Relationships Between Athletic Success and Applications

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Abstract
This study was conducted to see what relationship exists between markers of athletic success of NCAA Division I FBS football teams and college applications. There have been multiple studies in the past that have proven this theory to be correct. However, the goal of this study was to understand if these same results can be seen with members outside of the power five conferences. Using systematic sampling, 31 members of the MWC, Conference-USA, MAC, Sun Belt, and AAC were chosen for this study. The data was collected over a 3-year period from 2012-2014 for all athletic success variables, which were then examined with total applications and the change in applications from year to year to see what relationships exists. The application variables were collected for the 2015 and 2016 academic year to create a two-year lag time.

The results of this study showed that, collectively, there are some athletic success variables that correlate with an increase in applications. However, alone, none of the variables showed a statistically significant relationship in the change in applications. Additionally, some of the results contradicted past findings. The study found that participants in this study are less likely to have successful upsets of superior opponents, do not as often play on big stages, play in important games, or attend post-season bowl games. This research had practical application because it is important for members of budgeting boards at institutions to understand how successful athletic programs may alter their bottom line. They can then use this information to allocate funding effectively.

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Relationships Between Athletic Success and College Applications

Timothy Grover Jr.

St. John Fisher College
Executive Summary

This study was conducted to see what relationship exists between markers of athletic success of NCAA Division I FBS football teams and college applications. There have been multiple studies in the past that have proven this theory to be correct. However, the goal of this study was to understand if these same results can be seen with members outside of the power five conferences. Using systematic sampling, 31 members of the MWC, Conference-USA, MAC, Sun Belt, and AAC were chosen for this study. The data was collected over a 3-year period from 2012-2014 for all athletic success variables, which were then examined with total applications and the change in applications from year to year to see what relationships exists. The application variables were collected for the 2015 and 2016 academic year to create a two-year lag time.

The results of this study showed that, collectively, there are some athletic success variables that correlate with an increase in applications. However, alone, none of the variables showed a statistically significant relationship in the change in applications. Additionally, some of the results contradicted past findings. The study found that participants in this study are less likely to have successful upsets of superior opponents, do not as often play on big stages, play in important games, or attend post-season bowl games. This research had practical application because it is important for members of budgeting boards at institutions to understand how successful athletic programs may alter their bottom line. They can then use this information to allocate funding effectively.
Introduction

The “Flutie Effect” is a phenomenon that has been studied in many different aspects since it was first presented by McCormick and Tinsley in 1987. The heroics on the football field of Doug Flutie on November 23th, 1984 to beat the defending Division I Football Bowl Series (FBS) National Champion Miami Hurricanes sparked the debate if college applications are affected by athletic success. The theory that on-field success improves an institutions fiscal well-being and increases incoming freshman applications within admission offices has been researched thoroughly (Chung, 2013; Mixon Jr, Trevino, & Minto, 2004; and Perez, 2012). In light of these studies, there has not been much in-depth analysis conducted on whether or not the results of these studies can be generalized to members outside of the power five conferences within the National Collegiate Athletic Association (NCAA) Division I FBS. Prior researchers have tried to correlate success on the field with variables such as applications, SAT Scores, and out-of-state applications, only to arrive at different conclusions.

Whether you agree with one conclusion over another, it is safe to say that athletic departments can be seen as the “front porch” to the university as a whole (Shulman & Bowen, 2001) and is often the driving force in which university a student attends. The purpose of this study was to determine what relationships exists between success on the field and applications at the Division I level. The research question of this study was:

What relationships exists between markers of athletic success of NCAA D-I FBS football teams and college applications?

The aim of this research was to present a deeper understanding of how on-field success translates into the rise in applications. This research had practical application because it is
important for members of budgeting boards at institutions to understand how successful athletic programs may alter their bottom line. They can then use this information to allocate funding effectively.

