

Athletics and Alumni Giving

Evidence From a Highly Selective Liberal Arts College

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Using data on annual giving (between 1990 and 2004) for more than 22,000 active alumni from a highly selective liberal arts college, the authors employ a probit framework to analyze the likelihood of giving and a tobit framework to analyze the determinants of alumni generosity. Both the micro-level analysis and the statistical methodology allow the authors to test for differential impacts (by gender, age, or undergraduate involvement) of sports participation or a winning season on the propensity to give as well as on the generosity of alumni contributions. The results indicate that athletes are more likely to give and that they are more generous than their nonathlete counterparts, especially younger alumni who participated in one of the college's historically most successful high-profile sports. A winning season in this particular sports program also leads to greater alumni giving and more generous gifts.

Keywords: *charitable giving; alumni giving; college athletics*

There is no shortage of controversy surrounding the role of intercollegiate sports in academia. In fact, much recent discussion has been fueled by the controversial publication of *The Game of Life: College Sports and Educational Values* by Shulman and Bowen (2001) and the follow-up book *Reclaiming the Game: College Sports and Educational Values* by Bowen and Levin (2003). Using data from more than 30 of the nation's most selective institutions, the authors derail many of the usual justifications for college athletic programs. For example, they show that athletes are not more likely to assume leadership roles after graduation. Nor does athletic recruiting strengthen the socioeconomic or racial diversity among the student body. Last, and most relevant to this article, the authors find that although older generations of athletes are more generous than their nonathlete counterparts, more recent athlete cohorts are actually less financially committed to their alma mater. The publication of these works has led many colleges and universities to rethink both their athletic recruiting policies and the emphasis placed on their athletic programs.

Despite the great publicity generated by these recent studies and their impact on the academic community, the jury is still out on the link between sports and alumni giving. Are former athletes more generous givers? A common belief is that athletes develop stronger ties with their alma mater than nonathletes and thus are more likely to be generous givers. They may also receive additional donation requests from former and/or current team members, which may increase their likelihood of giving or their level of generosity. Although only a handful of studies (of mostly Division I-A schools) have included sports participation as a covariate in micro-level analyses of giving behavior, all have found a positive relationship between intercollegiate sports participation and subsequent giving (e.g., Clotfelter, 2003; Monks, 2003; Wunnava & Lauze, 2001). We contribute to the debate by analyzing alumni giving at one of the nation's most elite liberal arts institutions, Middlebury College, a Division III school. We use data on more than 22,000 alumni for the years 1990-2004. This micro-level analysis allows us to test for differential impacts of sports participation or a winning season on alumni giving, something that previous studies have not done. In particular, we analyze the giving behavior of hockey and football players (i.e., high-profile sports at Middlebury) separately from other sports participants. Furthermore, we include measures of participation in several other undergraduate activities to test the hypothesis that sports involvement leads to greater attachment to one's alma mater than involvement in other activities. We test for gender differentials in the impact of sports on subsequent giving (i.e., "Do male athletes give more than female athletes?"). Last, we test the Shulman and Bowen (2001) result that more recent athletes are less generous (relative to non-athletes) than their earlier counterparts.

Data and Method

Middlebury is a liberal arts college with an enrollment of about 2,400 undergraduate students. Most students were in the top 10% of their high school class with SAT I/II scores that range from 720 to 760. Although the college is best known for its language study, the largest majors in recent years, by number of graduates, have been economics, English, and psychology. Before graduation, students must complete two physical education credits. One or both may be earned from participation on a varsity or junior varsity intercollegiate team (see www.middlebury.edu/athletics/ for records on each team). There are 28 varsity sports (15 of which are women's sports), 5 club sports (rugby, crew, water polo, men's squash, and cricket), as well as certification, conditioning, and dance courses for physical education credit.

An ad hoc committee on the future of athletics at the college (Middlebury College, 2002) noted some differences between athletes and the rest of the student body. Roughly about a third of all college students participate in intercollegiate athletics at some point during their 4 years. For students enrolled in the fall of 1995, recruited

athletes (applicants for admission whose name appeared on a coach's list sent to the admissions office with a recommendation that the student be admitted) had combined SATs that averaged about 100 points lower than other students. Athletes come from families with higher incomes than those of other students. Approximately 59% of athletes (compared with 49% of nonathletes) were from families with incomes more than \$100,000. The average grade point average (GPA) was 3.29, whereas the average GPA for student-athletes was 3.05. The GPA gap was greater for men than for women and it was largest for athletes in the high-profile sports (men's ice hockey and football). This 2002 report also noted a remarkable consistency of the data across colleges (such as Middlebury) that are members of the New England Small College Athletic Conference (NESCAC).

