ABSTRACT

Chasing Flutie: A Closer Look Into the Impact of Collegiate Athletics on Admissions

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As the cost of maintaining a competitive athletic program continues to rise, many are questioning the true benefit of these programs. For some universities, athletic expenditures have increased at a higher rate than its academic expenditures. This study examines the impact of athletic success on enrollment measures. Using admissions and sports data for a group of 355 universities over a span of 10 years, the study revealed that athletic success plays a marginal role in influencing admission measures. The advertising effect of athletic success is most pronounced in an increase in application with 4.8% increase in applications in the year following a football conference title. Despite a larger applicant pool, the quality of applications, measured by standardized test scores, experiences little change. Additionally, athletic success encourages local students to remain in their home state, but it does little expand the reach of the university.

Chasing Flutie: A Closer Look Into the Impact of Collegiate Athletics on Admissions

by

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CHAPTER ONE

Introduction

It was a cold, rainy night in late November, and the clock was winding down in a close matchup between the University of Miami and Boston College. In the last 20 minutes of the game the Miami Hurricanes and the Boston College Eagles traded the lead six times. With six seconds left on the clock, the Eagles were down 45-41 on the 32-yard line. Despite pressure in the pocket, Doug Flutie managed to sneak away and throw a 64-yard pass that would change Boston College forever. Not only did Flutie's Hail Mary pass seal the fate of the game and solidify BC's Cotton Bowl appearance,[1] it put Boston College on the map for years to come. Two years following Flutie's historic game, Boston College saw a 30% increase in the number of applications. In the years to come, this phenomenon would come to be known as the "Flutie Effect."

This phenomenon has been seen at several other universities where athletic successes seem to act as "free" advertising for the university. One notable example lies in the 13th oldest university in the nation. Despite having three signers of the Declaration of Independence and three framers of the Constitution in its list of founders, the College of Charleston in the 1990's was a relatively unknown small public school in South Carolina.[2] Following a first-round upset of the University of Maryland in the 1997 NCAA basketball tournament, the College of Charleston saw a drastic increase in interest

[1] "BC Wins on Hail Mary" (2009).

[2] "A Brief History of the College."

in the university to the tune of 380 daily admission inquiries compared to only 80 prior to its tournament appearance. One cannot mention NCAA basketball without mentioning the Duke Blue Devils, whose presence in the tournament has become more of a tradition than an anomaly. Following two Final Four appearances in the 1970s and 1980s, applications at Duke increased by a staggering 15% after reaching the championship game in 1978 and an even greater 19% after reaching the Final Four again in 1986.

The perceived increase in applications attributed to athletic success has included expansion of geographic reach and academic quality. Following a Sweet Sixteen appearance in 1993, The George Washington University saw a 23% increase in number of applicants and attracted students from all 50 states into the freshman class for the very first time. Additionally, 76% of the 1994 freshman class graduated in the top 20% of their high school classes, compared to only 60% in 1993. After making an appearance in the Rose Bowl in 1995, Northwestern University saw a 30% increase in applications and reported that its average SAT scores increased by 19 points. Anecdotes such as these involving CofC, Duke, GWU, and Northwestern seem to indicate that athletic successes drive steady increases in not only the number of applications but also the reach and quality of the applicants.

However, success in athletics does not always yield these storied results. After two seasons of barely missing a bowl game with a 5-6 record, the University of Wisconsin turned its football program around with a conference championship and Rose Bowl appearance in 1993. Following this standout season, the university saw no change in the size of its applicant pool, in contrast to Boston College's double-digit increase.[3]

[3] "Winning One for the Admissions Office" (1997).

With the costs of maintaining a successful collegiate athletic program rising steadily, many are starting to rethink the value of these pricey programs. Not including athletic scholarships and maintenance fees, staffing for the programs alone costs the universities millions of dollars. In fact, Michigan football coach Jim Harbaugh made a reported $9 million for the 2016 season, a $2 million increase from the 2015 season.[4] An article published by *USA Today* reported that public Division I schools spent an estimated $71.3 billion on athletic programs over an eleven-year period. The combined spending of these universities is approximately equal to the aggregate GDP of both Serbia and Estonia.[5] Universities have begun to push this growing cost upon their students. Auburn University, known for its strong presence on the football field, has long charged a "student fee" used in part to support the athletic program. In 2006, this fee increased over 400%, from $36 to $192, but Auburn is not alone. The president at Texas A&M University proposed a student fee of $72 to be paid by all 50,000 students to help fund a $450 million football stadium renovation.[6]

With athletic program costs continually rising, some may wonder whether big-time athletics it is worth its cost. An NCAA study conducted revealed that profitable athletic programs remain the minority. In 2014, only 24 of 125 FBS schools were profitable, a slight increase from 20 profitable programs in 2013. Despite this slight increase, the number of profitable athletic programs has remained relatively stagnant in recent years.[7] For small, public schools with a student body around 10,000 students, total

[4] "Michigan's Jim Harbaugh leads college football coaches in salary" (2016).

[5] "Can college athletics continue to spend like this?" (2016).

[6] "Why students foot the bill for college sports, and how some are fighting back" (2015).

[7] "Athletic departments that make more than they spend still a minority" (2015).

costs of athletics per student can average around $4,400. Larger institutions have the benefit of spreading costs across a larger student body, but students at smaller universities pay a higher price to remain relevant.[8] Litan, Orszag, and Orszag (2003) found that athletic spending at the 100 largest universities increased by 4.5% from 1985 to 2001, while academic spending only increased by 2.7%. On its face, this finding seems contrary to the very purpose of an academic institution. However, many argue that externalities associated with the success of athletic programs provide a justification for the large amounts of money spent on what may merely be unprofitable entertainment.

In this study, I examine the correlation between collegiate athletic performance and enrollment measures, looking primarily at the quantity of applications and quality and reach of the enrollees. The purpose of this paper is to reveal if there might be some correlation between success on the court and success in admissions, a potential rationale for the exuberant amount of money spent on athletics by colleges each year. Using a panel data set consisting of all Division I basketball schools between 2003 and 2014, I examine the impact of prior year athletic success on current year enrollment measures. Overall, I find that athletic success is associated with some increase in the quantity of applicants, but that there is no consistent correlation with the quality of enrolled students or the geographic reach of the universities. Changes in the quantity of applications are mainly driven by changes in 16 to 19-year-old population and fluctuations in gross state product. The quantity of applications shows slight correlation with athletic performance, primarily in football success. Football conference championships help to increase applications by over 4%, but this is an achievement that only few can attain each year.

[8] "The High but Hidden Cost of College Sports" (2015).

Despite an increase in the number of applications, athletic success does little to impact the overall quality of attendees. The quality of enrollees is more strongly correlated with changes in gross state product than any of the athletic performance measures. Like the quality of enrollees, the reach of the university is relatively unchanged by success on the court and fluctuates with changes in gross state product. Overall, basketball has little effect on enrollment measures, especially for schools in which there is both an FBS football program and a Division I basketball team. In general, athletic success does little to impact overall enrollment measures.

My main contributions to the overall literature are twofold. First, my study has a much larger scope than previous studies; it examines a much larger set of institutions over a larger span of time than previous work. Second, my study explores the relationship between athletic performance and expanding the reach of the university, something prior research has not examined.

Finally, it is worth mentioning that my sample of schools with NCAA Division I basketball teams is only a particular subset of the much larger universe of colleges and universities in the United States. It is not clear how well (if at all) the results for Division I schools could generalize to schools in Division II or II, or in the NAIA.

CHAPTER TWO

Literature Review

In this section, I review previous work focused on the impact of college athletics on the number of applications, the quality of applications, and the geographic migration of students.

Number of Applications

Several works have examined the impact of collegiate athletics on the number of applicants in the years following successful seasons. Pulsinelli, Borland, and Goff (1989) conducted a case study at Western Kentucky University (WKU), tracking admissions alongside WKU's football and men's basketball teams. Using total revenue from enrollment, they found that successful seasons correlated with increased applications. Toma and Cross (1998) compared admissions statistics three years before and after NCAA national championships in both basketball and football, using peer institutions as a comparison group for treatment universities. The study found that successes in football yield more prominent increases in applications compared to successes in basketball. Additionally, Toma and Cross found the increase in applications to be more than just a one year occurrence, indicating that athletic successes may have a more lasting impact on the future of the university's admissions. Like Toma and Cross, Sandy, Sloane, and Rosentraub (2004) concluded that schools with more competitive athletic programs often see more applicants.

McEvoy (2006) examined the impact of Heisman Trophy candidates on a school's ability to attract more students, finding that universities that had a top five Heisman Trophy candidate saw a 6.6% increase in undergraduate admissions. McEvoy's study was limited to the impact of a singular high profile award rather than the entirety of the athletic program, thus limiting the scope of the study. A more recent study by Pope and Pope (2009) found a two to eight percent increase in application numbers for universities having men's basketball teams ranked in the top sixteen or football teams in the top 20. Unlike previous studies, Pope and Pope separated public and private school to find that private schools saw an even greater increase due to athletic successes. In general, previous studies appear to be relatively conclusive as to the positive effect of athletics on application numbers.

