UNIVERSITY FACTORS THAT AFFECT COLLEGIATE FOOTBALL RECRUITING

Charles L. Herzog

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Approved By:

Nels Popp

Edgar Shields

Coyte Cooper

ABSTRACT

Charles L. Herzog: University Factors that Affect Collegiate Football Recruiting
(Under the direction of Nels Popp)

In the world of college athletics, recruiting is the lifeblood of any program. Prior research has firmly established better recruiting can mean more success on the field (Caro, 2012; Herda et al., 2009; Langelett, 2003). Team success, particularly in the revenue sports of football and men's basketball, can lead to greater donations (Goff, 2000; Rhoads & Gerking, 2000; Tucker, 2004) and national notoriety (Caro, 2012) for a university and its athletics program. As such, the recruitment of elite high school football players is not only followed and scrutinized by rabid fan bases, but can have a major impact on entire athletic departments. Several researchers have examined the reasons why college sports recruits choose to attend particular institutions (Doyle & Gaeth, 1990; Huffman, 2011; Massey, 2013). The results of these studies have revealed a variety of factors influencing the college selection process for student-athletes, such as head coach, school location, level of competition, potential playing opportunities, and desired academic program (Gabert, Hale, & Montalvo, 1999). In addition to academic research on the topic, numerous college athletics administrators and coaches, media members, and even fans have made assumptions regarding what factors influence the college selection process of high school recruits. Several of them have publicly suggested things like winning, academics, successful recruiting, and professional alumni are persuasive to recruited student-athletes (Dienhart, 2003). While anecdotal evidence might suggest schools which draw capacity crowds,

have apparel contracts with particular companies, or produce more National Football League (NFL) players will land better recruits, little empirical evidence exists to support such claims.

Much of the prior academic research on the college selection process of student-athletes has adopted an approach of surveying current student-athletes in order to ascertain which factors were personally most salient to them. Such methodology is susceptible to social desirability bias (Winrow, Reitmaier-Koehler, & Winrow, 2015); a theory suggesting subjects will give researchers desired or politically correct responses. The purpose of the current study is to examine factors impacting the college selection process of student-athletes by developing a predictive regression model, using football recruiting rankings as the dependent variable, and university or athletic department related factors as the independent predictor variables. Such an approach will enable an empirical investigation into whether factors such as winning, athletic budget, and academic reputation have any relationship to the level of recruits enrolling at a particular university.

Specifically, the independent variables examined in this study included: (a) team performance, (b) university academic reputation, (c) prior recruiting success, (d) department budget, (e) apparel contracts, (f) alumni playing in the NFL, and (g) spectator attendance. Team performance was measured in several forms; previous season winning percentage, historical success measured as the lifetime win percentage of the program, and bowl game appearances and success. All team success data was collected from college football statistics websites. Academic reputation measures were derived from Forbes Magazine and The Center for College Affordability and Productivity rankings of academic reputation. Teams acquiring high-level players may attract other high-level talent. Thus, previous year recruiting rankings were utilized as a predictor variable for current recruiting rankings (recruiting ranking variables are explained

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below). It has been suggested overall athletic department budget positively impacts recruiting (Jessop, 2013). For the current study, budget figures were collected from the Equity in Athletics Database. Media accounts also suggest recruits can be influenced by the brand of apparel their program is contracted to provide (Sato, 2015). Apparel vendor contracts were obtained from the WinAD database and online news reports. NFL alumni are a very visible part of a program's success and a team being viewed as a "pipeline to the pros" might influence a recruit's decision, thus the number of alumni who play or have played in the NFL were collected from team and national media websites. Finally, attendance numbers were obtained from the NCAA's statistical database.

To conduct the study, three years of secondary data were collated from 118 Division-I FBS schools for each of the independent variables listed above. The dependent variable in the model was current recruiting ranking. This measure was also collected by averaging the recruiting ranking of three of the industry leading websites on college football recruiting: Scout.com, Rivals.com, and 247Sports.com.

To my family and friends, who have offered nothing but
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Introduction

Recruiting is the nexus of college football. Championships are won or lost, careers are made or ruined, and finances are black or red, depending upon the effectiveness of recruiting. Many parts make a team successful such as coaching, resources, and facilities, but those factors are not as potent without exceptional recruiting. There are many different philosophies about what works and what does not in recruiting. Many coaches would say it is more of an art than a science. That has not stopped researchers from trying to systematically discover exactly why a student-athlete chooses one school over another.

Much of the research on collegiate athletic recruiting has focused on the student-athlete perspective (Doyle & Gaeth, 1990; Gabert et al., 1999; Kraft & Dickerson, 1996; Letawsky, Schneider, Pedersen, & Palmer, 2003). That is, researchers have typically asked student-athletes why they chose to attend their school after they had already enrolled. Some of the most common responses given by student-athletes include academic reasons (Letawsky et al., 2003), relationship with the head coach (Gabert et al., 1999), and career development (Huffman, 2011). These responses might display some measure of social-desirability bias. In other words, the student-athlete may have given an answer they thought the researcher wanted to hear or a politically correct response.

One way to avoid social-desirability bias in athlete recruitment research would be to examine which factors have the ability to affect the quality of a recruiting class. Much has been

made in the high profile sport of college football about factors influencing school selection (Dienhart, 2003; Jessop, 2012; Sherman, 2012b), but no prior research has empirically or statistically examined the relationship between these factors and recruiting success. Some of the most discussed of these factors include school athletic tradition, academic reputation, playing time for the recruit, athletic facilities, and apparel contracts.

Statement of Purpose

The purpose of this study is to identify factors that affect the quality of a football recruiting class. Several sources predict level of recruit talent in college football ("247Sports.com," 2016; "ESPN.com Recruiting Nation- Football," 2016). However, no prior research has examined the relationship between quantifiable factors of NCAA Division I- FBS athletic departments and schools related to a national rankings football recruiting classes as determined from reputable college football recruiting services. Specifically, I seek to develop a statistical model to identify which factors affect the quality of a college football recruiting class.

