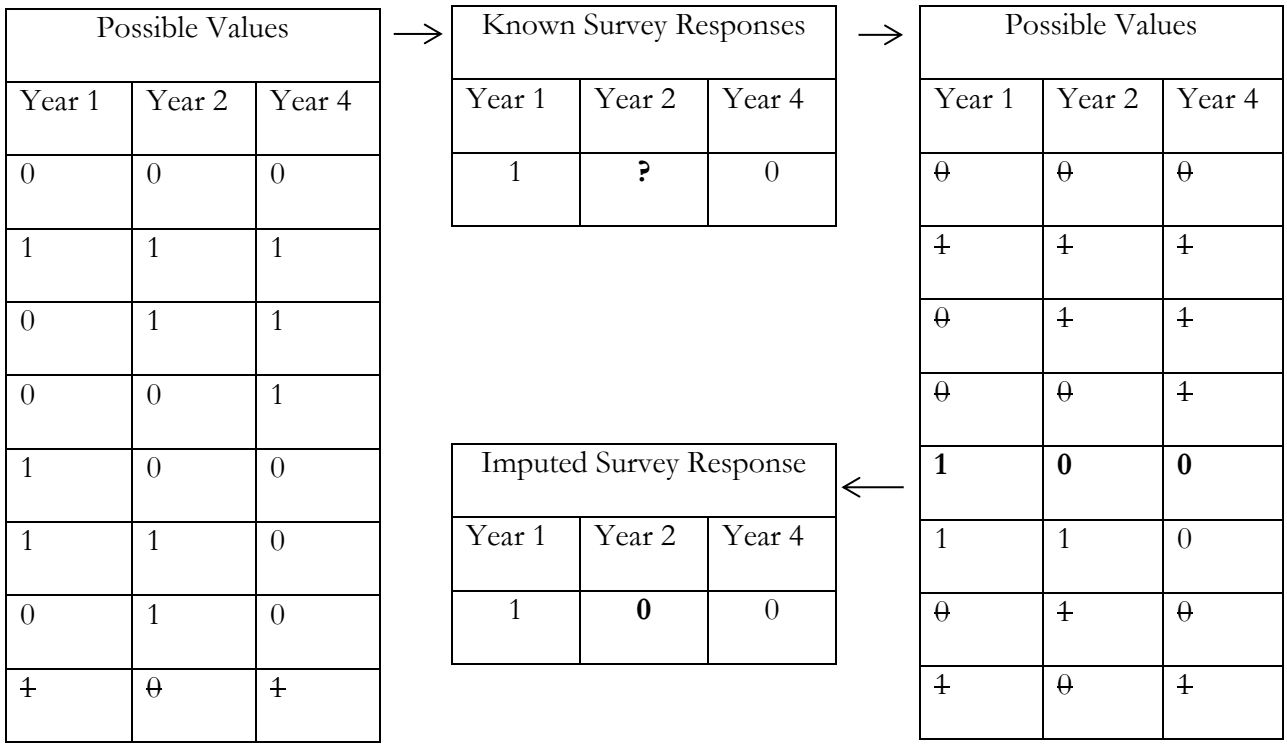

Figure A1. Imputing survey response values. This figure is intended to illustrate how values were imputed. First all 8 combinations of possible responses are ranked by number of observation, with the exception of the last, as explained in endnote 2. Then any combinations of responses not consistent with the non-missing survey values are eliminated. Of those remaining, the most common combination is selected and the missing value imputed.

[2] The combination where (Year 1, Year 2, Year 4) = (1,0,1) was removed from this set of 8 because it is not particularly plausible given that it requires that a person would have had to join a group, disaffiliate, and then join another group.

and a 0 for Year 4, then the set of combinations that may represent the true values is reduced to (Year 1, Year 2, Year 4) = (1,0,0) or (1,1,0). Since the former is more common in the dataset, a 0 is imputed for the Year 2 value. However, if the administrative Greek variable indicates that they were a member of a Greek organization, then never being in a Greek organization was ruled out as a possible true response and any participant with three 0s had them replaced with three 1s.

Once each observation had one of 7 plausible sets of 3 responses assigned, they were altered again to eliminate the impact of disaffiliation (i.e. leaving the Greek organization) by bucketing into four groups, those who never reported Greek membership (Year 1, Year 2, Year 4) = (0,0,0); reported it first in their freshman year (1,1,1), (1,1,0), or (1,0,0); reporting it first in their sophomore year (0,1,1) or (0,1,0); or reported it first in the senior year (0,0,1). Those in the second bucket were assumed to have entered during Freshman Spring Rush, those in the third were assumed to have entered during Sophomore Spring Rush, and those in the last, which is an uncommon condition, were assumed to have entered halfway between filling out the latter two surveys, in their junior spring. For the first model, G_S equals 1 for any course take during a semester in which the student was a member of a Greek organization, while for the second model, G_S equals 1 for any course selected during a semester in which the student was a member of a Greek organization, since courses are selected the semester before they are taken.