Quality of Applications

Overall, studies on the correlation between the quality of applicants, measured by standardized test scores of the incoming student body, and success of sports teams remain inconclusive. Pope and Pope (2009) found that increased applications allowed universities to be more selective and thus increase their average standardized test scores. Mixon (1995) found that a stronger history of NCAA basketball tournament play led to higher test scores. Cigilano (2006) concluded that universities with more highly ranked athletic programs are often more highly ranked in academia; as a result, these more athletically competitive and academically reputable institutions naturally attracted applicants of a higher caliber. One of the first studies in this literature (McCormick and Tinsley (1987)) revealed a 3% increase in SAT scores for high performing athletic programs in top tier conferences. Additionally, McCormick and Tinsley found that a

trend of in-conference football wins yields a marginal increase in SAT scores. This study was conducted on a one year trend study rather than over a longer time span. However, an update of McCormick and Tinsley (1987) by Bremmer and Kesselring (1993) showed no relationship between success in athletics and average SAT scores. Further, Mangold, Bean, and Adams (2003) showed no relationship between the performance of athletic programs and graduation rates. Similarly, Smith (2008) found that successes in basketball only marginally increased SAT scores of incoming students, but these successes did not last more than a year. Despite studies indicating an increase in the total number of applications, few studies have concluded that universities are able to increase their selectivity as asserted by Pope and Pope. Chung (2012) offers on explanation for this paradox: "Students with lower SAT scores tend to have a stronger preference for athletic success while students with a higher SAT scores have a stronger preference for academic quality." Chung believes that higher performing students would not be swayed in their preferences by a university's athletic performance, and it is the students of a lower caliber that make up the increased application population. Therefore, despite an increased applicant pool, the quality of enrolled students often remains the same because universities will at least maintain their admissions standards.

Geographic Migration of Students

Little research has been done on the impact of athletics and a university's ability to pull applicants across state lines or international borders. Judah (2010) indicated that the development of athletic programs increased diversity in the student body because students of all types are need to build an athletic program. Additionally, athletic programs introduce a new element of university recruiting. Not only must the university catch the

attention of prospective students, the university must also recruit athletes to fill their athletic programs. Perez (2012) conducted a case study on schools in the California State University system and found that success of football and basketball teams attracted more local students to the university. Other than these two studies, little research has been done in this literature. Beyond athletics, Mixon and Hsing (1996) found that students were drawn to areas with a larger number of colleges, higher levels of education in the surrounding population, and a higher growth in employment.

CHAPTER THREE

Data

Schools in Dataset

The National Collegiate Athletic Association, NCAA, is the main governing system for collegiate athletics. To even the playing field for smaller programs, the NCAA has created divisions to classify the athletic programs at universities across the nation. My data set includes participants of NCAA Division I Men's Basketball at some point between 2003 and 2014. Division I basketball is the pinnacle of collegiate basketball where over 325 teams compete for the coveted title of National Champion. To be considered a Division I team, universities must meet a set of criteria as defined by the NCAA. Division I colleges must participate in at least seven sports for each gender, consisting of at least two team sports each. Additionally, Division I colleges must meet a minimum requirement of Division I play with other Division I schools, and contests above the minimum must be at least fifty percent Division I play. Division I schools must also play at least one-third of their games on their home court. The NCAA has placed a minimum and maximum number of athletic scholarships allowed by each university. Criteria for Division II and III athletic programs are much more relaxed and require a lesser amount of participation.[1] In total, I chose a sample of 354 institutions for this study, consisting of all schools that participated in at least one year of Division I basketball play from 2003 to 2014. A smaller subset of schools in my data set had

[1] Source: "Divisional Differences and the History of Multidivision Classification," *NCAA.*

football programs in the Football Bowl Subdivision.[2] The dataset includes 124 universities which had concurrent participation in Division I basketball and FBS football for at least one year between 2003 and 2014.

I focused on football and basketball success in this study because of their prominence in American culture. Loyal fans across the nation religiously follow their sports teams through the good, the bad, and the ugly; but basketball and football teams capture a much larger and broader fan base. While universities boast a wide variety of athletic programs including softball, baseball, volleyball, etc., the football and basketball teams are almost always the most popular. During the 2017 College Football Playoff National Championship, over 26 million people across the nation tuned in to watch the Clemson Tigers upset the Crimson Tide in the final game of the season.[3] In the season of March Madness, it is estimated that over 70 million brackets are filled out by people across the nation. Although some will fill out multiple brackets, the $9 billion betting dollars dished out by ambitious fans provides a glimpse into the scope of this American tradition.[4] Coming in at 1.34 million and 1.09 million, the viewership for the finals of the third and fourth most watched sports, women's softball and men's baseball, does not come close to collegiate basketball and football.[5] In fact there are singular regular season football and basketball games that surpass College World Series numbers.

[2] The Football Bowl Subdivision, or FBS, is the highest collegiate football division. Programs participating in FBS must maintain an average of 15,000 attendees at football games. Additionally, programs in this division are often much more elaborate and receive much more publicity.

[3] Source: "More than 26 Million Viewers Watched the College Football Playoff National Championship," *ESPN Media Zone*, January 10, 2017.

[4] Source: "Estimated 40 Million Fill Out Brackets," *ESPN*, March 12, 2015.

[5] Source: "College World Series viewer average for final was up from 2015 before weather postponement," *Omaha World-Herald*, July 13, 2016.

I limited the data to Division I schools for a similar reason. Although Division I schools represent only a small subset of all colleges and universities, this subset represents the most watched and widely known set of universities. Viewership for Division II and Division III basketball pales in comparison to Division I basketball. To capture the "advertising effect" of collegiate athletic success, it is only natural to use the programs which attract the greatest attention.

Data Sources

Sports Data Sources

I collected data on athletics by hand from a variety of sources including conference media guides, ESPN.com, and sports-reference.com. Media guides, created by each conference for various media sources, provide information about players, details about the upcoming schedule, and conference history. Other sports research websites, ESPN.com and sports-reference.com were used to fill in any missing information. As basic proxies of team quality, I included information about the teams' winning percentages and end-of-regular season standings for both basketball and football teams.[6] Additionally, I used dummy variables to denote national and conference champions for basketball and football.

NCAA Division I basketball teams often participate in a post-season conference tournament prior to the actual NCAA Basketball Tournament. Often, the conference tournament champion is not the conference champion as designated by regular season

[6] Due to the strong correlation between winning percentage and conference standings, only conference standings were used in the results reported below. *F*-tests indicated that conference standing was a better fit to the model.

play. Therefore, I included a dummy variable for basketball teams winning their conference tournament championships.

To win a basketball National Championship, basketball teams must compete in six rounds of the tournament, each having higher stakes than the previous round. Given the nature of post-season basketball play, I included a variable for the number of NCAA tournament games played.

Admissions Data

The National Center for Education Statistics' Integrated Postsecondary Data System (IPEDS) was the primary source for admissions data collection. This database provided information regarding the quantity of applications, accepted applicants, and actual enrollees. Additionally, information was pulled for each university's standardized test scores. College applicants differ in the extent to which they take the SAT or ACT, and the number of applicants taking each test varies across colleges. As a result, I converted each school's 25th and 75th percentile ACT and SAT scores into a single weighted average variable based upon the national percentile score for each school's 25th and 75th percentile enrollee under each admissions test. For each university, IPEDS reports the 25^{th} and 75^{th} percentile for the SAT Verbal, SAT Math, SAT Writing, ACT Composite, and the subsections of the ACT test. Because schools often do not consider the writing portions of the ACT and SAT exams, I did not include the writing sections in the weighted average score. Finally, I include information regarding each student's home state. In IPEDS, universities report the number of students in each freshman class by state, US territory, or foreign country, which I used to determine the geographic reach of each university.

College Rankings

Yearly college rankings were pulled from *US News and World Report*'s annual list of "Best National Universities" and "Best Liberal Arts Colleges". From its inception until 2011, college rankings were reported in a late August/early September issue of *US News and World Report*. In 2011, the rankings were published in a special issue, not included in the normal subscription. College rankings also became available online, with additional details about each university and the rankings available for purchase. According to an article in the 2006 issue, rankings are a function of graduation and retention percentages, financial resources, student selectivity, alumni giving, and peer assessment.[7] I created dummy variables for schools in the Top 100 National Universities and Top 100 Liberal Arts Colleges for 2003-2014. While the highest ranked universities remained relatively stagnant over the designated period, several lower ranked universities fell in and out of the Top 100. For this reason, schools that were ranked in the Top 100 over 70% of the time were considered to be "Ranked Universities" for the purpose of this study. The others fell into the "Unranked Universities" category.

State Level Data

I also included state level data on population and on economic well-being. The population measure used below includes the (natural log of the) total number of 16 to 19 year olds in the state. This information was pulled from the Bureau of Labor Statistics (BLS) which reports estimates on a yearly basis. Additionally, per capita gross state

[7] "How the Rankings Work" (2006).

product (GSP)[8] was pulled from the Bureau of Economic Analysis (BEA) as a measure of individual incomes of each state. The BEA reports per capita GSP for each state on a yearly basis. Both statistics were included with their natural logs.

SAT and ACT Percentiles

IPEDS reports SAT and ACT scaled scores for both the 25th and 75th percentiles of the freshman class. To generate a more uniform standard for comparison, scale scores were reconverted into a more standardized percentile based on national aggregate performance. Since SAT Composite scores were not reported, the math and verbal portions of the exam were added to artificially create an SAT composite score. Using archives from College Board[9] and ACT Test, scaled scores were converted into percentiles based on national performance for the year. Conversion tables were used for the previous year since scores reported for the recently enrolled class would have been for tests take in the previous year. Since standardized test preferences vary across universities, the percentiles for the SAT and ACT tests were weighted based on the number of students reporting each score. In some cases, applicants reported scores for both tests. The following formula was used to calculate the 25th score percentile, and a similar formula was used to calculate the 75th percentile.

$$\text{PER25} = \frac{\text{Number Reporting SAT}}{(\text{Reporting SAT} + \text{Reporting ACT})} * (\text{SAT 25th Percentile}) + \frac{\text{Number Reporting ACT}}{(\text{Reporting SAT} + \text{Reporting ACT})} * (\text{ACT 25th Percentile})$$

[8] Gross State Product (GSP) is a measure of the market value of goods and services produced by each state during the span of one year. GSP is the state level version of the more common GDP.

[9] College Board is a non-profit organization which administers both the SAT and Advance Placement (AP) Tests.