Research Questions

RQ1: What is the relationship between attributes of universities and athletic departments and the quality of a football team's recruiting class?

RQ2: Are there statistically significant differences in the predictive ability of factors between student-athletes attending different levels of programs ("Power 5" and "Group of 5")?

Operational Definitions

College football recruiting services- any organization that publishes yearly rankings of NCAA Division I FBS recruiting classes

Recruiting class ranking- a composite average of the yearly rankings of the college football recruiting services (Rivals, Scout, and 247Sports)

Athletic department characteristics- the qualities of the institution's athletic department as a whole (NCAA violations, apparel affiliation, and level of competition, and department budget)

Institutional characteristics- factors of the institution as a whole (U.S. News and World Report ranking)

Team characteristics- factors of the football team (Win percentages, NFL alumni, previous recruiting class ranking, type of offense, and facilities)

Significance of Study

Much of the research on student-athlete recruiting focuses on self-identified factors among student-athletes. The responses collected in these studies may be tainted by social-desirability bias. The student-athletes may have given the researchers "preferred" or socially desirable answers during the study. This study will approach recruiting research from a predictive model utilizing secondary data to determine which quantifiable factors predict recruiting prowess. Using quantifiable factors of the university, athletic department, and football team, as well as, the recruiting class rankings; I will identify variance in the recruiting class rankings. By explaining this variance, I hope to determine which factors had an effect on the recruiting class quality.

CHAPTER 2: LITERATURE REVIEW

Recruiting and Team Success

College athletic departments are pouring enormous amounts of resources into recruiting (Caro, 2012). The traditional thinking is better recruits equal a greater chance of success (Herda et al., 2009). With the recent increase in coverage for collegiate football recruiting (Langelett, 2003), researchers have conducted studies to understand how much good recruiting is associated with on the field success (Caro, 2012; Herda et al., 2009; Langelett, 2003). Researchers have utilized various measures of success including: winning percentage, conference standings, end of season rankings, and revenue-generation (Bergman & Logan, 2014).

Many recruiting services rank football recruits using a system of stars from one to five (five stars being the highest). This ranking is determined by recruiting services based off players' observed athletic ability and potential to have an impact in college (Bergman & Logan, 2014). Recruiting services generally rank a program's class in two ways. Some take the total number of stars for the class divided by the number of recruits, while others have their own formula, which accounts for things like number of recruits, position need, and various other factors (Herda et al., 2009).

When examining the impact of recruiting on winning percentage, higher ranked recruits have been found to affect the number of wins a program can have in a season (Bergman & Logan, 2014). When controlled for school-specific factors, each five star recruit increases the number of wins by 0.306. The number of predicted additional wins decreases as the quality of the recruit decreases, with four star and three star recruits only adding 0.0623 and 0.0555 wins,

respectively. When the recruit is a two star, the number of wins is predicted to go down (-0.0103). Bergman and Logan hypothesized this may occur because a two-star recruit might displace a three, four, or five star recruit because of scholarship limits.

Conference standings have also been used as a measure of team success when measuring the impact of recruiting (Bergman & Logan, 2014). Since conference members play each other more than any other school and they tend to compete for the same recruits, the conference level is a good way to evaluate success among a program's closest peers. Once again, higher rated recruits tend to increase the number of conference wins. Conferences are very different from one another, with different levels of success. Caro (2012) found between 63% and 80% of the variance in the Big-12, SEC, and Big 10 team winning percentages within the conference could be attributed to recruiting success. There were no significant findings for the other three conferences: ACC, Big East, and Pac 10. Caro (2012) hypothesized the Big-12, SEC, and Big 10 conferences showed significant impact from recruiting because those conferences had dominant teams and long histories of winning, while the other conferences lacked a traditional power or had more parity throughout the conference. Herda et al. (2009) examined the impact of recruiting on end-of-season rankings; he found recruiting ranking explained between 11% and 45% of the variance for the end of season rankings. In other words, the higher the ranking of a team's recruits by the recruiting services, the higher that team's end of season rankings.

Higher ranked recruits have been shown to increase a program's chance of competing in a post-season bowl game (Bergman & Logan, 2014). With the bowl payouts and additional revenue of TV, football programs are under more pressure than ever to be profitable (Caro, 2012). Until they were recently replaced with the College Football Playoff, BCS bowl games offered the largest payout for schools. Five star recruits have been shown to increase a program's

chance to get to a BCS bowl game by .0428 (Bergman & Logan, 2014). A better chance to get

to a BCS game would mean more money for the school. This increased likelihood of an

appearance in a BCS game means a five star recruit is worth about $150,000 to a school. These

findings provided evidence a player's recruiting ranking has value to the university.

Recruiting success may be tied bi-directionally with team success (Langelett, 2003).

Teams that are successful in recruiting tend to be more successful on the field (Caro, 2012), and

because they are more successful on the field, the college becomes more successful in recruiting.

This leads to a negative-feedback loop which keeps the most successful programs at the top

(Langelett, 2003). Other studies show similar trends. Herda et al. (2009) found a program's end

of season rankings were a good predictor of the quality of the next year's recruiting class. The

research shows not only do better recruiting classes increase the quality of play on the field, but

also the indirect effects of success (student body graduation rates and university and athletic

charitable contributions) are improved by a better recruiting class due to the increased success of

the team (Caro, 2012). Having a successful football program has a positive impact on both the

graduation rate and alumni-giving rate (Goff, 2000; Rhoads & Gerking, 2000; Tucker, 2004). A

successful football program is thought to result in a more enjoyable college experience for the

general student, thus "more students are unlikely to leave school, devote more time to studying

and, therefore, the graduation rate rises" (Tucker, 2004, pp. 660-661).