Background Information

Athletics Role in College Enrollment

To understand the “Flutie effect” better, it is imperative to understand the role that athletics play in enrollment. The first intercollegiate athletic competition was a student organized rowing competition between Yale and Harvard in 1852 and had its own exclusive sponsorship as the Boston, Concord & Montreal Railroad Company was the official transportation sponsor. Fast forward to today, the National Collegiate Athletic Association blossomed into a billion-dollar industry (ASHE Higher Education Report, 2015). Athletics departments are seen as a “front porch” to the university. Athletics are sometimes the main reason that a student steps foot on campus to begin with. Whether the student is local, an out-of-state student, or a transfer student, athletics may be the driving force in your decision in which school you ultimately attend or transfer to. We have preinstalled brain associations with these athletic brands. When you hear “Roll Tide”, you immediately think of the University of Alabama. When you think of blue football turf, Boise State comes to mind. Last but not least, when you see a T-shirt that says, “Cameron Crazies”, Duke Basketball fans along with their legendary Cameron Indoor Basketball Facility come to mind (A History of Intercollegiate Athletics and the NCAA, 2015). These are all associations we make that link athletic departments directly to the institution. Bringing back the assertion that athletics serves as a “front porch” to a university.
According to www.NCAA.org, there are more than 460,000 National Collegiate Athletic Association student-athletes. The NCAA is split into three divisions (I, II, III). Division I is broken down by football sponsorship. If an institution competes in bowl games, they're in the Football Bowl Subdivision (FBS). If they compete in the NCAA-run football championship, the institution is in the Football Championship Subdivision (FCS). The last group in Division I does not participate in football and all their other sports are considered Division I. Division I has nearly 350 schools that field more than 6,000 athletic teams and have more than 170,000 student athletes. Division I also generates the most revenue large in part to their lucrative television contracts. In the 1980’s NCAA received between $30 million and $40 million combined between ESPN and CBS for television rights for the NCAA Division I Men's Basketball Tournament. In 1989, CBS and the NCAA agreed to an exclusive TV deal for $1 Billion for the next 7 years. More recently, in April of 2016, CBS and Turner, a division of Time Warner Cable, signed an eight-year extension through 2022 to broadcast all NCAA D-I Men's Basketball Tournament games. The deal was worth $8.8 Billion. Division I FBS is a little bit different with their television contracts. Each individual conference has a provider of all the games of the team within the conference. For example, The Atlantic Coast Conference (ACC) has a deal with ESPN worth $3.6 billion through 2026-2027. Division II has roughly 300 member institutions and provides thousands of student-athletes the opportunities to earn athletic scholarships. Division III is the largest of the three divisions in college athletics both in number or schools and number of student-athletes. While having over 450 schools, the number of student-athlete participation is over 180,000. With a focus on academics, time allowed on the court or field is reduced and schools that participate in Division III cannot distribute athletic scholarships. To combat this, institutions award students with merit scholarships,
alumni donations, and financial aid to help with the financial burden of tuition to the athletes that apply (NCAA.org).

The “Flutie Effect”

The “Flutie Effect” is a phenomenon that success in athletics will translate into more incoming freshman applications for the following academic year, more alumni contribution through donations, and improve overall fiscal well-being for an institution. The phrase was brought about after Doug Flutie, the undersized Boston College Quarterback, completed a Hail-Mary pass in the 1984 Orange Bowl against the defending National Champion Miami Hurricanes in the closing seconds to win the game. Later, Flutie went on to win the Heisman Trophy capping off a 10-2 regular season and a college career that saw 3 bowl games in 4 years which propelled him to a up and down professional career in the Canadian Football League (CFL) and National Football League (NFL). Because of this, Boston College saw an increase in applications of 30% in two years (Johnson, 2006).