CHAPTER FOUR

Methods

Empirical Strategy

For this study, I constructed a panel dataset with each observation representing a university in a given year; data span from 2003 to 2014. There are eight different dependent variables, each regressed on a set of variables as follows:

$$Y_{it} = \alpha + \beta \boldsymbol{S_{i,t-1}} + \gamma \boldsymbol{X_{i,t-1}} + \delta Z_{i,t-1} + \theta_t + \phi_i + \varepsilon_{it}$$

The dependent variables Y_{it} in the various regressions are the number of applications; the number of students admitted; the number of students enrolled; standardized test scores of 25th and 75th percentile student; number of in-state enrollees; the number of U.S. enrollees from out-of-state; and the number of enrollees from foreign countries. $\mathbf{S_{it}}$ is a vector of the two state-level control variables, population aged 16 to 19 and gross state product. $\mathbf{X_{it}}$ is a vector of measures of athletic success. Depending on the particular regression, these include place in the conference standings in basketball or football, a dummy variable for a conference championship in basketball or football, a dummy variable for conference tournament champion in basketball, the number of games played in the NCAA basketball tournament, and a dummy variable for a national championship in basketball or football. Additionally, $Z_{i,t-1}$ represents the total undergraduate student population for each university on a lagged basis. The parameters θ_t and ϕ_i are fixed effects for year and school, respectively, to control for unobserved heterogeneity across universities and across time.

Lagged Variables

The athletic performance of each university's teams was included on a lagged basis for each observation. During a student's junior year of high school, they begin to seriously consider their next steps following high school graduation. At this time, high school students begin to tour colleges and prepare their applications. Thus, the advertising effect of collegiate athletics should occur on a one to two year lagged basis. In this dataset, variables pertaining to athletic performance are lagged one year to capture the high school student's senior year, the actual year in which they will be making their college decisions. For the same reason, college rankings were included for each university on a one-year lagged basis. As a robustness check, I also examined two-year lagged values, finding little of significance.

Divisions of the Sample

In addition to dividing the sample by the presence or not of FBS football programs, I also analyzed separate subsamples based on additional university characteristics. Colleges and universities were denoted as private or public institutions based on their tax filing status. Since many public institutions are typically more widely known and advertised in the community, I examined private and public schools separately to determine whether athletic success would have a greater impact on private, typically lesser known, institutions. Similarly, I split the sample of colleges and universities based on *US News and World Report* rankings to identify whether unranked institutions might see a greater benefit from athletic success. Finally, I split the sample of colleges and universities based on conference membership. Schools belonging to Power

Five[1] conferences were separated to determine if schools within these highly-publicized conferences would realize greater returns from their athletic successes.

Timing the Impact of Athletics

While some students were born knowing which university they wish to attend, the college choice process typically spans multiple years. Students typically begin to seriously consider what college they wish to attend during their junior year. It is also at this time that many students take their SAT or ACT tests. While students are studying for their respective tests, they often begin to look at various colleges to see if their own credentials match what is expected by the university. After taking the necessary tests, students can then begin to apply to colleges during the summer before their senior year, and applications typically remain open until late fall. Colleges vary in timing to notify students of their acceptance including early decision[2], rolling admission[3], early action[4], and regular admission[5]. By early spring, students will have received feedback from all the universities they applied to but not before experiencing the months long waiting game

[1] Power Five conferences include Atlantic Coast Conference (ACC), Big Ten Conference, Big Twelve Conference, Pac-12 Conference, and Southeastern Conference (SEC).

[2] Early decision is a binding decision made by students who choose to apply to a singular university at an earlier point in the admissions process. Under early decision, students will apply for a singular university and receive feedback from the university much earlier in the admissions process. However, if the student is accepted into the university, he or she is bound to that decision.

[3] Under rolling admission, students submit their applications during a large window of time, and colleges can choose to admit students as they apply. While there are typically deadlines for submitting applications, colleges utilizing rolling admission can admit students at any point up until the decision date.

[4] Early action is like early decision, but the decision of the student is not binding. The student can be accepted into a university on an early action basis but choose not to attend the university at a later date.

[5] Regular admission is the term used to describe the method used by most universities. Under regular admission, the applicants are pooled and held until the application deadline. Colleges will either announce acceptances on a single date or notify students in large batches following the application deadline.

that happens to fall during the heart of football and basketball season. In order to time the impact of athletics to match the college decision process, variables measuring athletic performance were lagged on a one-year basis since a majority of the actual admissions process occurs in the year prior to attendance.

CHAPTER FIVE

Results

The results of my various regressions are set forth in Tables A.1-A.28. The tables are divided into two sections: results for the impact on quantity of applications and the results for the impact on the quality and reach of the attendees. Tables A.1 through A.14 include the results related to the quantity of applications, while tables A.15 through A.28 include results for the quality and reach of applications. Both sections begin with a table including all the schools in the sample, controlling only for basketball performance variables, Table A.1 and Table A.15, respectively. Tables A.2 and A.16 include only schools with both FBS football and Division I basketball programs, controlling only for football performance variables. Further, Tables A.3 and A.17 includes the set of basketball-only schools (i.e., schools without FBS football teams). Tables A.4 through A.7 and A.18 through A.21 include further divisions for basketball-only schools based on *US News and World Report* rankings (Ranked in Top 100 or unranked) and filing status (public or private). Following these tables, Table A.8 and Table A.22 detail results for the combined effects of basketball and football on all applicable schools in the sample. Like the basketball-only subsection, Tables A.9 through A.14 and A.23 through A.28 include additional divisions to the larger group of basketball and football schools. The subsection of basketball and football results also includes tables distinguishing Power Five conference schools from non-Power Five conference schools. Finally, Table A.29 provides summary statistics of all variables.

Quantity of Applicants, Acceptances, and Enrollees

Regression results on the quantity of applications, acceptances, and enrollees are included in Tables A.1 through A.14 of the appendix. In general, increases in the 16-19 year-old population are associated with higher applications (*Num_App*), higher admissions (*Num_Adm*), and higher enrollments (*Num_Enr*), and application, admission and acceptance numbers follow the trend set by the size of the student body of the previous year.

Basketball success has little influence on the admissions process, but success in a university's football team helps to increase applications, admissions, and enrollments. Application numbers are positively correlated with changes in the civilian population between the ages of 16 and 19 in the university's home state. A 1% increase in the potential applicant population yields a 0.43%, 0.19%, and 0.12% increase in applications, acceptances, and enrollments, respectively (Table A.1). The model indicates that Division I basketball success in the previous year does little to help improve an institution's numbers beyond growth correlated with population and student body growth (Table A.1), but football successes positively influence admission metrics. Beyond population increases, universities with an FBS football team see increases in admission numbers following a football conference championship and improvements in conference standings.

A football conference championship yields a 4.5% and a 3.4% increase in admissions and enrollment, respectively (Table A.8). This increase is primarily driven by public schools who experience a 6.4% increase in applications, 4.9% increase in acceptances, and 4.0% in enrollment following a football conference championship

(Table A.9). Comparatively, quantity for the 48 private schools with an FBS football team remains relatively unchanged after a football conference championship (Table A.10). Compared to their ranked counterparts, unranked institutions see a statistically significant change in admission numbers following a conference title with a 10.2% increase in applications, 7.1% increase in acceptances, and a 5.5% increase in enrollment (Table A.12). Schools belonging to a Power Five conference also share in the benefits of a conference title with a 6.0% increase in number of acceptances (Table A.13).

Improvements in football conference standings also help to increase admission numbers. On average, application numbers remain relatively unchanged after improved conference performance, but smaller subsets of the larger sample reveal benefits to improved conference standing (Table A.3). Private universities experience a 2.6% increase in applications received with each marginal improvement in conference standings (Table A.10). (The negative coefficient in Table A.10 and elsewhere indicates that smaller numbers are higher ranks in the standings – i.e., place 1 is better than place 10.) Like private universities, ranked institutions see changes in enrollment measures due to improved conference standing. Applications increase 1.6% and enrollment increases 0.4% for each step up in the standings (Table A.11). Power Five schools also experience increases in application and enrollment numbers at 1.1% and 0.6%, respectively (Table A.13).

Quality of Applications

Regressions on the quality of applications are presented in columns 1 and 2 of Tables A.15 through A.28. The dependent variable in the column 1 regression is the national percentile test score ranking of the university's 25th percentile enrollee

(*Qual_25th*); in column 2, the dependent variable is the national percentile test score of the university's 75th percentile enrollee (*Qual_75th*).

Basketball success does little to change overall test scores, but improved football performance appears to decrease scores in the 25th and 75th percentile. The model indicates that, in aggregate, athletic success does little to improve the quality of attendees, but isolating schools with both basketball and football programs reveals that athletics is correlated with diminished test scores. As these universities improve their conference standing, scores in the 25th percentile fall by 0.55 points, but the model indicates that a conference championship helps to recover losses with a 4.16 point increase in the 25th percentile. A potential explanation for this occurrence could be that the change in quality as a result of conference is not linear but rather changing at a decreasing rate (Table A.16). A similar result is seen mainly in the smaller subsets of public universities and unranked universities. In public universities and unranked universities, a national championship in football yields a sizeable increase in test scores in the 75th percentile (Table A.23 and Table A.26). However, scores in the 25th percentile remain relatively unchanged indicating that the gap between students is widening. Aside from winning a national football title, athletics does little to improve the overall quality of enrolled students. Given that only one school out of hundreds will be able to reap the benefits of a national title, this level of academic improvement is unattainable for most. Despite increases in the number of applications received, universities maintain a relatively stable standard of academic achievement for incoming students.

Geographic Diversification

The regressions for geographic diversification are presented in columns 3-5 of Tables A.15 through A.28. The dependent variable in column 3 is in-state students enrolled (*In_St_Enr*); the dependent variable in column 4 is out-of-state students enrolled (*Out_St_Enr*); and the dependent variable in column 5 is foreign students enrolled (*For_Enr*).