Student-Athlete School Selection

Several researchers have demonstrated a connection between recruiting effectiveness and

team success in college football. In addition, some have suggested measures of team success do

indeed predict future recruiting effectiveness. Do other factors besides team success affect the

decision-making process of student-athletes? Numerous studies have investigated this precise

question, with varying results. In one study conducted at a large university, all student-athletes rated (a) degree-program options, (b) head coach, (c) academic support services, (d) community, and (e) sports traditions as the top five factors that influenced their college decision (Letawsky et al., 2003). These findings contrast the "big-time college athletics" logic, as two of the top three factors were related to academics and only two of the top five were related to athletics. Another study saw (a) college head coach, (b) location of school, (c) opportunity to play, (d) degree programs, and (e) academic support services as the top five most influential factors (Gabert et al., 1999). As can be seen from these two large studies, the motivations for attending certain colleges can vary widely depending on a number of factors, such as sport, gender, and level of competition.

   Sport.

   College sports vary in popularity, accessibility, and professional prospects. These variations may influence why student-athletes choose to compete collegiately in a particular sport. For example, relatively few NCAA Division I athletic departments sponsor ice hockey teams. In college hockey, the most influential factors affecting student-athletes' decision to attend had to do with playing time and player development (Schneider & Messenger, 2012). This might indicate that due to the lack of opportunities, collegiate ice hockey programs are concentrated with the very best talent, and that talent wants to play immediately and professionally. Lacrosse, on the other hand, is a sport that does not offer much opportunity to play professionally (Pauline, 2010). The most influential factors in choosing a school for collegiate lacrosse players were academic-related. Lacrosse student-athletes may realize they need to put their emphasis on academics in order to be successful. College baseball programs are different from most other collegiate sports. Due to Major League Baseball's draft rules, players

can turn professional immediately out of high school. Essentially, college baseball coaches are not only recruiting against other schools, they are also recruiting against professional baseball for the top talent. It should not come as too much of a surprise that scholarships would be a highly ranked factor among baseball players (Doyle & Gaeth, 1990; Harmon, 2009). College baseball programs are limited to 11.7 scholarships and can have no more than 27 on scholarship (NCAA, 2015). This means a college baseball student-athlete could receive anything from a twenty-five percent scholarship to a complete scholarship. This might be a deciding factor when a recruit needs to choose between two schools or playing professionally.

Basketball and football are revenue-producing sports. These sports tend to make money for the athletic department, especially at the higher levels of competition. College basketball programs need to be successful in order to keep the revenue production going. Recruiting is an important part of attaining that success (Treme, Burrus, & Sherrick, 2011). Men's basketball recruits identified coaches' commitment to the program, player-coach relations, team's style of play, scholarship money, and assistant coaches as the most influential factors when choosing a school (Cooper, 1996). In another study, the personality and philosophy of the head coach, a focus on player development, academic reputation, and fan support were all identified as very important factors in college selection (Glasby, 2014).

In football, the other revenue producing sport, coaches are predominately judged by their success on the field. Recruiting is an important piece to achieving that success (Bergman & Logan, 2014; Caro, 2012; Langelett, 2003). Understanding the motivation behind college selection is a potential way to improve football recruiting and increase success on the field. One study, conducted at a Division I university, identified (a) the opportunity to begin a good career other than playing professional football, (b) total academic value of the college's degree, (c)

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opportunity to win a conference championship, (d) reputation of the head coach, and (e) opportunity to play in a bowl game as the most influential factors in college choice among football players (Huffman, 2011). These results would seem to indicate student-athletes, competing on the highest level of collegiate football, put stock in the athletic aspects of college, while still understanding their primary focus in college is to get an education. Another study, conducted at a Division II school, identified the program's and university's family atmosphere as the most influential factor, with academic programs, success, and location as secondary factors (Mirocke, 2012). Student-athletes that commit to play at Division II schools tend not to become professional players (Kacsmar, 2013), so they recognize the importance of feeling a part of their university and getting a good education.

    Other Key Variables.

    Males and females have much in common in regards to influential factors in deciding where to attend college. In a study by Gabert, Hale, and Montalvo (1999), male and female college athletes had very similar influential factors with both having head coach, degree programs, location of school, and chance to play in their top five influential factors. Amount of financial aid was also an influential factor for both males and females (Doyle & Gaeth, 1990). The differences become evident when examining post-college objectives of males and females. Men have more opportunities to play their sport professionally, and thus are often focused on improving as much as possible. Women recognize the need for a good education, so they can excel after college (Davis, 2006).

    The NCAA is divided into three divisions; Division I, Division II, and Division III. The main difference between these three divisions is the level of competition. Universities in Division I are the most talent rich in terms of future professional players (Kacsmar, 2013). The

funding also varies by level. Division I institutions are allowed to give student-athletes complete

athletic scholarships; Division II is also allowed to give athletic scholarships, but fewer than

Division I institutions. Division III institutions are not allowed to give any kind of athletic

financial aid. Division I athletes ranked academic support services as their top influence, but of

the next five factors, four of them are athletics related (head coach, chance to play, sports

tradition, and athletic facilities). In Division II, location of the school is the most important factor

and only two of the top six factors are related to athletic participation. NAIA, a collegiate athletic

association different from the NCAA, showed similar results, with only "two of the top seven

factors related to athletic participation" (Gabert et al., 1999).

Although much of the research on the student-athlete college selection process offers

insight into what recruits say influences their decision-making, they rely on surveys and

interviews of the student athletes (Doyle & Gaeth, 1990; Huffman, 2011; Massey, 2013). In

these studies, student-athletes are asked why they chose to attend their school after they had

already enrolled. In these cases, many students may give the answer they thought a researcher

wanted to hear (e.g. educational acumen and future career success). This is a form of social

desirability bias, a bias from the subjects that tends to have them avoid socially undesirable traits

and promote socially desirable traits (Nederhof, 1985). Research has shown social desirability

bias exists in both the sports world and academia. Moderately identified sports fans show less

social desirability bias than their highly identified counterparts when emotional reactions to

sports messages are concerned (Potter & Keene, 2012). When questioned about cheating, nursing

students that were older or had more credit hours (i.e. they had more to lose by telling the truth)

were much more likely to demonstrate social desirability bias (Winrow et al., 2015). In addition,

another study showed that, in a sample of college students, the perceived desirability of behavior

has the greatest influence on self-reported conduct (Randall & Fernandes, 1991). Student-athletes may be most similar to highly identified sports fans, conditioned by the idea that the primary reason for attending college is to get an education. Any other reason to attend a university, besides the noble pursuit of knowledge, could be interpreted as selfish or not politically correct. Thus, the student-athlete is very likely to display a social desirability bias towards their real reasons for attending college.