We obtained data on annual giving (between 1990 and 2004) for 22,641 active alumni (for whom a mailing address is known or about 95% of the alumni pool) from the Middlebury College Development Office. In addition to total gifts to Middlebury College, each record includes information on many personal characteristics, such as the graduate's class year, gender, marital status, sector of employment, as well as undergraduate major, financial aid status, and college activity involvement. These data are representative of many other private baccalaureate institutions (see Table 1 for summary statistics, reported separately for athletes and nonathletes).

We collected information on the winning percentage for the men's ice hockey and football teams (high-profile teams at Middlebury) and identified the years in which these teams won championship titles. In 1995, the men's ice hockey team made their first appearance in a National Collegiate Athletic Association (NCAA) postseason tournament after a ban on NCAA play was lifted in 1993-1994 by NESCAC. (Hence, a championship title could either be an NESCAC or an NCAA title.) Over the 15-year period analyzed, the hockey team had an average win-loss record of .832 (varying between .500 and .929) and the football team had an average winning percentage of .533 (varying between .250 and .875). The hockey and football teams won seven (NCAA) and two (NESCAC) championship titles, respectively. Although game attendance is high for both sports, the men's hockey team has historically been more successful and has earned a more faithful following among alumni than the football team.

The first part of the empirical analysis uses a probit framework to analyze the likelihood that an alumnus donates to Middlebury College in a given year. The second part of the empirical analysis uses a tobit framework to analyze the determinants of alumni generosity; more specifically, we use as our dependent variable the log of total (real) gift amount by individual i in year t . The tobit framework allows us to account for the left-censoring and mass point at \$0 (e.g., only 47% of the active alumni donated in 2004). Table 2 shows that between 1990 and 2004 the percentage of active alumni who donated ranged from a low of .337 (in 1991) to a high of .474 (in 2004). Over the same 15-year period, the average donation varied between \$73.78 (in 1991) and \$823.42 (in 2004).

Table 1
Summary Statistics, Athletes and Nonathletes

Variable	Athletes (<i>n</i> = 7,316)		Nonathletes (<i>n</i> = 16,025)	
	Mean	<i>SD</i>	Mean	<i>SD</i>
Percentage who donated	.372	.483	.398	.489
Level of donation	431	11,278	204	4,267
Gender (Male = 1)	.613	.487	.450	.497
Age	19.73	16.59	26.66	17.20
Married	.519	.500	.540	.498
Alumni close relative	.246	.431	.232	.422
Median income	63,139	26,910	60,307	25,294
Business owner	.057	.233	.051	.220
Lives <250 miles	.549	.498	.525	.499
Social house	.357	.479	.239	.426
Affinity group	.059	.236	.080	.271
Academic club	.081	.272	.124	.330
Undergraduate fundraising	.002	.050	.003	.056
Arts organization	.054	.227	.077	.266
Campus leadership group	.106	.308	.066	.249
Other activities	.330	.470	.283	.451
Economics major	.143	.350	.080	.272
Nongraduate	.044	.205	.099	.299

Note: *SD* = standard deviation.

In developing an empirical model to explain either propensity to donate or level of generosity, it is important to include demographic characteristics of the donor because those attributes may affect either the ability to give or the desire to give. For example, we include a dummy variable for *gender* of the alumnus to capture any differences in earnings between men and women as well as potential gender differences in the utility gained from charitable giving. Most previous studies have found that either women are more generous givers (e.g., Belfield & Beney, 2000; Bruggink & Siddiqui, 1995; Eckel & Grossman, 1998) or that gender has no impact on giving behavior (e.g., Clotfelter, 2003; Marr, Mullin, & Siegfried, 2005; Monks, 2003).