Despite growing number of applicants, success in athletic programs does little to help expand the geographic reach of the university. Much of the change in geographic reach is explained by changes in GSP. As the gross state product increases, more out of state and foreign students are attracted to the university, but the university retains fewer in-state applicants. Perhaps the higher GSP attracts more out-of-state and foreign students to the university in pursuit of economic opportunities, while affording in-state students the opportunity to pursue out of state opportunities (Table A.15). For universities with both basketball and football teams, both athletic programs play a role in diversifying the reach of the university. However, the two seem to act against each other. Winning the basketball conference tournament championship is associated with a 2.6% decrease in out-of-state enrollees (Table A.22). Ranked universities also experience a similar decline in out-of-state attendees following a tournament championship (Table A.25). This counterintuitive result is further magnified in private universities who experience a 13.2% decline in out-of-state enrollees (Table A.24).

Conversely, football successes help to improve the geographic diversity of the student body. Improvements in football conferences standings help to boost out-of-state and foreign numbers with increases of 0.5% and 0.09% per place in the standings,

respectively (Table A.22). A similar result is seen in further divisions of the football and basketball school sample (Table A.23 through Table A.28). An interesting outcome from football is that an increase in football standings is associated with higher out-of-state enrollment, but a football conference championship is associated with lower out-of-state enrollment. Using the estimates in Table A.22, a football team would have to jump from no higher than fifth place to first place in a single year for the net effect on out-of-state enrollment to be positive. Overall, football success does little to impact the reach of enrollees.

CHAPTER SIX

Concluding Remarks

Discussion

Many people believe that an increase in the applicant pool allows the university to be more selective, thus attracting smarter individuals. This study follows much previous literature, finding that the opposite is true. Despite a growing applicant pool overall, universities do not consistently increase their 25^{th} and 75^{th} percentile test scores following athletic success. Lower-performing students may be more susceptible to the advertising effect of collegiate athletic success, while academically-oriented students may be less likely to be swayed. One potential explanation for my finding is that the set of marginal applicants from athletic success is made up of less qualified students who might have become interested in a university due to their recent athletic success.

Popular narratives in the media and among fans (and maybe even university administrators) point to athletic success as a way increase brand presence beyond state lines. However, the results of this study find that athletic success does little to increase out-of-state and international enrollment in the short-run. FBS national championships encourage more local students to remain at home, which is associated with fewer out-of-state and foreign students. Out-of-state and international students may be initially interested in a university due to recent athletic success, but since information regarding the home states or countries of applicants is not available, it is not possible to know if the number of out-of-state and foreign applicants has increased. It is possible that a larger

number of geographically diverse students are applying to the university, but they eventually decide to stay closer to home when making their final decision. If this is true, the advertising effect of the athletics persists, but universities are unable to capitalize on the potential for geographic expansion.

Although this study includes a wider sample of universities over a greater period, this study only includes Division I programs, representing only a small portion of collegiate athletics. Therefore, the results of this study only speak to the impact of a small subset of the entirety of collegiate athletics. Another limitation in this study persists because of several unreported observations. Some universities choose not to report more detailed information, so some observations are unavailable on IPEDS. Additionally, this study does not account for the impact of the athletes themselves. As some universities seek to improve their athletic programs, they may be willing to trade higher quality students for higher quality athletes. The number of athletes is reported by Department of Education in the Equity in Athletics Data Analysis, but little other information is reported to indicate the quality of the student. In general, the athletic population represents a very small subset of the entire student body, so it should have little impact on my measures of quantity, quality, and reach. Similarly, the school-level fixed effect should control for the effects of the athlete population, so long as those populations were fairly constant in size over the sample period.

Conclusion

With little correlation to the academic improvement of students and only marginal effects on the collegiate admissions process, many people might wonder how a university could rationalize the almost obscene amount of money universities are spending on an annual basis to maintain their athletic programs. Many ask why a university, a supposed academic institution, has an athletic expenditure growth rate that is greater than its academic budget growth rate. While this study appears to confirm the beliefs of the dissenters of collegiate athletics, there may be benefits from athletics beyond the size and composition of the student body.

Looking deeper, it is important to discuss the varying views of the purpose of higher education. As a good, higher education has a dual nature: it is both an investment in the future and a current consumption good. A successful athletic program can improve the quality of the consumption good by making time on campus a more fun experience, so that individuals who place higher value on the consumption aspect of higher education might be more willing to choose a college based upon recent athletic success. Those who more highly value the investment component are more likely to see athletic success as a complement to their educational experience, and not a substitute. For this group, athletic programs are merely a bonus, not a necessity. Even so, my results did not reveal a huge difference between ranked and unranked universities in terms of the effects of athletic success.

So why do universities continue to sponsor expensive sports programs? One possibility begins with a recognition that the impact of collegiate athletics reaches every part of the student experience. A study done by Clotfelter revealed that there is an

element of “social capital” that athletic programs bring to universities. In his study, Clotfelter compared two similar highly selective universities. At the school with an athletic program, Clotfelter found greater social interactions between students while maintaining a similar level of academic involvement. The results of Clotfelter’s study hint at a greater purpose behind collegiate athletics – enriching the student experience (Clotfelter). The presence of these programs encourages socialization of non-athletic students and a stronger sense of loyalty to the university. These in turn may impact the future of the university through both monetary donations and improving its alumni network. If a university can capitalize on the success of their athletic programs, the university can seek long run benefits by strengthening the alumni network and boosting donations. Looking at the dollar sign associated with athletic programs brings discomfort to many, but the intangible benefits of these programs might be reason enough for their persistence.

APPENDIX

Table A.1. Quantity: Single Sport Effects: Basketball – All Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.4268***	0.1873**	0.1240***
	(0.087)	(0.077)	(0.046)
GSP	-0.0872	-0.1111	0.0259
	(0.131)	(0.116)	(0.069)
Stu_Body	0.0001***	0.0001***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0026	0.0020	0.0002
	(0.002)	(0.002)	(0.001)
Tour_Cham_BB	0.0055	0.0058	-0.0025
	(0.017)	(0.015)	(0.009)
Conf_Cham_BB	0.0174	0.0107	0.0085
	(0.016)	(0.014)	(0.008)
Tour_Game_BB	0.0019	0.0030	-0.0000
	(0.006)	(0.005)	(0.003)
Nat_Cham_BB	0.0044	-0.0092	0.0041
	(0.074)	(0.066)	(0.039)
Constant	6.4677***	7.7588***	6.0419***
	(1.622)	(1.435)	(0.852)
Observations	2,775	2,775	2,775
R-squared	0.185	0.171	0.159
Number of UnitID	344	344	344
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.2. Quantity: Single Sport Effects: Football – All Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.2460**	-0.0077	0.0700
	(0.112)	(0.090)	(0.055)
GSP	-0.1553	0.0447	0.2413***
	(0.166)	(0.133)	(0.082)
Stu_Body	0.0001***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)
Nat_Cham_FB	-0.0964**	-0.0692*	-0.0066
	(0.044)	(0.035)	(0.022)
Conf_Stan_FB	-0.0056*	-0.0001	-0.0012
	(0.003)	(0.002)	(0.001)
Conf_Cham_FB	0.0320	0.0447***	0.0327***
	(0.021)	(0.017)	(0.010)
Constant	8.5431***	7.5753***	4.5218***
	(2.038)	(1.632)	(1.010)
Observations	1,085	1,085	1,085
R-squared	0.260	0.250	0.243
Number of UnitID	124	124	124
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.3. Quantity: Basketball Only Schools – All Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.4584***	0.2206*	0.0998
	(0.126)	(0.113)	(0.067)
GSP	-0.0440	-0.2887	-0.1919*
	(0.195)	(0.176)	(0.103)
Stu_Body	0.0001***	0.0001***	0.0001***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0028	0.0028	-0.0002
	(0.002)	(0.002)	(0.001)
Tour_Cham_BB	0.0105	0.0124	-0.0108
	(0.026)	(0.023)	(0.014)
Conf_Cham_BB	0.0252	0.0237	0.0173
	(0.022)	(0.020)	(0.012)
Tour_Game_BB	0.0026	0.0023	0.0041
	(0.012)	(0.011)	(0.007)
Constant	5.5256**	9.1166***	8.1833***
	(2.420)	(2.188)	(1.285)
Observations	1,679	1,679	1,679
R-squared	0.174	0.179	0.147
Number of UnitID	227	227	227
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.4. Quantity: Basketball Only Schools – Public Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.3400**	-0.0219	-0.0196
	(0.150)	(0.145)	(0.100)
GSP	-0.2908	-0.4990**	-0.0293
	(0.222)	(0.215)	(0.148)
Stu_Body	0.0001***	0.0001***	0.0001***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.0014	0.0006	-0.0021
	(0.003)	(0.003)	(0.002)
Tour_Cham_BB	0.0241	0.0108	-0.0041
	(0.031)	(0.030)	(0.021)
Conf_Cham_BB	0.0014	0.0007	0.0114
	(0.026)	(0.025)	(0.017)
Tour_Game_BB	-0.0006	0.0051	0.0003
	(0.017)	(0.016)	(0.011)
Constant	8.6729***	12.6883***	7.2121***
	(2.746)	(2.655)	(1.830)
Observations	944	944	944
R-squared	0.267	0.242	0.161
Number of UnitID	165	165	165
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.5. Quantity: Basketball Only Schools – Private Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.5785***	0.5485***	0.1504*
	(0.216)	(0.185)	(0.086)
GSP	0.0594	-0.0715	-0.3665***
	(0.341)	(0.292)	(0.136)
Stu_Body	0.0001***	0.0001***	0.0001***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0063	0.0054	0.0009
	(0.004)	(0.003)	(0.002)
Tour_Cham_BB	-0.0300	0.0074	-0.0070
	(0.043)	(0.037)	(0.017)
Conf_Cham_BB	0.0769**	0.0832***	0.0307**
	(0.037)	(0.031)	(0.015)
Tour_Game_BB	0.0008	-0.0041	0.0032
	(0.018)	(0.015)	(0.007)
Constant	4.0341	4.8617	9.6644***
	(4.300)	(3.680)	(1.714)
Observations	735	735	735
R-squared	0.064	0.108	0.116
Number of UnitID	128	128	128
Prob > F	1.44e-06	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.6. Quantity: Basketball Only Schools – Ranked Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.1499	0.2807	0.0267
	(0.251)	(0.222)	(0.082)
GSP	0.3547	0.0354	-0.2930*
	(0.499)	(0.441)	(0.163)
Stu_Body	0.0002***	0.0001***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0084	0.0043	-0.0002
	(0.005)	(0.005)	(0.002)
Tour_Cham_BB	-0.0967*	-0.0470	0.0078
	(0.057)	(0.050)	(0.019)
Conf_Cham_BB	0.0289	0.0261	0.0163
	(0.046)	(0.040)	(0.015)
Tour_Game_BB	0.0530**	0.0352*	0.0063
	(0.024)	(0.021)	(0.008)
Constant	2.9726	5.2165	10.0013***
	(6.009)	(5.310)	(1.962)
Observations	300	300	300
R-squared	0.281	0.189	0.163
Number of UnitID	38	38	38
Prob > F	0	2.46e-09	9.41e-08