Murphy and Trandel (1994), and McCormick and Tinsley (1987) both suggested that there is a positive relationship between success on the field and an increase in the number of applications for an institution. Moreover, Murphy and Trandel (1994) narrowed their study to 55 D-I FBS football programs across the, at the time the article was published, Power Six conferences- the ACC, Big 8, Big 10, Pacific 10, SEC, Southwest. They concluded that if a school improves its winning percentage by 0.250 (for example, going from a 0.500 to 0.750), the number of incoming applications the following year raises by 1.3%. On the other hand, McCormick and Tinsley (1987) studied the incoming freshman SAT scores at 150 schools, 63 of which were big-time athletic schools within the ACC, SWC, SEC, Big 10, Big 8, PAC 10, or a major independent. The study
concluded that the incoming freshman application pool had grown allowing institutions to be more selective in their acceptance process. In other words, the thought of winning on the field attracting better students was not shown in their study, but the school itself accepting more qualified students was prominent. In their findings, North Carolina State University had received a 40% increase in applications in wake of its Men’s Basketball championship in 1983. Also, University of South Carolina, not at the time known for their football success, saw a 23% increase in 1985 following their best year in school history at that time. Interestingly enough, they also found that not only do schools that charge higher tuition prices have better performing students, but also, schools that pay their faculty more attract better performing students as well.

Relative to what McCormick and Tinsley (1987), and Murphy and Trandel (1994) have proposed in the early studies of the “Flutie Effect”, Mixon Jr, Trevino, & Minto (2004) and Chung (2013) conducted their own research that found similar results years after the initial studies on the “Flutie Effect”. Chung (2013) found that mediocre schools see an increase in incoming student applications when they have a higher level of athletic success with most applicants coming from lower level students. For a non-athletically successful school to see the same amount of increases, the institution must decrease their tuition by 3.8% or attract better faculty who would be paid 5.1% more on the academic labor market. As far as the athletically mediocre schools that have flipped the script and done well that saw an increase in incoming applications, look no further than Boise State. Boise State applications rose 18% after the 2006-2007 season with their upset win over powerhouse University of Oklahoma in the 2007 Fiesta Bowl. Another example, Northwestern University experienced a 21% increase in applications in 1996 after winning the Big Ten Championship in Football. Also, Texas Christian University (TCU) ranked top 25 in the AP rankings for the first time in 40 years in 2000 and have frequently been in the top 25 over the past
decade enjoying many national televised games, saw a 105% increase in applicants from 2000 to 2008 (Chung, 2013). Similarly, Oregon State University’s admissions director reported that out-of-state applications rose 20% following the school’s Fiesta Bowl football victory over Notre Dame in 2001 (Mixon Jr, Trevino, & Minto 2004). Finally, it cannot be forgotten when Appalachian State successfully completed their regular season upset over #5 ranked Michigan in 2007. There was a 24.42% increase of applications at Appalachian State University following the back to back FCS Championship Titles and an upset the following year over FBS #5 ranked Michigan Wolverines. Another contributing factor was the recent success of their Men’s Basketball team making it to the NIT Tournament. More specifically, in 1997 Appalachian State University had 7,867 incoming applications. In 2006 and 2007, the years following their first and second FCS National Championship they had 11,039 and 12,931 respectively (Trivette, M).

**Cultural Context**

Even though presidential candidate Bernie Sanders didn’t get elected as the 45th president of the United States, he still left his mark on the nation with one idea. During his presidential campaign, the Vermont Senator proposed free college tuition to public colleges across the nation offering both two and four year degrees. New York State and Governor Cuomo chose to put this plan in action by offering a New York State Tuition Benefit. This makes the “Flutie Effect” just as relevant as it has ever been if not more so now. There is a fight for enrollment across all college campuses currently. Public schools are looking to boost application pools so that they can be more selective in their acceptance process. Schools then look better on paper selecting higher quality students, ultimately hoping that will then boost graduation rates. Institutions will also need to know precisely how much athletics affects their bottom lines so that they can make effective budget
decisions. This information can have an impact on faculty, programs offered, intramural programs, and all operations that fall under the scope of the college budget.

Methods

Utilizing secondary data for this quantitative study, the research question of this study was:

What relationship exists between markers of athletic success of NCAA D-I FBS football teams and college applications?