We also control for years since graduation (hereafter age) and age-squared to capture the suspected nonlinearity of the age-earnings profile. We include marital status because several previous studies (e.g., Belfield & Beney, 2000; Bruggink & Siddiqui, 1995; Clotfelter, 2003; Monks, 2003) have found a negative relationship between marriage and giving behavior, most likely due to the presence of competing alma maters vying for charitable gifts. We also include a dummy variable to indicate the presence of a *close relative* who is also an alumnus (e.g., parent, spouse, sibling, or child) because such individuals are likely to have stronger ties to the college. Interestingly, Clotfelter (2003) and Wunnava and Lauze (2001) find

Table 2
Donation Rates and Averages Among Active Alumni, 1990-2004

Year	Donation Rate (%)	Average Donation (\$)
1990	34.1	149
1991	33.7	74
1992	34.3	102
1993	36.2	126
1994	38.5	158
1995	38.2	147
1996	38.3	205
1997	39.2	321
1998	38.7	378
1999	39.5	338
2000	40.1	644
2001	41.6	597
2002	44.8	394
2003	41.7	504
2004	47.4	823

that alumni with family connections are among the most likely to donate to their alma mater, whereas Belfield and Beney (2000) find that alumni who married other alumni are less generous donors.

Although household income is a likely predictor of one's ability to give, the college's Development Office does not collect such information. However, to proxy giving potential, we include census data for each alumnus on the *median income* in their ZIP code. We also include a set of *occupational sector* dummies to capture differences in income potential by occupation; that is, an alumnus working in the banking and financial sector is likely to earn more money than an alumnus employed in either education or in nonprofit services. We include a dummy that indicates whether the alumnus is a *business owner*.

To the extent that alumni who live closer are more likely to return to campus for activities and to retain stronger ties to the college, we include a dummy variable that indicates that the alumnus *lives less than 250 miles* from campus.

Our models of charitable giving must also include information about the donor's undergraduate experience. The quality of social interactions can profoundly shape students' satisfaction with their alma maters and strengthen their ties to the institution. We include indicators (created by the Development Office) for undergraduate participation in a social house (fraternity or sorority), an affinity group (Gay/Lesbian Alliance, the African American Alliance, the International Student Organization, etc.), an academic club or organization (e.g., student investment committee), an arts club or organization (e.g., choirs, bands, theater, and dance groups), a campus

leadership group (e.g., student government, residential life assistant, social house council), a college fundraising campaign (e.g., phone-a-thon caller, senior class gift committee member), a sports team or other less easily aggregated activity groups (e.g., chess club). In some specifications, we also breakdown sports participation into ice hockey, football, and other to see if athletes in high-profile sports give differently than athletes in other sports or nonathletes. We expect higher giving from alumni who participated in these extracurricular activities (compared with alumni with no involvement); however, we have no expectations about the groups most likely to generate the strongest ties to the college.

We also indicate whether the alumnus is a graduate because the database included alumni who attended, but never graduated, from Middlebury College. We expect nongraduates to have weaker ties to the institution and to be less generous givers. Economics majors may have greater job opportunities or higher income-earning potential so we include a dummy variable indicating the alumnus graduated with an undergraduate degree in *economics*.

We include a dummy variable that indicates whether the alumnus received financial aid in the form of a *loan* or a *grant* from the college. On the one hand, former aid recipients may feel gratitude for the aid received and be more generous givers. On the other hand, former aid recipients may have lower wealth and/or may still be repaying loans to the college and therefore be less generous givers; for this latter reason, we expect loan recipients to be less generous than grant recipients. Clotfelter (2003) and Marr et al. (2005) find that need-based aid recipients tend to give less, whereas Marr et al. (2005) find that grant recipients tend to give more.

Our empirical models also include the annual percentage change in the Dow Jones Industrial Average to control for macroeconomic conditions that might affect annual giving for all donors. We also separately identify campaign years to control for the additional college resources devoted to public fundraising.

Last, but most relevant here, we rely on two separate measures of annual athletic success of the men's hockey and football teams—a dummy that indicates whether the team won a *league or national title* and the team's *winning percentage* (hereafter WINPCT) for each year.

Why might athletic success be associated with alumni giving? One hypothesis is that a winning season in a high-profile sport generates publicity for the institution. Such publicity may lead to a heightened sense of school spirit or warm glow and therefore greater alumni contributions. On the other hand, such publicity may lead alumni to question their alma mater's commitment to its academic mission and actually lower alumni gifts. Another possibility is that winning seasons simply encourage athletic event attendance, which in turn provides development officers with expanded opportunities to solicit contributions. A third possibility is that donor perks (such as preferred seating at athletic events) become more valuable in a winning season and therefore encourage greater gift giving when high-profile teams are successful (Turner, Meserve, & Bowen, 2001). In the words of Middlebury's Director of Athletic

Communications, “Nothing encourages giving more than a successful program, like men’s ice hockey. I would personally doubt we’d be in Kenyon Arena now had we not started winning NCAA titles” (five straight from 1994-1995 to 1998-1999 and three more from 2003-2004 to 2005-2006). The men’s ice hockey team thus received much more national exposure beginning in 1995, when they made their first appearance in the NCAA tournament after the aforementioned ban on NCAA play was lifted by NESCAC.