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.7. Quantity: Basketball Only Schools – Unranked Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.5854***	0.2218*	0.1086
	(0.143)	(0.131)	(0.080)
GSP	-0.1002	-0.3410*	-0.1775
	(0.211)	(0.193)	(0.119)
Stu_Body	0.0001***	0.0001***	0.0001***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0016	0.0024	-0.0001
	(0.003)	(0.003)	(0.002)
Tour_Cham_BB	0.0343	0.0263	-0.0134
	(0.029)	(0.026)	(0.016)
Conf_Cham_BB	0.0178	0.0196	0.0180
	(0.025)	(0.023)	(0.014)
Tour_Game_BB	-0.0107	-0.0072	0.0037
	(0.014)	(0.013)	(0.008)
Constant	5.2753**	9.6364***	7.9274***
	(2.645)	(2.420)	(1.486)
Observations	1,379	1,379	1,379
R-squared	0.172	0.182	0.147
Number of UnitID	189	189	189
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.8. Quantity: Combined Basketball and Football Effects – All Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.2440**	-0.0084	0.0666
	(0.112)	(0.090)	(0.056)
GSP	-0.1650	0.0455	0.2408***
	(0.167)	(0.134)	(0.083)
Stu_Body	0.0001***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0026	0.0003	0.0011
	(0.003)	(0.002)	(0.001)
Tour_Cham_BB	0.0033	-0.0051	-0.0017
	(0.023)	(0.018)	(0.011)
Conf_Cham_BB	0.0122	-0.0010	-0.0001
	(0.021)	(0.017)	(0.010)
Tour_Game_BB	0.0010	0.0004	-0.0011
	(0.006)	(0.005)	(0.003)
Nat_Cham_BB	0.0021	0.0021	0.0014
	(0.064)	(0.051)	(0.032)
Nat_Cham_FB	-0.0966**	-0.0692*	-0.0077
	(0.044)	(0.036)	(0.022)
Conf_Stan_FB	-0.0055*	-0.0001	-0.0012
	(0.003)	(0.002)	(0.001)
Conf_Cham_FB	0.0334	0.0449***	0.0336***
	(0.021)	(0.017)	(0.011)
Constant	8.6434***	7.5692***	4.5441***
	(2.046)	(1.640)	(1.014)
Observations	1,085	1,085	1,085
R-squared	0.260	0.250	0.244
Number of UnitID	124	124	124
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.9. Quantity: Combined Basketball and Football Effects – Public Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	-0.0315	-0.1680*	0.0279
	(0.110)	(0.101)	(0.066)
GSP	-0.5076***	-0.1479	0.1928*
	(0.165)	(0.151)	(0.099)
Stu_Body	0.0001***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0046*	0.0014	0.0011
	(0.003)	(0.002)	(0.002)
Tour_Cham_BB	0.0227	0.0049	0.0005
	(0.022)	(0.020)	(0.013)
Conf_Cham_BB	0.0243	-0.0008	-0.0010
	(0.020)	(0.018)	(0.012)
Tour_Game_BB	-0.0004	-0.0003	-0.0011
	(0.006)	(0.006)	(0.004)
Nat_Cham_BB	0.0218	0.0264	0.0028
	(0.060)	(0.055)	(0.036)
Nat_Cham_FB	-0.0705*	-0.0483	-0.0051
	(0.041)	(0.038)	(0.025)
Conf_Stan_FB	0.0028	0.0023	-0.0006
	(0.003)	(0.003)	(0.002)
Conf_Cham_FB	0.0644***	0.0488**	0.0404***
	(0.021)	(0.019)	(0.013)
Constant	13.8610***	10.5840***	5.3381***
	(2.033)	(1.860)	(1.218)
Observations	880	880	880
R-squared	0.321	0.262	0.241
Number of UnitID	117	117	117
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.10. Quantity: Combined Basketball and Football Effects – Private Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	1.0622***	0.6164***	0.2625***
	(0.372)	(0.196)	(0.096)
GSP	0.0801	0.3495	0.2720*
	(0.621)	(0.327)	(0.160)
Stu_Body	0.0001***	0.0001***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.0043	-0.0035	0.0031*
	(0.007)	(0.004)	(0.002)
Tour_Cham_BB	-0.0364	-0.0444	0.0034
	(0.068)	(0.036)	(0.018)
Conf_Cham_BB	-0.0557	-0.0183	-0.0003
	(0.070)	(0.037)	(0.018)
Tour_Game_BB	-0.0059	-0.0071	0.0022
	(0.023)	(0.012)	(0.006)
Nat_Cham_BB	0.0902	-0.0107	-0.0010
	(0.242)	(0.128)	(0.062)
Nat_Cham_FB	-0.1338	-0.0692	-0.0166
	(0.159)	(0.084)	(0.041)
Conf_Stan_FB	-0.0260***	-0.0053	0.0002
	(0.009)	(0.005)	(0.002)
Conf_Cham_FB	-0.1154*	-0.0211	0.0026
	(0.062)	(0.033)	(0.016)
Constant	1.0943	0.2971	2.6039
	(7.233)	(3.815)	(1.859)
Observations	205	205	205
R-squared	0.208	0.236	0.291
Number of UnitID	48	48	48
Prob > F	0.000241	3.00e-05	3.05e-07

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.11. Quantity: Combined Basketball and Football Effects – Ranked Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.6953***	0.3723***	0.1004*
	(0.169)	(0.113)	(0.058)
GSP	0.1787	0.4163**	0.3703***
	(0.257)	(0.172)	(0.088)
Stu_Body	0.0001***	0.0001***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0004	-0.0006	0.0016
	(0.004)	(0.002)	(0.001)
Tour_Cham_BB	-0.0380	-0.0305	-0.0144
	(0.031)	(0.021)	(0.011)
Conf_Cham_BB	-0.0013	0.0030	0.0020
	(0.030)	(0.020)	(0.010)
Tour_Game_BB	0.0076	0.0067	0.0013
	(0.008)	(0.005)	(0.003)
Nat_Cham_BB	-0.0860	-0.0620	-0.0205
	(0.069)	(0.046)	(0.024)
Nat_Cham_FB	-0.1032*	-0.0558	0.0114
	(0.058)	(0.039)	(0.020)
Conf_Stan_FB	-0.0164***	-0.0016	-0.0040***
	(0.004)	(0.003)	(0.001)
Conf_Cham_FB	-0.0375	0.0133	0.0079
	(0.030)	(0.020)	(0.010)
Constant	1.4902	0.8287	2.8015**
	(3.158)	(2.116)	(1.086)
Observations	487	487	487
R-squared	0.404	0.395	0.418
Number of UnitID	53	53	53
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.12. Quantity: Combined Basketball and Football Effects – Unranked Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	-0.1236	-0.2857**	0.0282
	(0.140)	(0.129)	(0.087)
GSP	-0.4542**	-0.2200	0.1372
	(0.205)	(0.189)	(0.127)
Stu_Body	0.0000***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0051	0.0014	0.0006
	(0.004)	(0.003)	(0.002)
Tour_Cham_BB	0.0396	0.0252	0.0133
	(0.031)	(0.029)	(0.019)
Conf_Cham_BB	0.0136	-0.0101	-0.0041
	(0.026)	(0.024)	(0.016)
Tour_Game_BB	-0.0115	-0.0130	-0.0064
	(0.011)	(0.010)	(0.007)
Nat_Cham_BB	0.2398*	0.1919	0.0669
	(0.133)	(0.123)	(0.083)
Nat_Cham_FB	-0.1532**	-0.1392**	-0.0445
	(0.065)	(0.060)	(0.040)
Conf_Stan_FB	0.0058	0.0023	0.0015
	(0.004)	(0.004)	(0.002)
Conf_Cham_FB	0.1018***	0.0705***	0.0548***
	(0.028)	(0.026)	(0.018)
Constant	13.8444***	12.0306***	5.8754***
	(2.515)	(2.322)	(1.559)
Observations	598	598	598
R-squared	0.269	0.239	0.210
Number of UnitID	71	71	71
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.13. Quantity: Combined Basketball and Football Effects – Power 5 Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.3140**	0.0814	0.0566
	(0.156)	(0.127)	(0.071)
GSP	-0.1001	0.3731*	0.3818***
	(0.244)	(0.198)	(0.111)
Stu_Body	0.0001***	0.0001***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0042	0.0027	0.0021
	(0.004)	(0.003)	(0.002)
Tour_Cham_BB	0.0112	-0.0020	-0.0084
	(0.033)	(0.026)	(0.015)
Conf_Cham_BB	-0.0153	-0.0084	-0.0047
	(0.031)	(0.025)	(0.014)
Tour_Game_BB	0.0030	0.0043	0.0021
	(0.008)	(0.006)	(0.004)
Nat_Cham_BB	-0.0272	-0.0289	-0.0256
	(0.075)	(0.061)	(0.034)
Nat_Cham_FB	-0.1003*	-0.1114**	0.0003
	(0.054)	(0.044)	(0.024)
Conf_Stan_FB	-0.0112***	-0.0031	-0.0055***
	(0.004)	(0.003)	(0.002)
Conf_Cham_FB	0.0320	0.0598**	0.0164
	(0.032)	(0.026)	(0.014)
Constant	7.4881**	3.5533	3.2526**
	(2.961)	(2.406)	(1.343)
Observations	535	535	535
R-squared	0.342	0.302	0.320
Number of UnitID	62	62	62
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.14. Quantity: Combined Basketball and Football Effects – Non-Power 5 Universities