Popular Beliefs about Recruiting

In order to determine empirically what factors predict where a recruit will attend college, we first must examine some of the generally held beliefs about what influences a recruit's decision. In the realm of recruiting, conventional wisdom dictates winning is the number one factor affecting a recruit's choice of school. This perception is intensified by the media coverage surrounding college football recruiting. Winning is a zero sum game, meaning not every school can have a winning record, yet some schools do well in recruiting without winning and others win without being ranked highly in recruiting (Pettigrew, 2015). Therefore, other factors must contribute to a recruit's choice in colleges. The following section outlines some of the popular beliefs surrounding recruiting, as held by coaches, administrators, student-athletes, and the media.

Winning.

Jimmy Johnson, a former University of Miami head coach, was famous for saying, "winning will take care of recruiting" (Dienhart, 2003). Winning leading to more successful recruiting seems to be a common opinion shared by college football coaches. University of North Carolina head coach, Larry Fedora, suggests the best recruiters are the best because of where those coaches work (L. Fedora, personal communication, March 25, 2015). Empirical research

has supported this idea (Caro, 2012; Dumond, Lynch, & Platania, 2008; Herda et al., 2009; Langelett, 2003). In Dumond, Lynch, & Platania (2008), schools with higher winning percentages and better rankings were more likely to attract recruits. Interestingly, winning a National Championship was not found to increase the likelihood of signing a recruit.

Academics.
Recruits frequently list academics as a major deciding factor for where they will attend school (Gabert et al., 1999; Letawsky et al., 2003). Many recruits, especially those not considered elite, place special emphasis on the academics of a school. They know their chances of playing professionally are slim and they need to complete their degree to obtain an attractive career. Some recruits eliminate schools from consideration if their preferred major is not offered at the university (Wagner, 2015). Many recruits see athletics as the way to open the door to academic schools they may not have been able to attend otherwise. In 2012, a survey conducted at "The Opening," an event for elite level football recruits, revealed that when asked to rank academics, football tradition, and facilities, 94% of respondents ranked academics first (Sherman, 2012b). A university's graduation rate, however, has been shown to have no effect on signing a recruit (Dumond et al., 2008), even though recruits frequently indicate education as an important factor in the college selection process (Gabert et al., 1999; Letawsky et al., 2003).

Successful Recruiting.

Previous recruiting success can be a major draw for recruits. University of Miami's former wide receivers coach, Brennan Carroll, saw this first hand with Brad Kaaya, the school's quarterback. "Everyone we talk to is extremely excited about Brad. It has helped recruiting from the standpoint of young guys getting in to play" (Degnan, 2014). Potential recruits also look at the talent that a school has, not necessarily the winning percentage. Schools with talented players can build excitement around a program (Dumond et al., 2008; Robert, 2015).

Facilities.

The quality of a program's athletic facilities is another area often cited as an influential factor in a recruit's college selection decision. Mississippi State's athletic director, Scott Strickland, believes the athletic facilities of a university send a message to prospective student-athletes by demonstrating what is important to the university. Mark Stoops, the head football coach at Kentucky, believes cutting-edge facilities can help coaches recruit, but because the upper level programs have all leveled off in facility quality, the determining factor of the facilities is more for players that are between levels. The head coach of Southern Miss echoes the idea of Coach Stoops. He believes facilities only matter when they are not impressive. Facilities are thought to have a larger impact on programs that are not considered elite programs (Jackson, 2013). After upgrading their facilities, University of South Dakota's deputy athletic director has noticed a distinctive change in, not only the recruits, but also the coaches and student-athletes (Holsen, 2015). Gary Anderson, the head coach of Wisconsin, has an opposing view. He downplays the glitz and glamour of his facilities, saying, "If you have nice facilities that may be all you have. Having a nice house and a nice car doesn't mean you have a nice family" (Jackson, 2013). This was a similar philosophy shared by Jimmie Johnson when he was head coach at the University of Miami. In the 1980s, the school had some of the worst facilities in the country, yet he continued to recruit at a high level for other reasons (Dienhart, 2003).

Some believe that the advantage of gleaming facilities may have plateaued in recent years with most every school doing some sort of improvement (Jackson, 2013). Athletic facilities may only be a factor in recruiting if they are not updated, which was suggested to be the case at Arizona State University (Bafaloukos, 2014). The university has not kept up in the facility arms race with its PAC-12 competitors, costing them recruits.

Athletic Budget.

Universities are non-profit organizations, and many of them have enormous budgets. Conventional wisdom states the more money an athletic department has, the more money it can reinvest into its programs and help them succeed. More resources enable coaches to do more to attract better recruits, such as increasing their recruiting budget so they can cast a wider net for recruits (Trujillo, 2008), or upgrade facilities to attract a higher caliber of prospect (Landon, 2003). After all, schools that spend more on recruiting and operations are more likely to be ranked in national polls (Jessop, 2013), and being ranked is a significant factor in decision making for recruits (Dumond et al., 2008).

Money, by itself, does not lead to more successful recruiting. The right people need to be making the decisions to use that money in the most effective way. The University of Tennessee has the largest recruiting budget in the nation, but they lack the quality recruiting classes and wins on the field to show for it (Brady, 2015).

Other Factors.

Some of the most influential factors of college programs are the ones most fans do not notice or consider. One seemingly significant trend recruits say influence their decision is the apparel affiliation of the school. "Many recruits admit that the apparel they stand to receive as future college athletes can play a factor in deciding which school to attend" (Sato, 2015). A study conducted by FieldLevel, reveals Nike is by far the most preferred apparel brand by college recruits.

A pipeline to the pros is another factor often thought to be important to recruits in the college selection process. Former recruit Matt Davis, a Texas A&M quarterback, was wooed by coaches with the school's history of sending student-athletes to the NFL (Sherman, 2012a).