Unfortunately, the data are not a true panel in that several of the individual-level covariates are not known for each year but are only known for 2004; that is, we only know state and ZIP code (and thus median income by ZIP code and whether the alumnus lives less than 250 miles away), marital status, occupational sector, business ownership, and past reunion attendance as of 2004. We believe that many of these covariates are highly correlated over time (e.g., local median income in 2004 is likely to be highly correlated with local median income in 2000, and occupational sector is likely to remain stable over time for the majority of alumni), so we include these covariates in all models. However, the results presented below are robust to the elimination of the *2004-only* covariates.¹ A random effects specification is also used to adjust for unobserved individual heterogeneity that might be correlated with giving behavior.

Results

Sports Participation

Table 3 presents the marginal effects from a probit estimation of the likelihood that an alumnus donates to the college each year (1990-2004). Focusing first on Column (1), we see that former athletes are 22% more likely to contribute than their nonathlete counterparts. However, the sports program does not produce the most generous donors; those who participated in campus leadership activities and undergraduate fundraising campaigns were significantly more likely to give than former athletes ($p \leq .01$). That said, former members of social houses and affinity groups were significantly less likely to give than former athletes ($p < .01$).

The interaction terms in Table 3, Column (2), allow us to test whether former athletes have different giving propensities based on their gender and age (proxied by the number of years since graduation). The results suggest that male and female athletes have the same propensities to give; that is, the interaction between sports participation and male is insignificant. However, the results suggest that age does play a role in the propensity of a former athlete to donate. In fact, contrary to Shulman and Bowen’s (2001) finding, we find that older athletes are significantly less likely to give than younger athletes; a former athlete in his or her 50s is about 15% less likely to give than a former athlete in his or her 20s.

Table 3
The Random Effects Probit Model, Sports Participation

Dependent Variable: Donation Likelihood			
Selected Independent Variables ^a	(1)	(2)	(3)
Gender (Male = 1)	– .3101 [.0207] ^b	– .2998 [.0240]	– .3029 [.0209]
Age	.0211 [.0007]	.0226 [.0008]	.0212 [.0007]
Married	.4794 [.0204]	.4855 [.0205]	.4796 [.0204]
Alumni close relative	.3026 [.0224]	.3047 [.0224]	.3011 [.0224]
Median income (000s)	.0041 [.0004]	.0041 [.0004]	.0041 [.0004]
Economics major	.1711 [.0329]	.1734 [.0329]	.1730 [.0329]
Business owner	– .1151 [.0431]	– <i>.1087</i> [.0431]	– .1143 [.0431]
Lives <250 miles	.1182 [.0191]	.1179 [.0191]	.1194 [.0191]
Social house	.0670 [.0243]	.0742 [.0244]	.0679 [.0244]
Affinity group	– .2900 [.0394]	– .2809 [.0394]	– .2896 [.0394]
Academic club	.2654 [.0307]	.2675 [.0307]	.2638 [.0307]
Undergraduate fundraising	.9446 [.1970]	.9518 [.1971]	.9411 [.1970]
Arts organization	.2447 [.0382]	.2534 [.0383]	.2447 [.0382]
Campus leadership group	.3440 [.0373]	.3426 [.0373]	.3437 [.0373]
Other activities	.2230 [.0222]	.2231 [.0222]	.2222 [.0222]
Nongraduate	– .9650 [.0378]	– .9660 [.0378]	– .9638 [.0378]
DJIA	– .0013 [.0002]	– .0013 [.0002]	– .0013 [.0002]
Campaign year	– .0281 [.0065]	– .0280 [.0065]	– .0282 [.0065]
Sports	.2236 [.0215]	.3452 [.0409]	
Sports_Gender		–0.086 [.0423]	
Sports_Age		– .0052 [.0013]	
Hockey			.2358 [.0545]
Football			.0902 [.0463]
Other sports			.2284 [.0228]
Observations	282,432	282,432	282,432
Wald chi-squared	4,963 (<i>p</i> < .0001)	4,978 (<i>p</i> < .0001)	4,970 (<i>p</i> < .0001)

Note: DJIA = Dow Jones Industrial Average.

a. The following variables were included but not reported for the sake of brevity: the occupational sector dummies (arts and entertainment, banking and financial services, communications/media, computers/technology, consulting, education, environment, government/public policy, health care, international languages, law, nonprofit, professional services, and sales/marketing) and the two dummy variables that indicate whether the alumnus received financial aid in the form of a loan or a grant from the college (among those for whom financial aid data are available).

b. Numbers in brackets are standard errors and numbers in boldface (italics) are significant at better than the .01 (.05) level.