VARIABLES	(1) Num_App	(2) Num_Adm	(3) Num_Enr
Pop_1619	0.1617	-0.0536	0.0887
	(0.162)	(0.128)	(0.088)
GSP	-0.3345	-0.2637	0.1391
	(0.228)	(0.180)	(0.124)
Stu_Body	0.0000***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.0002	-0.0031	-0.0006
	(0.004)	(0.003)	(0.002)
Tour_Cham_BB	-0.0108	-0.0089	0.0065
	(0.032)	(0.025)	(0.017)
Conf_Cham_BB	0.0288	0.0014	0.0030
	(0.028)	(0.022)	(0.015)
Tour_Game_BB	0.0041	-0.0005	-0.0080
	(0.012)	(0.009)	(0.006)
Nat_Cham_BB	0.0571	0.0393	0.0562
	(0.120)	(0.095)	(0.065)
Nat_Cham_FB	-0.1167	0.0094	-0.0140
	(0.085)	(0.067)	(0.046)
Conf_Stan_FB	-0.0020	0.0014	0.0026
	(0.004)	(0.003)	(0.002)
Conf_Cham_FB	0.0376	0.0436*	0.0504***
	(0.030)	(0.023)	(0.016)
Constant	11.0495***	11.1577***	5.3596***
	(2.849)	(2.250)	(1.551)
Observations	550	550	550
R-squared	0.184	0.204	0.198
Number of UnitID	69	69	69
Prob > F	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.15. Quality: Single Sport Effects: Basketball – All Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	3.1999	7.0645	0.1062**	-0.0681**	0.0094
	(6.157)	(6.588)	(0.046)	(0.031)	(0.007)
GSP	-6.7955	2.2315	-0.1467**	0.1438***	0.0373***
	(9.303)	(9.952)	(0.069)	(0.046)	(0.011)
Stu_Body	0.0005**	-0.0003	-0.0000	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.0155	0.1194	0.0012	0.0004	0.0003*
	(0.131)	(0.140)	(0.001)	(0.001)	(0.000)
Tour_Cham_BB	-0.8073	0.2526	-0.0158*	-0.0102*	-0.0000
	(1.235)	(1.322)	(0.009)	(0.006)	(0.001)
Conf_Cham_BB	0.7517	0.9675	0.0223***	0.0049	0.0025**
	(1.095)	(1.176)	(0.008)	(0.005)	(0.001)
Tour_Game_BB	0.5545	0.6774	0.0028	-0.0016	-0.0003
	(0.436)	(0.466)	(0.003)	(0.002)	(0.000)
Nat_Cham_BB	7.8527	8.6754	-0.0180	0.0413	0.0043
	(5.328)	(5.698)	(0.041)	(0.028)	(0.006)
Constant	97.0083	12.0624	1.6050*	-0.9343	-0.4561***
	(114.823)	(122.846)	(0.850)	(0.569)	(0.130)
Observations	2,871	2,862	2,823	2,823	2,823
R-squared	0.005	0.004	0.009	0.025	0.024
Number of UnitID	350	350	348	348	348
Prob > F	0.107	0.252	0.00340	1.49e-10	3.38e-10

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.16. Quality: Single Sport Effects: Football – All Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	-22.8629**	-14.1844	0.0978	0.0067	0.0247**
	(9.543)	(9.784)	(0.072)	(0.047)	(0.012)
GSP	-19.8830	2.8222	-0.2208**	0.1461**	0.0528***
	(14.136)	(14.492)	(0.107)	(0.070)	(0.018)
Stu_Body	-0.0004	-0.0012***	-0.0000	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Nat_Cham_FB	5.5988	9.7327**	0.0240	0.0039	-0.0099**
	(3.789)	(3.889)	(0.028)	(0.019)	(0.005)
Conf_Stan_FB	0.5506**	0.4759*	0.0011	-0.0049***	-0.0009***
	(0.253)	(0.259)	(0.002)	(0.001)	(0.000)
Conf_Cham_FB	4.1620**	3.0833*	-0.0044	-0.0184**	-0.0038*
	(1.793)	(1.839)	(0.014)	(0.009)	(0.002)
Constant	411.6259**	157.2840	2.4797*	-1.4550*	-0.7233***
	(173.756)	(178.136)	(1.313)	(0.855)	(0.219)
Observations	1,103	1,101	1,082	1,082	1,082
R-squared	0.020	0.031	0.009	0.047	0.056
Number of UnitID	124	124	124	124	124
Prob > F	0.00324	2.55e-05	0.179	3.03e-08	4.15e-10

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.17. Quality: Basketball Only Schools – All Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	21.3156***	23.4462***	0.1129*	-0.1271***	-0.0023
	(8.026)	(8.850)	(0.060)	(0.041)	(0.008)
GSP	1.7341	2.4310	-0.0825	0.1364**	0.0256**
	(12.467)	(13.742)	(0.093)	(0.063)	(0.013)
Stu_Body	0.0015***	0.0008**	-0.0000	0.0000***	0.0000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.2195	0.3745**	-0.0000	0.0005	0.0003**
	(0.159)	(0.176)	(0.001)	(0.001)	(0.000)
Tour_Cham_BB	-0.4201	-0.5341	-0.0024	0.0033	0.0009
	(1.679)	(1.852)	(0.013)	(0.008)	(0.002)
Conf_Cham_BB	1.4631	1.7990	0.0129	0.0102	0.0024
	(1.415)	(1.567)	(0.011)	(0.007)	(0.001)
Tour_Game_BB	0.1425	0.5778	0.0006	-0.0091**	-0.0013
	(0.806)	(0.888)	(0.006)	(0.004)	(0.001)
Constant	-115.1558	-103.2576	0.8600	-0.4564	-0.2501
	(154.513)	(170.326)	(1.160)	(0.783)	(0.159)
Observations	1,757	1,750	1,729	1,729	1,729
R-squared	0.023	0.012	0.005	0.025	0.013
Number of UnitID	233	233	231	231	231
Prob > F	1.07e-05	0.00847	0.352	3.77e-06	0.00857

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.18. Quality: Basketball Only Schools – Public Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	12.8178	18.5739	0.2460***	0.0138	0.0008
	(9.188)	(11.422)	(0.085)	(0.029)	(0.009)
GSP	-9.0609	1.9357	-0.0579	0.1041**	0.0246*
	(13.674)	(16.977)	(0.126)	(0.043)	(0.013)
Stu_Body	0.0027***	0.0023***	0.0000	0.0000***	0.0000***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.1047	0.3313	0.0010	0.0000	0.0001
	(0.188)	(0.235)	(0.002)	(0.001)	(0.000)
Tour_Cham_BB	0.3874	2.3766	-0.0012	0.0069	0.0018
	(1.932)	(2.406)	(0.018)	(0.006)	(0.002)
Conf_Cham_BB	-0.1006	0.0330	0.0123	0.0055	0.0008
	(1.608)	(2.014)	(0.015)	(0.005)	(0.002)
Tour_Game_BB	0.3607	-0.3977	0.0044	-0.0009	-0.0010
	(1.075)	(1.335)	(0.010)	(0.003)	(0.001)
Constant	29.1623	-92.5219	-0.0803	-1.0589**	-0.2679*
	(168.314)	(209.020)	(1.556)	(0.527)	(0.162)
Observations	1,013	1,008	999	999	999
R-squared	0.057	0.035	0.015	0.026	0.018
Number of UnitID	172	172	170	170	170
Prob > F	2.33e-08	9.57e-05	0.0894	0.00303	0.0315

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.19. Quality: Basketball Only Schools – Private Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	26.7707**	24.0843*	-0.1395	-0.3511***	-0.0296**
	(11.424)	(12.639)	(0.097)	(0.096)	(0.015)
GSP	-9.4080	-16.4680	-0.1299	0.1026	-0.0017
	(17.964)	(19.895)	(0.151)	(0.149)	(0.023)
Stu_Body	-0.0014**	-0.0037***	-0.0000	0.0000	0.0000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.3769*	0.5223**	-0.0009	0.0008	0.0005*
	(0.208)	(0.230)	(0.002)	(0.002)	(0.000)
Tour_Cham_BB	-1.2349	-4.5549*	-0.0069	-0.0041	-0.0002
	(2.290)	(2.533)	(0.019)	(0.019)	(0.003)
Conf_Cham_BB	3.2098*	4.2544**	0.0135	0.0106	0.0034
	(1.934)	(2.140)	(0.016)	(0.016)	(0.003)
Tour_Game_BB	0.9818	1.6019	0.0007	-0.0155**	-0.0013
	(0.951)	(1.053)	(0.008)	(0.008)	(0.001)
Constant	2.3472	132.7427	2.7438	1.4476	0.2233
	(226.752)	(251.076)	(1.909)	(1.889)	(0.297)
Observations	744	742	730	730	730
R-squared	0.029	0.071	0.008	0.045	0.017
Number of UnitID	129	129	129	129	129
Prob > F	0.0114	1.44e-07	0.705	0.000300	0.187