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Some recruits are awed by famous and successful professional players that come from the school and want to follow in their footsteps (Anderson, 2002). Dumond et al. (2008) proposed that a recruit might choose a school based on the opportunity to improve his chances of pursuing a career in the NFL. Dumond went on to hypothesize that an institution's ability to prepare a student-athlete for a career in the NFL can be indicated by the number of alumni sent to the NFL. Dumond's findings did not back up this idea. Research showed the number of players taken in the NFL draft is not a significant determining factor for recruits. This may point to the idea that "recruits are less concerned about the prior athletic or academic success of prior student-athletes at the school and are instead rationally concerned with only their own abilities" (p. 79).

Coaching philosophy and type of offense run can be a deciding factor for a potential recruit (Dienhart, 2003; Kirpalani, 2013). It does not make much sense for an option quarterback to attend a school that runs a pro-style offense.

Other factors that members of the media see as influential to recruits are ones that deal with winning or exposure for the student-athlete. Winning championships and playing on television are often considered great attributes for a program (Dienhart, 2003). However, television's power as a recruiting tool may be waning as more and more games are broadcast on TV or over the internet (L. Fedora, personal communication, March 25, 2015).

The results of these multiple studies and articles have shown no one factor can guarantee where a recruit will choose to attend school. Conventional wisdom does not always align with the research, and the majority of the research is based on the self-identified factors of college students after they have begun their collegiate careers. Little research has focused on the quantifiable factors of universities, athletic departments, and football teams, and how those factors affect the quality of a team's recruiting class.

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CHAPTER 3: METHODOLOGY

The majority of past research on college athletics recruiting has centered on the student-athlete's perspective; what they felt was important to them. The current research will focus on the institution and the measurable factors that have an effect on the quality of the program's recruiting class. Specifically, the current study will examine the relationship between 17 independent variables on the outcome variable of recruiting class ranking. Multiple regression analysis will be employed to assess the amount of variance within recruiting class rankings attributable to each of the independent variables.

The subjects of this research will be all schools in the Division I Football Bowl Subdivision, a population of 127 schools.

Institution Factors

Based on the literature review, the variables examined in this study were selected based on the frequency with which they were listed as reasons why the student-athlete attended the university. All of the factors included in the study are quantifiable and could readily be found for all 127 institutions for the past four years. The factors are listed, along with their definitions, in Table 11. The identified factors can be separated into three basic categories: athletic department characteristics, institution characteristics, and team characteristics. Athletic department characteristics are qualities of the institution's athletic department as a whole, such as NCAA violations and athletic budget. Institution characteristics are factors that apply to the whole institution. The Forbes Magazine Annual America's Top Colleges List score would be an

institutional characteristic. Team characteristics are factors of the football team, such as winning percentage and recent recruiting class score.

Studies utilizing multiple regression are constrained by two important principles: multicollinearity and overfitting. Multicollinearity is "when two or more of the explanatory variables in a multiple regression analysis are very strongly correlated" (Nicholson, 2014). Certain factors of the institution would be directly impacted by other factors. For example, the size of an institution's football recruiting budget is dependent upon that institution's total athletic budget, thus recruiting budget was eliminated as a factor in the multiple regression.

Data was also a limiting factor in how many independent variables could be included. The data set was comprised of the previous three years of recruiting classes. With 127 FBS schools, 353 data points were collected. Based on the number of data points, the number of independent variables that could be tested was limited in order to avoid overfitting. Overfitting can occur in multiple regressions when too much is asked of the data (Babyak, 2004). Essentially, "if you put enough predictors in a model, you are very likely to get something that looks important regardless of whether there is anything important going on in the population" (p. 415). Due to the issues of multicollinearity and overfitting, the list of independent variables was pared down to 17.

NCAA rules limit institutions from recruiting athletes until the beginning of their junior year (NCAA, 2015). Due to this time limitation, the period of the factors affecting a recruiting class were limited to an average of the two seasons immediately prior to that year's national signing day. For example, for the 2015 recruiting class, factors from the 2013 and 2014 football seasons were averaged. Most recruits make an unofficial, or verbal, commitment during their

junior or senior year (Sander, 2008), therefore the recruits are most likely influenced during those two years.

Recruiting Ranking

In the first research question, the dependent variable was the scores of each institution from each of the three of the most widely accepted recruiting services: Rivals.com, Scout.com, and 247Sports.com. Each service uses its own formula to rank the teams. Rivals.com uses a formula based on the rating each recruit receives along with a bonus for each recruit ranked in their "Rivals250," the top 250 football recruits in the country ("Rivals.com Football Team Recruiting Rankings Formula," 2013). Scout.com uses "a math formula that based on a player's rating and his rankings" to calculate the team ranking ("Scout.com: About Team Rankings," 2015). 247Sports.com uses a proprietary formula that weights rankings and rating from multiple media outlets to determine the recruiting class team ranking ("247Sports Rating Explanation," 2012). These three services are among the most widely cited in the football-recruiting world and provided a good indication of the quality of the school's recruiting class. Each score was run in a separate regression model and the models were evaluated for consistent factors.

To answer the second research question, the dependent variable in the multiple regressions was the institution's average ranking amongst the three major recruiting services. In order to ensure a valid average, each score from the three recruiting services was converted into a T-score, and the T-scores of each recruiting service were averaged.

Data Analysis

Once all of the data was collected and organized, a regression model was developed with all 17 variables. Variables with a statistically significant relationship with the independent variable were retained in the final model.

CHAPTER 4: RESULTS

This studied utilized three years of data on measurable factors of Division-I universities. Starting with the recruiting class of February 2013 and concluding with the recruiting class of February 2015, data was collected on each institution for the previous two football seasons and the two values were averaged. In doing so, the data would reflect the institution from when the recruits would be most closely examining where they might want to continue their football career.

All of the information was collected through online sources and databases. In order to make data consistent across all recruiting services and schools, some statistical functions were used. For example, the three recruiting services use different scales to rate the recruiting class of each school. To ensure one score was not weighed more heavily when the scores were averaged, I normalized each score into a T-score. This put each score on the same scale with a high of 80, a low of 30, and a mean of 50.