Column (3) in Table 3 differentiates between hockey players, football players, and other athletes. Interestingly, football players are significantly less generous than either hockey players or other former athletes (*p* < .05). More specifically, hockey and other non-football athletes are about 23% more likely to give than

Table 4
The Random Effects Tobit Model, Sports Participation

Dependent Variable: ln(Annual Gift Amount)			
Selected Independent Variables ^a	(1)	(2)	(3)
Gender (Male = 1)	- .2135 [.0148] ^b	- .2107 [.0167]	- .2104 [.0149]
Age	.0223 [.0006]	.0227 [.0006]	.0224 [.0006]
Married	.4377 [.0136]	.4393 [.0137]	.4377 [.0136]
Alumni close relative	.3004 [.0173]	.3009 [.0173]	.2995 [.0173]
Median income (000s)	.0061 [.0003]	.0061 [.0003]	.0061 [.0003]
Economics major	.1889 [.0255]	.1897 [.0255]	.1903 [.0255]
Business owner	.0031 [.0293]	.0053 [.0294]	.0036 [.0293]
Lives <250 miles	.0716 [.0136]	.0715 [.0135]	.0722 [.0136]
Social house	.0921 [.0177]	.0942 [.0178]	.0921 [.0178]
Affinity group	- .2173 [.0255]	- .2153 [.0255]	- .2167 [.0255]
Academic club	.2361 [.0249]	.2366 [.0249]	.2353 [.0249]
Undergraduate fundraising	.7368 [.2246]	.7380 [.2247]	.7345 [.2245]
Arts organization	.1703 [.0314]	.1724 [.0314]	.1704 [.0314]
Campus leadership group	.3010 [.0330]	.2998 [.0329]	.3006 [.0330]
Other activities	.1585 [.0169]	.1584 [.0169]	.1585 [.0169]
Nongraduate	- .6716 [.0165]	- .6724 [.0165]	- .6710 [.0165]
DJIA	- .0045 [.0002]	- .0045 [.0002]	- .0045 [.0002]
Campaign year	.0751 [.0054]	.0751 [.0054]	.0751 [.0054]
Sports	.2018 [.0164]	.2424 [.0333]	
Sports_Gender		-.0043 [.0315]	
Sports_Age		-.0016 [.0010]	
Hockey			.2080 [.0440]
Football			.1260 [.0345]
Other sports			.2037 [.0177]
Observations	282,432	282,432	282,432
Wald chi-squared	9,902 ($p < .0001$)	9,942 ($p < .0001$)	9,904 ($p < .0001$)

Note: DJIA = Dow Jones Industrial Average.

a. See Footnote a, Table 3.

b. See Footnote b, Table 3.

those who did not play a sport, whereas football players are only about 9% more likely to give than nonathletes.

Table 4 focuses on giving generosity, displaying the marginal effects from tobit estimates of the determinants of ln(annual gift amount) for the years 1990-2004.² The results in Column (1) indicate that former athletes give about 20% more than nonathletes, although again, athletes are not the most generous donors. Former academic campus leaders and undergraduate fundraisers are significantly more generous than former athletes ($p = .01$), whereas former affinity group members and social house members give significantly less than former athletes ($p < .01$). The interaction terms in Column (2) again suggest that although gender plays no

role in the relative generosity of former athletes, age marginally does ($p = .11$). Specifically, the relative generosity of former athletes declines with age, to the tune of almost 2% for every decade since graduation. Last, Column (3) looks at the relative generosity of hockey players, football players, and other sports participants, separately. Former hockey players and other non-football players give about 20% more than nonathletes, whereas football players give about 13% more than those who did not participate in a sport.