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.20. Quality: Basketball Only Schools – Ranked Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	26.3828	16.3909	-0.0279	-0.3718**	0.0139
	(16.502)	(13.465)	(0.086)	(0.174)	(0.029)
GSP	38.5196	12.3890	-0.2317	0.0672	0.0911
	(32.745)	(26.719)	(0.170)	(0.344)	(0.056)
Stu_Body	0.0016	0.0002	-0.0000	0.0000	0.0000***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.0994	0.1488	-0.0012	-0.0010	0.0010*
	(0.355)	(0.290)	(0.002)	(0.004)	(0.001)
Tour_Cham_BB	2.5835	-2.6420	0.0114	-0.0253	0.0008
	(3.746)	(3.057)	(0.019)	(0.039)	(0.006)
Conf_Cham_BB	-2.8793	-2.1700	0.0000	0.0274	0.0091*
	(2.989)	(2.439)	(0.015)	(0.031)	(0.005)
Tour_Game_BB	-1.0573	1.1304	-0.0069	-0.0265	-0.0027
	(1.552)	(1.266)	(0.008)	(0.016)	(0.003)
Constant	-518.2236	-143.9187	3.1343	1.8212	-1.1301*
	(394.335)	(321.766)	(2.060)	(4.161)	(0.682)
Observations	300	300	291	291	291
R-squared	0.025	0.016	0.023	0.055	0.099
Number of UnitID	38	38	38	38	38
Prob > F	0.495	0.753	0.575	0.0500	0.000537

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.21. Quality: Basketball Only Schools – Unranked Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	20.7940**	25.4121**	0.1424**	-0.0549*	-0.0018
	(9.136)	(10.419)	(0.071)	(0.033)	(0.008)
GSP	-2.4861	1.9255	-0.0563	0.1569***	0.0156
	(13.569)	(15.465)	(0.105)	(0.049)	(0.012)
Stu_Body	0.0015***	0.0008*	-0.0000	0.0000***	0.0000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	0.2463	0.4241**	0.0003	0.0008	0.0002
	(0.178)	(0.203)	(0.001)	(0.001)	(0.000)
Tour_Cham_BB	-1.2906	-0.3014	-0.0061	0.0070	0.0010
	(1.882)	(2.148)	(0.015)	(0.007)	(0.002)
Conf_Cham_BB	2.4362	2.6122	0.0165	0.0067	0.0008
	(1.596)	(1.829)	(0.012)	(0.006)	(0.001)
Tour_Game_BB	0.5504	0.5266	0.0033	-0.0042	-0.0011
	(0.931)	(1.061)	(0.007)	(0.003)	(0.001)
Constant	-72.7312	-114.3500	0.4558	-1.1524*	-0.1464
	(169.360)	(193.056)	(1.317)	(0.612)	(0.146)
Observations	1,457	1,450	1,438	1,438	1,438
R-squared	0.026	0.014	0.006	0.028	0.007
Number of UnitID	195	195	193	193	193
Prob > F	2.84e-05	0.0158	0.338	9.34e-06	0.274

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.22. Quality: Combined Basketball and Football Effects – All Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	-21.8183**	-13.0698	0.0993	0.0044	0.0246**
	(9.530)	(9.773)	(0.072)	(0.047)	(0.012)
GSP	-19.7428	2.1157	-0.2255**	0.1488**	0.0525***
	(14.127)	(14.485)	(0.107)	(0.070)	(0.018)
Stu_Body	-0.0004	-0.0012***	-0.0000	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.4862**	-0.3937*	0.0037**	0.0005	-0.0000
	(0.224)	(0.230)	(0.002)	(0.001)	(0.000)
Tour_Cham_BB	-0.7997	0.9492	-0.0338**	-0.0256***	-0.0004
	(1.893)	(1.942)	(0.014)	(0.009)	(0.002)
Conf_Cham_BB	0.1018	0.3919	0.0322**	-0.0042	0.0027
	(1.718)	(1.768)	(0.013)	(0.009)	(0.002)
Tour_Game_BB	0.1880	0.1949	0.0062	0.0026	-0.0003
	(0.549)	(0.563)	(0.004)	(0.003)	(0.001)
Nat_Cham_BB	9.1142*	9.5692*	-0.0203	0.0276	0.0029
	(5.460)	(5.598)	(0.043)	(0.028)	(0.007)
Nat_Cham_FB	5.7757	9.8246**	0.0290	0.0047	-0.0099**
	(3.793)	(3.894)	(0.028)	(0.019)	(0.005)
Conf_Stan_FB	0.5850**	0.5170**	0.0013	-0.0048***	-0.0009***
	(0.253)	(0.260)	(0.002)	(0.001)	(0.000)
Conf_Cham_FB	3.6985**	2.6782	-0.0033	-0.0184**	-0.0039*
	(1.793)	(1.839)	(0.014)	(0.009)	(0.002)
Constant	405.7606**	159.5156	2.4946*	-1.4740*	-0.7197***
	(173.516)	(177.923)	(1.311)	(0.854)	(0.220)
Observations	1,103	1,101	1,082	1,082	1,082
R-squared	0.031	0.042	0.023	0.057	0.058
Number of UnitID	124	124	124	124	124
Prob > F	0.00119	1.79e-05	0.0205	5.92e-08	3.27e-08

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.23. Quality: Combined Basketball and Football Effects – Public Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	-18.1050**	-11.2530	0.1246	-0.0372	0.0277**
	(8.320)	(9.861)	(0.087)	(0.043)	(0.013)
GSP	-29.6575**	-16.0074	-0.2519*	0.1557**	0.0464**
	(12.413)	(14.711)	(0.130)	(0.064)	(0.019)
Stu_Body	-0.0008***	-0.0014***	-0.0000	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.4698**	-0.3886	0.0041*	0.0005	0.0001
	(0.202)	(0.240)	(0.002)	(0.001)	(0.000)
Tour_Cham_BB	0.5047	1.4602	-0.0317*	-0.0058	0.0016
	(1.643)	(1.948)	(0.017)	(0.008)	(0.002)
Conf_Cham_BB	0.8699	1.8310	0.0388**	0.0043	0.0020
	(1.445)	(1.719)	(0.015)	(0.007)	(0.002)
Tour_Game_BB	-0.2601	-0.1527	0.0063	0.0006	-0.0004
	(0.467)	(0.554)	(0.005)	(0.002)	(0.001)
Nat_Cham_BB	3.0672	2.3008	-0.0202	-0.0037	0.0023
	(4.546)	(5.387)	(0.050)	(0.025)	(0.007)
Nat_Cham_FB	5.6724*	9.9781***	0.0168	0.0114	-0.0042
	(3.136)	(3.722)	(0.032)	(0.016)	(0.005)
Conf_Stan_FB	0.4572**	0.4358*	0.0016	-0.0039***	-0.0005
	(0.221)	(0.262)	(0.002)	(0.001)	(0.000)
Conf_Cham_FB	1.3356	1.0790	0.0041	-0.0028	-0.0017
	(1.575)	(1.867)	(0.016)	(0.008)	(0.002)
Constant	492.6969***	346.5973*	2.6796*	-1.3470*	-0.6662***
	(153.237)	(181.606)	(1.599)	(0.790)	(0.232)
Observations	898	896	882	882	882
R-squared	0.044	0.056	0.025	0.065	0.042
Number of UnitID	117	117	117	117	117
Prob > F	0.000280	6.68e-06	0.0550	3.68e-07	0.000662

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.24. Quality: Combined Basketball and Football Effects – Private Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	-33.6075	-33.7963	-0.0743	0.2433	0.0367
	(24.718)	(26.005)	(0.130)	(0.213)	(0.033)
GSP	36.6853	69.5691	-0.1686	-0.1831	-0.0373
	(41.287)	(43.435)	(0.216)	(0.355)	(0.054)
Stu_Body	0.0015	-0.0009	0.0000	0.0000	0.0000***
	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.7495	-0.6282	0.0005	0.0021	-0.0005
	(0.478)	(0.502)	(0.003)	(0.004)	(0.001)
Tour_Cham_BB	-4.1272	-1.2954	-0.0430*	-0.1315***	-0.0111*
	(4.551)	(4.788)	(0.024)	(0.039)	(0.006)
Conf_Cham_BB	-4.4379	-6.7416	-0.0098	-0.0728*	-0.0014
	(4.660)	(4.902)	(0.024)	(0.040)	(0.006)
Tour_Game_BB	1.1689	1.3208	0.0064	0.0039	-0.0024
	(1.509)	(1.588)	(0.008)	(0.013)	(0.002)
Nat_Cham_BB	1.8443	5.9519	-0.0287	0.1964	0.0132
	(16.119)	(16.958)	(0.083)	(0.137)	(0.021)
Nat_Cham_FB	-3.9437	-3.9811	0.0876	-0.0318	-0.0289**
	(10.576)	(11.126)	(0.055)	(0.090)	(0.014)
Conf_Stan_FB	0.3353	0.4573	-0.0030	-0.0090*	-0.0011
	(0.615)	(0.647)	(0.003)	(0.005)	(0.001)
Conf_Cham_FB	7.1915*	7.8541*	-0.0226	-0.0870**	-0.0128**
	(4.146)	(4.362)	(0.021)	(0.035)	(0.005)
Constant	-128.2229	-431.8096	2.6639	0.6038	0.0717
	(481.043)	(506.075)	(2.511)	(4.125)	(0.630)
Observations	205	205	200	200	200
R-squared	0.093	0.091	0.065	0.207	0.245
Number of UnitID	48	48	48	48	48
Prob > F	0.199	0.216	0.550	0.000404	2.60e-05