Descriptive Statistics

All Division-I FBS Programs

The first question answered was which measureable factors of universities had an effect on recruiting. In answering this question, three popular recruiting sites were used for the dependent variable of recruiting class rating, Rivals.com, 247Sports.com, and Scout.com. These three sites use different scales to rate the recruiting classes of each school. The scores of each service are located in Table 1.

Table 1

Recruiting Service Scores

	N	Minimum	Maximum	Average	σ
Rivals.com	353	30	3263	1300.12	628.05
247Sports.com	353	64.29	319.58	171.51	57.1
Scout.com	353	305	5222	1748.16	1153.66

σ- standard deviation

The independent factors for each of the three recruiting sites were all the same. They

included measurable factors from all Division-I FBS schools from the 2011 football season

through the 2014 football season. Schools were eliminated if they were not in the FBS all four

seasons, or if more than one score was unavailable. In the end, 118 schools and 353 data points

were used. Descriptions of each independent variable are located in the appendix in Table 11.

Table 2 lists the descriptive statistics for all of the non-categorical variables of all

Division-I FBS Schools. The count of categorical variables is listed in Table 3.

Table 2

Descriptive Statistics: All Division-I FBS Schools

	N	Minimum	Maximum	Average	σ
Recruiting Score*	353	37.46	76.89	50.03	9.23
Conference FPI*	353	-12.34	14.34	2.31	8.38
Winning Percentage*	353	0.0417	0.9643	0.5270	0.2039
Athletic Department Expenses*	350	$8,845,434	$142,095,210	$55,396,352	$29,033,842
All-Time Win Percentage*	353	0.2987	0.7841	0.5147	0.0970
All-Time Bowl Victories*	353	0	33.5	9.32	7.76
All Time- Bowl Win Percentage*	353	0.0000	1.000	0.4680	0.1936
Forbes Academic Score*	344	22.90	91.09	49.58	15.74
Alumni on Active NFL Rosters*	353	0	46.5	14.2	10.2
Average Attendance*	353	3987	112215.5	44199.28	25582.55
Run/Pass Play Selection*	353	-0.6901	0.5175	-0.0837	0.1530
Run/Pass Yards*	353	-0.5971	0.7964	0.1704	0.1924
Years Since Stadium Expansion**	353	0	99	23.98	27.48

σ- standard deviation, *-average of previous 2 year, **-years since previous

Table 3

<div style="text-align:center">**Categorical Variables**</div>

	Apparel Contract				NCAA Infractions			
	Nike	Adidas	UA[#]	N/A	N/A	Under Investigation	NOA[@]	Under Penalty
Y-2*	221	85	33	15	294	7	10	43
Y-1**	218	85	37	14	302	4	11	37

*- two years prior to recruiting class, **- one year prior to recruiting class*

#- Under Armor, @- Notice of Allegation

"Power 5" and "Group of 5" schools.

The second research question focused on the differences between "Power 5" schools, those schools belonging to the ACC, Big Ten, Big 12, Pac-12, and SEC conferences, and those in the Group of 5. Schools in the "Group of 5" belong to the American, C-USA, MAC, Mountain West, and Sun Belt conferences. For the purposes of my study, schools that did not belong to a conference, the so-called "Independents" were assigned to either the "Power 5" or "Group of 5" based on their traditional classification. Notre Dame and BYU were included in the "Power 5" group, while Navy was included in the "Group of 5."

Examining the descriptive statistics between the "Power 5" and "Group of 5" schools reveals some stark differences between the two classifications. Some of the larger differences are evident in the athletic department expenses, average attendance at games, and the number of alumni in the NFL. The descriptive statistics of the "Power 5" schools are listed below in Table 4 and the "Group of 5" statistics are in Table 5.

Table 4

Descriptive Statistics- "Power 5" Schools					
	N	Minimum	Maximum	Average	σ
Recruiting Score*	198	42.34	79.17	56.61	8.14
Previous 2 Years Recruiting Score**	198	44.50	76.82	55.99	7.14
Conference FPI**	198	2.58	14.34	9.10	3.21
Years Winning Percentage**	198	0.1250	0.9643	0.5752	0.1889
Athletic Department Expenses**	198	$41,548,785	$142,095,210	$76,407,791	$19,887,773
All-Time Win Percentage**	198	0.3908	0.7200	0.5544	0.0836
All Time- Bowl Victories**	198	1.5	33.5	13.77	7.48
All Time- Bowl Win Percentage**	198	0.1409	0.7738	0.4875	0.1037
Forbes Academic Score**	198	29.83	91.09	57.07	13.39
Alumni on Active NFL Rosters**	198	3.5	46.5	20.05	9.65
Average Attendance**	198	26281.5	112215.5	61400.4	21046.47
Run/Pass Play Selection**	198	-0.6172	0.5175	-0.0916	0.1492
Run/Pass Yards**	198	-0.4148	0.7964	0.1671	0.1852
Stadium Expansion***	198	0	99	28.0	32.1

σ- standard deviation, *-average across all three recruiting services, **-average of previous 2 year, ***-years since previous