Winning Seasons

Table 5 presents the marginal effects from a probit estimation of the likelihood that an alumnus donates to the college. Here, however, the covariates of interest are the measures of the annual success of both the men's ice hockey and football teams. In Column (1), we include dummy variables that indicate whether the hockey and football teams won a league or national title that year. In Column (2), we instead include the winning percentage of each team as an alternative measure of athletic success. Interestingly, whether one uses league title or winning percentage, football success translates into lower propensities to give; in years in which the football team wins a title, alumni are 7% less likely to give, and a 10-point increase in the winning percentage is associated with a 1% reduction in probability of giving. This result is similar to Turner et al. (2001), who also found a negative relationship between football success and giving behavior. Hockey success, when measured by a national or league championship title, is associated with a 7% higher likelihood of giving.

The interactions in Columns (3) and (4) of Table 5 allow us to test for differential impacts of athletic success by gender, age, sports participation, and distance to alma mater. In other words, whose giving is most influenced by a successful hockey or football season? None of the interaction terms are significant in the model, which relies on championship titles to proxy athletic success (Column 3), but we do see a differential impact of winning percentage by age (Column 4). In particular, the impact of a winning hockey season has the greatest giving impact on younger alumni, whereas a winning football season has the greatest giving impact on older alumni. We also find that alumni who live within 250 miles of campus are marginally more likely to give in years when the hockey team has a winning season ($p < .10$).

Table 6 repeats the above analysis in the tobit framework using $\ln(\text{annual gift amount})$ as the dependent variable. The results are not dramatically different. As Columns (1) and (2) indicate, average giving falls about 12% in years when the football team wins a championship or about .4% for every 10-point increase in the team's winning percentage. On the other hand, giving levels rise by about 8% in years when the hockey team wins a championship or about 4% for every 10 percentage point increase in the team's winning percentage. Again, the results in Columns (3) and (4) confirm that younger alumni are most affected by hockey success and older

Table 5
The Random Effects Probit Model, Winning Seasons

Dependent Variable: Donation Likelihood				
Selected Independent Variables ^a	(1)	(2)	(3)	(4)
Gender (Male = 1)	- .3027 [.0209] ^b	- .3030 [.0209]	- .2965 [.0222]	- .2849 [.0554]
Age	.0213 [.0007]	.0212 [.0007]	.0214 [.0008]	.0226 [.0018]
Married	.4821 [.0204]	.4799 [.0204]	.4821 [.0204]	.4810 [.0204]
Alumni close relative	.3013 [.0224]	.3011 [.0224]	.3014 [.0224]	.3013 [.0224]
Median income (000s)	.0041 [.0004]	.0041 [.0004]	.0041 [.0004]	.0041 [.0004]
Economics major	.1730 [.0329]	.1730 [.0329]	.1730 [.0329]	.1726 [.0329]
Business owner	- .1143 [.0431]	- .1143 [.0431]	- .1142 [.0431]	- .1142 [.0431]
Lives <250 miles	.1191 [.0191]	.1194 [.0191]	.1265 [.0205]	.0184 [.0541]
Social house	.0666 [.0244]	.0678 [.0244]	.0666 [.0244]	.0669 [.0244]
Affinity group	- .2898 [.0394]	- .2895 [.0394]	- .2898 [.0394]	- .2890 [.0394]
Academic club	.2637 [.0307]	.2639 [.0307]	.2638 [.0307]	.2641 [.0307]
Undergraduate fundraising	.9329 [.1971]	.9400 [.1971]	.9328 [.1971]	.9362 [.1971]
Arts organization	.2430 [.0382]	.2448 [.0382]	.2429 [.0382]	.2450 [.0382]
Campus leadership group	.3433 [.0373]	.3440 [.0373]	.3430 [.0373]	.3440 [.0373]
Other activities	.2200 [.0222]	.2200 [.0222]	.2197 [.0222]	.2210 [.0222]
Nongraduate	- .9650 [.0378]	- .9641 [.0378]	- .9650 [.0378]	- .9642 [.0378]
DJIA	- .0032 [.0003]	- .0018 [.0002]	- .0032 [.0003]	- .0018 [.0002]
Campaign year	- .0383 [.0071]	- .0176 [.0069]	- .0374 [.0071]	- .0162 [.0069]
Hockey	.2359 [.0546]	.2359 [.0545]	.2332 [.0549]	.1664 [.0670]
Football	.0898 [.0463]	.0903 [.0464]	.0870 [.0468]	.0182 [.0615]
Other sports	.2277 [.0228]	.2284 [.0228]	.2245 [.0240]	.1449 [.0519]
Good hockey	.0704 [.0088]		.0905 [.0178]	
Good football	- .0708 [.0088]		- .0857 [.0261]	
Hockey WINPCT		.0054 [.0292]		.0744 [.0757]
Football WINPCT		- .1367 [.0180]		- .3032 [.0464]
Good hockey_Male			-.0107 [.0133]	
Good hockey_Age			-.0003 [.0004]	
Good hockey_Sports			.0063 [.0147]	
Less than 250 miles_Good hockey			-.0141 [.0131]	
Good football_Male			-.0096 [.0199]	
Good football_Age			.0008 [.0006]	
Good football_Sports			.0039 [.0220]	
Less than 250 miles_Good football			-.0075 [.0195]	
Hockey WINPCT_Male				-.0490 [.0570]
Hockey WINPCT_Age				-.0042 [.0019]
Hockey WINPCT_Sports				.0810 [.0558]