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.25. Quality: Combined Basketball and Football Effects – Ranked Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	-39.0000**	-36.9404**	0.1497	0.1114	0.0251
	(15.588)	(14.441)	(0.115)	(0.086)	(0.023)
GSP	-52.0587**	-27.7438	-0.0631	0.1111	0.0579
	(23.649)	(21.910)	(0.175)	(0.130)	(0.035)
Stu_Body	-0.0017***	-0.0018***	-0.0000***	0.0000***	0.0000***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.3329	-0.2970	0.0045*	0.0006	0.0001
	(0.325)	(0.301)	(0.002)	(0.002)	(0.000)
Tour_Cham_BB	2.7676	3.6699	-0.0128	-0.0478***	-0.0077*
	(2.870)	(2.659)	(0.021)	(0.016)	(0.004)
Conf_Cham_BB	-0.2601	-2.1297	0.0065	-0.0162	0.0067
	(2.771)	(2.568)	(0.021)	(0.015)	(0.004)
Tour_Game_BB	0.4081	0.2735	0.0112**	0.0054	-0.0005
	(0.709)	(0.657)	(0.005)	(0.004)	(0.001)
Nat_Cham_BB	12.1404*	13.3541**	-0.0240	0.0295	0.0031
	(6.367)	(5.899)	(0.047)	(0.035)	(0.009)
Nat_Cham_FB	8.6887	6.6003	0.0222	0.0233	-0.0169**
	(5.341)	(4.948)	(0.039)	(0.029)	(0.008)
Conf_Stan_FB	0.7232*	0.1783	0.0011	-0.0042**	-0.0018***
	(0.381)	(0.353)	(0.003)	(0.002)	(0.001)
Conf_Cham_FB	4.7921*	3.3983	0.0077	-0.0340**	-0.0064
	(2.753)	(2.551)	(0.020)	(0.015)	(0.004)
Constant	903.2503***	653.4442**	0.6059	-1.9659	-0.9071**
	(290.664)	(269.289)	(2.151)	(1.597)	(0.431)
Observations	487	487	476	476	476
R-squared	0.079	0.074	0.039	0.126	0.192
Number of UnitID	53	53	53	53	53
Prob > F	0.000239	0.000547	0.123	5.19e-08	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.26. Quality: Combined Basketball and Football Effects – Unranked Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	-9.7015	1.9898	0.0987	-0.0836	0.0107
	(12.092)	(13.350)	(0.092)	(0.051)	(0.011)
GSP	0.1625	21.7213	-0.3148**	0.1500**	0.0463***
	(17.666)	(19.502)	(0.135)	(0.075)	(0.016)
Stu_Body	-0.0001	-0.0010***	0.0000	0.0000***	0.0000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.6144**	-0.4529	0.0034	0.0004	-0.0002
	(0.311)	(0.344)	(0.002)	(0.001)	(0.000)
Tour_Cham_BB	-3.1929	-1.6215	-0.0443**	-0.0091	0.0031
	(2.639)	(2.915)	(0.020)	(0.011)	(0.002)
Conf_Cham_BB	0.6800	2.4771	0.0522***	0.0011	-0.0008
	(2.203)	(2.447)	(0.017)	(0.009)	(0.002)
Tour_Game_BB	-0.1316	0.3896	-0.0002	-0.0009	0.0003
	(0.954)	(1.054)	(0.007)	(0.004)	(0.001)
Nat_Cham_BB	-4.4588	-6.7286	-0.1282	0.0621	0.0110
	(11.606)	(12.814)	(0.123)	(0.068)	(0.015)
Nat_Cham_FB	5.2119	16.4489***	0.0507	-0.0331	-0.0121**
	(5.680)	(6.294)	(0.043)	(0.024)	(0.005)
Conf_Stan_FB	0.4027	0.7691**	0.0015	-0.0051***	-0.0002
	(0.339)	(0.375)	(0.003)	(0.001)	(0.000)
Conf_Cham_FB	2.6918	2.9941	-0.0085	-0.0073	-0.0015
	(2.405)	(2.657)	(0.018)	(0.010)	(0.002)
Constant	103.5849	-151.5130	3.4671**	-0.9482	-0.5446***
	(216.738)	(239.251)	(1.655)	(0.916)	(0.201)
Observations	616	614	606	606	606
R-squared	0.018	0.046	0.048	0.057	0.040
Number of UnitID	71	71	71	71	71
Prob > F	0.537	0.00911	0.00698	0.00117	0.0280

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.27. Quality: Combined Basketball and Football Effects – Power 5 Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	-8.7848	-6.9437	0.1588	0.0160	0.0409**
	(13.065)	(13.756)	(0.102)	(0.075)	(0.018)
GSP	-21.0073	-9.9934	-0.0972	0.0981	0.0194
	(20.396)	(21.476)	(0.159)	(0.117)	(0.029)
Stu_Body	-0.0008**	-0.0015***	-0.0000***	0.0000***	0.0000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.2538	-0.1712	0.0026	0.0008	-0.0002
	(0.299)	(0.315)	(0.002)	(0.002)	(0.000)
Tour_Cham_BB	2.4118	3.0363	-0.0021	-0.0287*	-0.0021
	(2.723)	(2.868)	(0.021)	(0.016)	(0.004)
Conf_Cham_BB	0.7476	-0.8622	0.0011	-0.0161	0.0041
	(2.558)	(2.696)	(0.020)	(0.015)	(0.004)
Tour_Game_BB	-0.1072	-0.1810	0.0091*	0.0026	-0.0008
	(0.662)	(0.697)	(0.005)	(0.004)	(0.001)
Nat_Cham_BB	10.5640*	10.6569	-0.0301	0.0336	0.0021
	(6.262)	(6.594)	(0.049)	(0.036)	(0.009)
Nat_Cham_FB	8.4203*	9.9789**	0.0170	0.0102	-0.0095
	(4.482)	(4.726)	(0.035)	(0.026)	(0.006)
Conf_Stan_FB	0.8304**	0.3843	0.0004	-0.0060***	-0.0018***
	(0.360)	(0.379)	(0.003)	(0.002)	(0.001)
Conf_Cham_FB	3.1137	1.5368	0.0113	-0.0143	-0.0075**
	(2.656)	(2.798)	(0.021)	(0.015)	(0.004)
Constant	354.6149	265.8324	0.9335	-1.1035	-0.5026
	(247.643)	(260.763)	(1.932)	(1.421)	(0.348)
Observations	535	534	527	527	527
R-squared	0.041	0.047	0.036	0.097	0.157
Number of UnitID	62	62	62	62	62
Prob > F	0.0492	0.0219	0.120	2.37e-06	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.28. Quality: Combined Basketball and Football Effects – Non-Power 5 Universities

VARIABLES	(1) Qual_25th	(2) Qual_75th	(3) In_St_Enr	(4) Out_St_Enr	(5) For_Enr
Pop_1619	-30.2696**	-13.5811	0.0845	-0.0255	0.0129
	(13.842)	(13.736)	(0.102)	(0.056)	(0.015)
GSP	-21.0141	11.3076	-0.2879**	0.1392*	0.0867***
	(19.529)	(19.375)	(0.143)	(0.080)	(0.021)
Stu_Body	-0.0001	-0.0008*	0.0000***	0.0000	-0.0000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Conf_Stan_BB	-0.5838*	-0.4530	0.0055**	0.0004	-0.0000
	(0.332)	(0.330)	(0.002)	(0.001)	(0.000)
Tour_Cham_BB	-4.1408	-2.1802	-0.0522***	-0.0264**	-0.0002
	(2.655)	(2.634)	(0.019)	(0.011)	(0.003)
Conf_Cham_BB	-0.8135	0.6695	0.0591***	0.0034	0.0013
	(2.305)	(2.300)	(0.017)	(0.009)	(0.003)
Tour_Game_BB	1.2277	1.6504	-0.0022	0.0054	0.0004
	(1.010)	(1.003)	(0.007)	(0.004)	(0.001)
Nat_Cham_BB	5.5414	8.9646	0.0830	0.0017	0.0027
	(10.394)	(10.312)	(0.093)	(0.051)	(0.014)
Nat_Cham_FB	-1.1486	8.5612	0.0555	-0.0394	-0.0115
	(7.397)	(7.339)	(0.054)	(0.030)	(0.008)
Conf_Stan_FB	0.2876	0.6153*	0.0020	-0.0048***	-0.0002
	(0.354)	(0.352)	(0.003)	(0.001)	(0.000)
Conf_Cham_FB	2.1831	2.2870	-0.0166	-0.0235**	0.0003
	(2.506)	(2.486)	(0.018)	(0.010)	(0.003)
Constant	458.5181*	49.9174	3.0801*	-1.0808	-0.9728***
	(243.701)	(241.772)	(1.786)	(0.991)	(0.265)
Observations	568	567	555	555	555
R-squared	0.032	0.042	0.079	0.047	0.046
Number of UnitID	69	69	69	69	69
Prob > F	0.150	0.0334	4.70e-05	0.0162	0.0215

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A.29. Summary Statistics

VARIABLES	Description	*n* =	Mean	Std. Dev.	Minimum	Maximum
Num_App	ln(# of applications)	3,763	9.078	0.836	5.974	11.368
Num_Adm	ln(# of admitted students)	3,763	8.537	0.767	5.799	10.493
Num_Enr	ln(# of enrolled students)	3,763	7.502	0.745	4.753	9.291
Qual_25th	25th Percentile Test Score	3,894	49.394	22.579	3.5	97.0
Qual_75th	75th Percentile Test Score	3,885	75.392	22.222	24.49	99.60
In_St_Enr	In-state enrollees	2,955	0.642	0.277	0	0.998
Out_St_Enr	Out-of-state enrollees	2,955	0.301	0.248	0	0.984
For_Enr	Foreign enrollees	2,955	0.024	0.029	0	0.219
Stu_Body	Total undergraduate population	3,880	12,720	8999	0	59,382
Pop_1619	ln(population in thousands aged 16-19)	3,053	6.015	0.941	2.996	7.706
GSP	ln(per capita gross state product)	3,053	10.763	0.215	10.336	12.048
Conf_Stan_BB	Lagged basketball conference standing	3,053	5.339	3.253	0	16
Conf_Cham_BB	Lagged basketball conference champion	3,053	0.130	0.337	0	1
Tour_Game_BB	Lagged basketball tournament games played	3.517	0.372	0.954	0	6
Tour_Cham_BB	Lagged basketball conference tournament champion	3,053	0.089	0.285	0	1
Nat_Cham_BB	Lagged basketball national champion	3,053	0.003	0.057	0	1
Conf_Stan_FB	Lagged football conference standing	1,168	4.252	2.538	0	11
Conf_Cham_FB	Lagged football conference champion	1,168	0.109	0.311	0	1
Nat_Cham_FB	Lagged football national champion	1,168	0.017	0.130	0	1

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