The purpose of this research was to see what relationship exists between NCAA D-I FBS football members of the Mountain West Conference, Conference USA, Mid-American Conference, Sun Belt Conference, and American Athletic Conference having success on the field and the amount of incoming freshman applications allowing a two-year lag time.

Sampling Method

With 128 schools that participate in NCAA D-I FBS football, the focus was narrowed to teams outside the power five conferences to see if there was a significant change from year to year in athletic success and incoming applications. A team like Alabama Football is probably not going to have a significant change in applications from year to year as they have been inside the AP ranking top 10 at the end of each season for the past decade since Head Coach Nick Saban took over the program. In addition, members of the power five conferences were left out because generally the same teams make it to bowl games and the College Football Playoff since it was reconfigured and implemented at the beginning of the 2014 FBS College Football season. Also, those teams in the power five conferences naturally have their games televised more frequently.
than the schools that have been chosen. With that being considered, data collected on teams outside the power five conferences with intent to see more variation. The schools chosen for the study are members of the following five conferences: Mountain West Conference (MWC), Conference USA (Conf-USA), Mid-American Conference (MAC), Sun Belt Conference, and American Athletic Conference (AAC). In total these five conferences have 62 FBS teams.

**Sampling Procedure**

As mentioned before, exclusions were applied to the teams that had bowl games but were members of the power five conferences, ACC, SEC, PAC-12, Big 10, Big 12. Then, the teams that did have a bowl game in the 2015 or 2016 season were tallied based on which conference they represented. The five conferences that were most represented in these bowl games over the past two years were the MWC, Conference-USA, MAC, Sun Belt Conference, and AAC. Within these five conferences, stratified- random sampling was conducted to reduce the sample size from 62 institutions down to 31. The two members were left out of the study were Air Force and Navy because there are far more factors that go into a student attending those institutions than your typical college campus. However, with excluding those two schools dropping each of their respective conferences from 12 to 11 members, six were still selected from each to keep a strong representation of at least 50% from each conference. Therefore, when all the members of the prior mentioned five conferences were listed out in alphabetical order, a random number generator was used to pick the schools within the conference (random.org). For example, if there are 14 members of the conference, the maximum number was 14 and a number between 1 and 14 would be chosen randomly. The school that corresponded with the number was then selected.
Data Collection Procedure

Once the teams were narrowed from 62 to 31, each school’s institutional data was collected through the Integrated Postsecondary Educational Data System (IPEDS) to gather the number of incoming freshman applications following the years of athletic success specifically. In order to get all the information needed, a two-year lag-time was created so that the effect could be fully seen and understood. So, even though the conferences were picked based on recent success, this study will examine the teams from 2012 to 2014 in attempt to allow time for the two-year lag and still gather the correct institutional data. Variables that will be accounted for are: total number of applicants, change in applications from the prior year, win/loss percentage, the change in win percentage from the prior year, if the team is ranked top 25 in the AP polls at the end of the season, the number of nationally televised games, the number of successful upsets of a top 25 team, the number of NCAA Basketball Tournament games, and the number of basketball games in the National Invitation Tournament (NIT). Even though this is only a study of Division I FBS College Football, basketball tournament games played was acknowledged to understand other possible contributing factors to a change in incoming college applications. The information related to each variable with the exclusion of the schools application numbers, will be gathered from sports-reference.com., and the institution-specific athletics page on their school website.

Analysis

A regression will answer the research question because the study has been done before within the power five FBS Football Conferences. I am examining members outside the power five FBS Conferences to predict an outcome and to also see if there is a pattern in the data using multiple variables. More specifically, two regressions and an ANOVA for each school was ran.
The first regression was ran to examine all the independent variables listed above. The second regression factors in the change in application numbers allowing a two-year lag time. The application numbers were studied over five years, instead of three years like the independent variables, to see if these independent variables played a role in students applying to these institutions. Then, an ANOVA was ran for each of the schools where the continuous dependent variable is the application numbers and the continuous independent variable is the year. The ANOVA was ran to see if there was a relationship between athletic success and change in application numbers within the school from year to year. The predictor or independent variables are: win percentage, end of the year AP rank, the number of nationally televised games, the number of upset wins, the change in win percentage from the prior year, the number of NCAA Tournament basketball games, and the number of NIT basketball games. Lastly, the outcome or dependent variable was the application numbers at the studied schools.