(continued)

Table 5 (continued)

Dependent Variable: Donation Likelihood				
Selected Independent Variables ^a	(1)	(2)	(3)	(4)
Less than 250 miles_Hockey WINPCT				.0947 [.0562]
Football WINPCT_Male				.0389 [.0346]
Football WINPCT_Age				.0038 [.0011]
Football WINPCT_Sports				.0433 [.0374]
Less than 250 miles_Football WINPCT				.0472 [.0341]
Observations	282,432	282,432	282,432	282,432
Wald chi-squared	5,120 ($p < .0001$)	5,024 ($p < .0001$)	5,126 ($p < .0001$)	5,053 ($p < .0001$)

Note: DJIA = Dow Jones Industrial Average.

a. See Footnote a, Table 3.

b. See Footnote b, Table 3.

alumni are most affected by football success. Also, alumni living closer to campus tend to be marginally more generous in years in which the hockey team has a winning season.

Other Determinants of Giving

The other determinants behave largely as predicted across all specifications. For example, males are about 30% less likely to give and to give about 20% fewer dollars than their female counterparts; this is consistent with the findings in several other studies (e.g., Belfield & Beney, 2000; Bruggink & Siddiqui, 1995; Eckel & Grossman, 1998). Older alumni are both more likely to give and to give more generously, reflective of their greater income potential. Married alumni are about 48% more likely to contribute to their alma mater and tend to give about 44% more than their single counterparts. Alumni with close alumni relatives are about 30% more likely to donate and contribute about 30% more than alumni without relatives with ties to the institution. As expected, those who live in communities with higher median incomes are both more likely donors and more generous givers.

Conclusion

The empirical results for the college suggest that former athletes are more likely to contribute than their nonathlete counterparts. Surprisingly, we find that older alumni who were athletes as undergraduates are significantly less likely to give and