Table 5

<table>
<tr><th colspan="6">Descriptive Statistics- "Group of 5" Schools</th></tr>
<tr><th></th><th>N</th><th>Minimum</th><th>Maximum</th><th>Average</th><th>σ</th></tr>
<tr><td>Recruiting Score*</td><td>155</td><td>34.43</td><td>51.79</td><td>41.62</td><td>3.53</td></tr>
<tr><td>Previous 2 Years Recruiting Score**</td><td>155</td><td>36.43</td><td>59.01</td><td>42.45</td><td>3.85</td></tr>
<tr><td>Conference FPI**</td><td>155</td><td>-12.34</td><td>3.65</td><td>-6.37</td><td>3.47</td></tr>
<tr><td>Years Winning Percentage**</td><td>155</td><td>0.0417</td><td>0.8846</td><td>0.4654</td><td>0.2063</td></tr>
<tr><td>Athletic Department Expenses**</td><td>152</td><td>$8,845,434</td><td>$67,229,780</td><td>$28,026,188</td><td>$9,965,512</td></tr>
<tr><td>All-Time Win Percentage**</td><td>155</td><td>0.2987</td><td>0.7841</td><td>0.4640</td><td>0.0892</td></tr>
<tr><td>All Time- Bowl Victories**</td><td>155</td><td>0</td><td>10</td><td>3.6</td><td>2.9</td></tr>
<tr><td>All Time- Bowl Win Percentage**</td><td>155</td><td>0</td><td>1.0</td><td>0.4431</td><td>0.2660</td></tr>
<tr><td>Forbes Academic Score**</td><td>146</td><td>22.90</td><td>84.25</td><td>39.42</td><td>12.72</td></tr>
<tr><td>Alumni on Active NFL Rosters**</td><td>155</td><td>0</td><td>19</td><td>6.72</td><td>4.08</td></tr>
<tr><td>Average Attendance**</td><td>155</td><td>3987</td><td>48512.5</td><td>22226.23</td><td>7932.38</td></tr>
<tr><td>Run/Pass Play Selection**</td><td>155</td><td>-0.6901</td><td>0.2194</td><td>-0.0737</td><td>0.1577</td></tr>
<tr><td>Run/Pass Yards**</td><td>155</td><td>-0.5971</td><td>0.5773</td><td>0.1745</td><td>0.2018</td></tr>
<tr><td>Stadium Expansion***</td><td>155</td><td>0</td><td>75</td><td>18.85</td><td>19.0</td></tr>
</table>

σ- standard deviation, *-average across all three recruiting services, **-average of previous 2 year, ***-years since previous

Regression Analysis

Once all data was collected, a linear regression was run for each research question. The model was checked for significance. If the model showed significance ($p \leq 0.05$), then the factors of the model were checked for significance. Factors that were not significant ($p \geq 0.05$) were removed from the model, and the model was run again with only the significant factors from the original linear regression. Once again, the model was checked for overall significance, and then the individual factors were checked for significance. If any factors had become non-significant, they were removed from the model, and it was run again. Once all factors showed significance, the model was finished and conclusions were drawn.

All Division-I FBS Programs.

For RQ1, all three of the initial models included all 17 independent variables. Variables that did not improve the statistical significance of the model were eliminated, and each model was run again.

In the Rivals.com model, five variables were selected for the final model. The combination of these five variables explained 84.2% of the variances. The p-value for this model was <0.0005. Of the independent variables in the model, five were statistically significant at the .05 level. They included Conference FPI, previous two years recruiting score, previous two years winning percentage, alumni in the NFL, and average attendance.

Table 6

Rivals.com Model

	B	SE B	β
Conference FPI*	9.582	2.665	0.128
Recruiting Score*	35.094	3.767	0.516
Win %*	156.915	76.388	0.051
Alumni*	6.707	2.538	0.109
Attendance*	0.005	0.001	0.196

R2 =.842, Adjusted R2 = .840, F-Statistic = 370.538, and Sig. <.0005

*= p<.05

In the 247Sports.com model, four variables were selected for the final model. The combination of these four variables explained 88.0% of the variances. The p-value for this model was <0.0005. Of the independent variables in the model, four were statistically significant at the .05 level. They included Conference FPI, previous two years recruiting score, previous two years winning percentage, and average attendance.

Table 7

247Sports.com Model

	B	SE B	β
Conference FPI*	1.194	0.21	0.175
Recruiting Score*	3.464	0.263	0.56
Win %*	15.294	6.046	0.055
Attendance*	0.001	0	0.226

R2 =.880, Adjusted R2 = .878, F-Statistic = 635.772, and Sig. <.0005

*= p<.05

In the Scout.com model, five variables were selected for the final model. The combination of these five variables explained 82.6% of the variances. The p-value for this model was <0.0005. Of the independent variables in the model, five were statistically significant at the .05 level. They included previous two years recruiting score, previous two years winning percentage, all-time bowl victories, average attendance, and years since the stadium had been expanded.

Table 8

Scout.com Model

	B	SE B	β
Recruiting Score*	59.661	6.39	0.477
Win %*	340.815	144.989	0.06
Bowl Victories*	17.877	6.407	0.12
Attendance*	0.014	0.002	0.309
Stadium Exp.*	2.427	0.956	0.058

R2 =.826 Adjusted R2 = .823, F-Statistic = 328.768, and Sig. <.0005

*= p<.05

Two of the factors tested in all three models, previous two years recruiting score and average attendance were shown to have a collinearity tolerance (CT) below 0.2. A collinearity

tolerance of less than 0.2 is an indicator the factor has significant multicollinearity. Multicollinearity in a model indicates that two or more of the independent variables in the model are highly correlated.

"Power 5" and "Group of 5" schools.

To answer the second question of the differences in factors between "Power 5" and "Group of 5" schools that affect recruiting the three recruiting scores were converted to T-Scores and averaged, the data was split into respective groups, and a linear regression was run on each group.

In the "Power 5" model, five variables were selected for the final model. The combination of these five variables explained 73.4% of the variances. The p-value for this model was <0.0005. Of the independent variables in the model, five were statistically significant at the .05 level. They included previous two years recruiting score, previous two years win percentage, all-time bowl victories, and average attendance.

Table 9

"Power 5" Model			
	B	SE B	β
Recruiting Score	0.497*	0.075	0.437
Win %	5.985*	1.966	0.139
Bowl Victories	.172*	0.062	0.158
Attendance	.000*	0	0.201

R^2 =.734, Adjusted R^2 = .727, F-Statistic = 105.862, and Sig. <.0005

*= p<.05

In the "Group of 5" model, four variables were selected for the final model. The combination of these four variables explained 44.9% of the variances. The p-value for this model

was <0.0005. Of the independent variables in the model, four were statistically significant at the

.05 level. They included all-time win percentage, all-time bowl win percentage, and alumni in

the NFL.