Results

The Sample

The data collection process was primarily through 3 main online sources. First, for each of the institutions in the study, college application numbers were gathered through The Integrated Postsecondary Education Data System (https://nces.ed.gov/ipeds/). Secondly, the dependent variables studied were found through Sports-Reference (https://www.sports-reference.com/). Lastly, information regarding the number of nationally televised games for each of the schools in the study was gathered through the respective schools athletics page on the school website. The sample consisted of both public and private schools that had a range in applications from 2,800 to 36,000 which would represent every school in the population. Also, as outlined before, the number
of participants that were chosen for this study was 31. There was no deleted data as there were no limitations for the secondary data retrieval.

**Results**

For each of the following there were 93 inputs (n=93) meaning there was 31 participants studied over a three year time period. The mean total of applications was 14,613 with a standard deviation of 7,640. The mean win/loss record of all the participants in the study was .470 with a standard deviation of .221 and approximately 53% of the participants finishing below 0.500 in their regular seasons. The average change in win percentage from the prior year was 0.003 with a standard deviation of 0.203. The end of the season AP rank had a mean of 0.88 with a standard deviation of 4.25 and a frequency of only 4 out of 93 (n=4). The mean number of nationally televised games was 6.53 with a standard deviation of 3.192. The average upset of an AP ranked top 25 team was .09 with a standard deviation of 0.282 which was not represented by approximately 92% of the participants in the study with a frequency of 8 out of 93 (n=8). The average number of NCAA basketball Tournament games was 0.24 with a standard deviation of 0.758 which was not represented by 85% of the participants in the study with a frequency of 14 out of 93 (n=14). Lastly, the mean number of NIT Tournament games was 0.09 and a standard deviation of 0.545 which was not represented by 96% of the participants in the study with a frequency of only 4 (n=4).

With a Bonferroni-adjusted alpha of 0.0125, we can have 95% confidence that there is a relationship between markers of athletic success and the amount of incoming applications. The first regression, which shows if the predictor variables listed above had any significant relationship with the change in application numbers, is not significant with a P-value =0.469. The second
regression, which changes the dependent variable from applications to the change in application numbers from year to year, was also insignificant with a p-value =0.141. Lastly, two ANOVA’s were ran to determine if there was a change in applications on average with respect to the year and with respect to each college. Their p-values were 0.164 and 0.002 respectively. The ANOVA with respect to the college showed a significant relationship in the average change in applications in regards to the Bonferroni- adjusted alpha of 0.0125.

After further analysis in the Post Hoc Tests, there was significant difference in the change in applications on average for Florida Atlantic University compared to the other schools in the study. After further evaluation, nothing was found in the study that would have predicted this extreme change in the application numbers.

Discussion

The purpose of this study was to see what relationship exists between markers of athletic success of NCAA D-I FBS football teams and college applications. The findings of this study varied drastically and a pattern in the data could not be found. For all variables, all of the outcomes can be seen. Boise State, Colorado State, and Fresno State all had a win loss percentage of 0.769 or better and all saw an increase in total applications. Texas State had their lowest win percentage of the three years studied at 0.333 and saw an increase in applications in two years of almost 8,000. The same results can be found at Tulane where they had only won 25% of their games and saw an increase of over 3,000 applications. Also, at Cincinnati, their football win percentage stayed the same and their applicant pool increased by over 2,000 applications. As far as the change in win percentage, Boise State increased their win percentage 0.242 and saw their lowest increase in applications over the three years they were studied. The
University of Nevada, Las Vegas (UNLV) had the biggest increase in win percentage of all the institutions studied and also had their smallest increase in applications over three years. North Texas had an increase in win percentage of 0.359 but then saw a decrease in over 2,000 applications in their second year. This contradicted Murphy and Trandel (1994) which concluded that if a school improves its winning percentage by 0.250 (for example, going from a 0.500 to 0.750), the number of incoming applications the following year raises by 1.3%. However, Eastern Michigan had no change in win percentage in two out of the three years studied and in those two years saw an increase of over 4,000 applications.