Table 6
The Random Effects Tobit Model, Winning Seasons

Dependent Variable: ln(Annual Gift Amount)				
Selected Independent Variables ^a	(1)	(2)	(3)	(4)
Gender (Male = 1)	- .2096 [.0149] ^b	- .2096 [.0149]	- .2019 [.0161]	- .1602 [.0448]
Age	.0226 [.0006]	.0226 [.0006]	.0221 [.0006]	.0285 [.0015]
Married	.4399 [.0136]	.4406 [.0136]	.4405 [.0136]	.4423 [.0136]
Alumni close relative	.2993 [.0172]	.2994 [.0172]	.2993 [.0172]	.2994 [.0172]
Median income (000s)	.0060 [.0000]	.0061 [.0000]	.0061 [.0000]	.0061 [.0000]
Economics major	.1903 [.0255]	.1904 [.0255]	.1902 [.0255]	.1900 [.0254]
Business owner	.0036 [.0293]	.0037 [.0293]	.0037 [.0293]	.0037 [.0293]
Lives <250 miles	.0717 [.0135]	.0715 [.0135]	.0784 [.0149]	-.0303 [.0439]
Social house	.0902 [.0177]	.0899 [.0177]	.0899 [.0177]	.0884 [.0177]
Affinity group	- .2167 [.0254]	- .2166 [.0254]	- .2165 [.0254]	- .2164 [.0254]
Academic club	.2344 [.0249]	.2342 [.0249]	.2341 [.0249]	.2341 [.0248]
Undergraduate fundraising	.7182 [.2234]	.7163 [.2234]	.7149 [.2232]	.7066 [.2227]
Arts organization	.1680 [.0313]	.1683 [.0313]	.1678 [.0313]	.1676 [.0313]
Campus leadership group	.2995 [.0329]	.3001 [.0329]	.2995 [.0329]	.2992 [.0329]
Other activities	.1554 [.0169]	.1551 [.0169]	.1547 [.0169]	.1533 [.0169]
Nongraduate	- .6712 [.0165]	- .6712 [.0165]	- .6713 [.0165]	- .6713 [.0165]
DJIA	- .0070 [.0002]	- .0047 [.0002]	- .0071 [.0002]	- .0046 [.0002]
Campaign year	.0689 [.0059]	.0570 [.0057]	.0698 [.0059]	.0585 [.0057]
Hockey	.2079 [.0440]	.2078 [.0440]	.2093 [.0444]	.1406 [.0547]
Football	.1252 [.0345]	.1255 [.0345]	.1264 [.0351]	.0577 [.0480]
Other sports	.2024 [.0177]	.2024 [.0177]	.2037 [.0190]	.1236 [.0426]
Good hockey	.0811 [.0074]		.0848 [.0153]	
Good football	- .1241 [.0081]		- .1817 [.0209]	
Hockey WINPCT		.3840 [.0241]		.6267 [.0643]
Football WINPCT		- .0408 [.0149]		- .1645 [.0394]
Good hockey_Male			-.0141 [.0111]	
Good hockey_Age			.0004 [.0003]	
Good hockey_Sports			-.0022 [.0122]	
Less than 250 miles_Good hockey			-.0128 [.0109]	
Good football_Male			-.0082 [.0165]	
Good football_Age			.0022 [.0005]	
Good football_Sports			-.0042 [.0183]	
Less than 250 miles_Good football			-.0067 [.0163]	
Hockey WINPCT_Male				-.0811 [.0471]
Hockey WINPCT_Age				- .0089 [.0015]
Hockey WINPCT_Sports				.0687 [.0453]

(continued)

Table 6 (continued)

Dependent Variable: ln(Annual Gift Amount)				
Selected Independent Variables ^a	(1)	(2)	(3)	(4)
Less than 250 miles_Hockey WINPCT				.0977 [.0465]
Football WINPCT_Male				.0290 [.0287]
Football WINPCT_Age				.0024 [.0009]
Football WINPCT_Sports				.0453 [.0309]
Less than 250 miles_Football WINPCT				.0440 [.0282]
Observations	282,432	282,432	282,432	282,432
Wald chi-squared	10,405 ($p < .0001$)	10,213 ($p < .0001$)	10,432 ($p < .0001$)	10,286 ($p < .0001$)

Note: DJIA = Dow Jones Industrial Average.

a. See Footnote a, Table 3.

b. See Footnote b, Table 3.

marginally less generous than their younger counterparts. When we differentiate among several high-profile sports, we find that the football players are less generous than either hockey players or other former athletes; specifically, hockey and other non-football athletes are about 23% more likely to give than those who did not play a sport, whereas football players are only about 9% more likely to give than nonathletes. Although football players give about 13% more than those who did not participate in a sport, hockey players and other athletes can be expected to contribute about 20% more than otherwise similar nonathlete alumni.

A winning season for the men's ice hockey team with six NCAA national titles between 1995 (when the College's regional conference first lifted the ban on NCAA postseason play) and 2004 is associated with a significantly *higher* likelihood of and *more* generous giving, most notably among younger alumni and those who live closer to campus; a winning season for the football team is associated with a significantly *lower* likelihood of and *less* generous giving, an effect that is somewhat mitigated as alumni grow older.

There is evidence for Division I-A institutions that successful big-time football or basketball programs extend beyond current students to the institution's alumni and the donations they make. Whether successful high-profile sports programs lead to greater alumni giving at Division III institutions, however, remains an open question. The results presented here for one such institution provide compelling evidence that alumni who were former athletes will respond favorably to fundraising appeals, both in their propensity to give and in their generosity, especially younger alumni who participated in an historically successful sports program.

Notes

1. We also note that the panel is unbalanced in the sense that we have fewer observations for alumni graduating after 1990. However, the results reported here are robust to the exclusion of these recent alumni, thus we report the findings from the full sample.

2. The marginal effect of each covariate on the censored gift value is calculated by taking the exponential function of the product of the estimated coefficient and the probability of giving.

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