Boise State had a study-best end of the season AP rank of 16 but saw their lowest increase in applications of the three years. But, Kent State barely snuck into the AP top 25 and saw an increase of over 2,000 applications. Louisiana-Lafayette went from 3 televised games to 12 the following year and saw an increase in over 2,300 applications. Troy on the other hand, had an increase of 2 nationally televised games and saw a decrease in applications. Bowling Green University had an upset of a top 25 team but also had a decrease in over 1,000 applications. On the other hand, East Carolina had an upset of a top 25 team and had an increase of almost 3,000 applicants. However, it is important to note that East Carolina’s upset win was in a Bowl Game which corresponds with the findings of Chung (2013). Again, Chung (2013) found that when Boise State upset powerhouse Oklahoma in the 2006-2007 Fiesta Bowl, their applications rose 18%. As far as NCAA Tournament games, the study had an outlier for this variable. The University of Connecticut won the National Championship and saw an increase of about 7,500 applicants which corresponds with the findings of McCormick and Tinsley (1987). In their findings, North Carolina State University had received a 40% increase in applications in wake of its Men’s Basketball championship in 1983. However, Middle Tennessee played a
NCAA Tournament game and sees a decrease in their applicant pool. It seems that it is not enough to go to the “Big Dance”, but to win when you get there to see similar results. Ohio University made the NIT Tournament and saw an increase in almost 3,400 applicants. On the other hand, Southern Methodist University played 5 games in the NIT Tournament, loses in the finals, and saw their smallest increase of their applicant pool over the three years studied in only 912 applicants.

To reiterate, the delimitations of this study was narrowing the focus to the members outside the power five Division I Football Bowl Subdivision conferences such as: Mountain West Conference (MWC), Conference USA (Conf-USA), Mid-American Conference (MAC), Sun Belt Conference, and American Athletic Conference (AAC). There were no limitations to the secondary data that was retrieved for the study, nor were there limitations for the design of the study. For future researchers, a recommendation of looking more into the institutions themselves could be made. For instance, one of the schools in the study had just introduced their football program the first year of the study. This could have been the reason why their applicant pool increased rather than the outcome of their first season. Another recommendation is to increase the amount of years in the study. Athletic success was only recorded for three years in this study. It may increase confidence when drawing a conclusion if the independent variables are measured for five years like the total applications were.

Conclusion

Although collectively these variables did not contribute to the rise in applications, independently, some are more significant than others. Even though all of these variables work together to answer my research question, there is no significant relationship between markers of athletic success and college applications of members outside the power five conferences. The
schools studied are also less likely to have successful upsets of superior opponents, do not as often play on big stages, play in important games, or attend post-season bowl games. Some of the characteristics that are known about the sample are that members outside the power five conferences in college football do not typically receive the same national spotlight treatment as the members in those power five do. Another characteristic about the sample is that although collegiate sport is so great because of the possibility of upsets, they do not happen as frequently as one might think in college football, and often, aren’t a featured game of the week due to a low probability of the underdog team completing the upset. Also in regards to this sample, the teams outside of the power five conferences aren’t typically top 25 AP ranked teams. This means that they are not drawing the national attention of college football fans outside of their own fan base or alumni of the institution. However, with this sample, a lot of variation in the change in win percentage from year to year was found. University administrators can now understand that success in athletics does effect enrollment. On the other hand, for members outside of the power five conferences in Division I FBS to see a significant increase, the institution needs to make a deep post-season run which includes winning big games to see similar results that Boston College saw following the Doug Flutie heroics in 1984.
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