Table 10

	B	SE B	β
"Group of 5" Model			
All-Time Win %	12.188*	2.755	0.308
All-Time Bowl %	1.875*	0.813	0.141
Alumni	0.242*	0.061	0.279

R2 =.449, Adjusted R2 = .434, F-Statistic = 30.517, and Sig. <.0005

*= p<.05

CHAPTER 5: SUMMARY AND DISCUSSION

All Division-I FBS Programs

In all three models run to determine the significance of measurable factors on the quality of the recruiting class, many of the same factors kept reappearing as significant. The previous two years recruiting score, the previous two years winning percentage, and the average attendance were all significant factors that had an effect on the quality of the recruiting class. This is consistent with the beliefs held with student-athletes, coaches, and the media: the belief that success breeds success. The success of great recruiting and the success of winning football games leads to the success of recruiting better student-athletes.

There were some slight differences between the models. In addition to the three factors all three models shared, the Rivals.com model found significance in the conference RPI and alumni in the NFL. The significance of the conference FPI might be attributed to the success of each conference. The SEC has long been seen as a powerhouse of recruiting because of the prestige associated with the competitiveness of the conference. Routinely, schools such as Alabama, LSU, and Florida, all members of the SEC, are listed as the recipients of the most talented class. These schools, along with others in the SEC, are also very successful on the field, leading to extremely competitive and highly publicized conference schedules. Similar arguments can be made about the number of alumni in the NFL. The NFL Draft has become a media focal point of the NFL season. With the pomp surrounding the event every year, there are countless articles and coverage about which school will send the most players to the draft and how high those players will be drafted. Even the coverage leading up to the draft is highly publicized. The

NFL Combine and college pro days are routinely covered by national sports and news outlets, further increasing the public's awareness of the success of college programs sending their players to the NFL.

Scout.com had two additional factors that showed significance. Those factors, all-time bowl victories and years since stadium expansion, help to reinforce the idea that success on the national stage and the latest in facilities is important to recruits. Having one or both of these is likely to help a school increase the quality of their recruiting class.

Multicollinearity among factors.

As was mentioned in Chapter 4, the previous two years recruiting score and the average attendance in all three models was shown to have a significant amount of multicollinearity. The best example of this is the average attendance factor. It was significant for all three models looking at all Division-I FBS schools. This factor was shown to have a high level of multicollinearity, most likely because success impacts average attendance as much as it does recruiting. Therefore, schools that are successful on the field, tend to be successful in recruiting and tend to have higher average attendance. A conclusion might be made that the average attendance does not affect recruiting, but is merely a byproduct of the team's success.

"Power 5" and "Group of 5" schools

The model of the "Power 5" schools showed much of what one might expect has an impact on recruiting. Schools that have done well in recruiting in the past tend to continue to do well in recruiting. How successful the team is both in terms of winning percentage over the previous two seasons and all-time bowl victories have an impact on the quality of their recruiting class. Average attendance is also a factor that has an impact on recruiting.

Conversely, the "Group of 5" model shows vastly different factors have an effect on the quality of a school's recruiting class. All-time win percentage and all-time bowl win percentage are shown to have a significant impact. This may be because the historical success of the school is a strong selling point to potential recruits. Another factor that has significance is the number of alumni in the NFL. The impact of this factor may have to do with the novelty of a player from a smaller "Group of 5" school making an NFL roster and having an impact on the team. For example, Ben Roethlisberger and Hall-of-Famer Marshall Faulk were both products of "Group of 5" schools and have had exceptional careers in the NFL. Looking at the descriptive statistics confirms the rarity a "Group of 5" player makes an NFL active roster as they averaged 6.7 alumni to the "Power 5's" 20.

While the "Power 5" model was able to explain a large part of the variance (R^2=0.734), the "Group of 5" model explain much less of the variance (R^2=0.449). This suggests there is much more going on in recruiting at the "Group of 5" level than the factors that were tested. There may be a multitude of reasons for this. A coach's ability to recruit may have more significance at the "Group of 5" because they are trying to attract talented student-athletes to come to less well-known or less successful schools. Coaching changes may also have an impact on recruiting in the "Group of 5" schools as many coaches view these schools as stepping stones to eventually coach at a "Power 5" school and the increased coaching turnover at "Group of 5" schools may impact recruiting.

Despite the anecdotal evidence provided by student-athletes, coaches, and the media, some factors were not significant in any the models run. Academic factors, the primary reason college athletics exist, does not seem to have an impact on how well a school does in recruiting. This supports a widely believed, yet rarely discussed, idea about college athletics and student-

athletes: the belief that a student-athlete's primary focus is to play sports and not to receive an education. This belief supports the idea that social-desirability bias has an effect on how student-athletes respond to questions about their reasons for attending a certain college.

Furthermore, the apparel that the school provides seems to have little to no effect on the quality of a team's recruiting class. Recruits, who are forbidden from signing contracts at the cost of their eligibility, do not seem to have any loyalty to a certain brand. They may prefer one brand's look or feel over another, but it does not seem to affect where they choose to play college football. Knowing this will allow schools to chase lucrative apparel contracts without worrying about alienating recruits.

Lastly, one of the most surprising factors that did not affect recruiting was the amount of money spent by the athletic department. While a large budget alleviates many issues, it does not appear to help recruit better players. Effective recruiting is most likely tied to the quality of monetary expenditures as opposed to the quantity.

Conclusion

In tackling college recruiting, I hoped to test scientifically many of the anecdotal reasons put forth by student-athletes, coaches, and the media as to why college football recruits choose certain schools. This information might then be used to help athletic departments make decisions about where to allocate resources in order to improve their recruiting class, which would, in turn, lead to success on the field.

In the end, I was only able to confirm much of what was already believed to be the secret to successful recruiting: winning. Previous winning percentage, both in the last two years and all-time, along with bowl victories, are major factors in the quality of a recruiting class. On top of

winning, the schools that were good at recruiting in the past tend to be good at recruiting in the future, and schools that win also tend to have higher average attendances and better recruiting classes. However, the most interesting information about this study was the insight into the validity of what stakeholders seem to think impacted recruiting.

Some of the most striking revelations were not necessarily what factors were shown to affect recruiting, but rather what factors were shown to not affect recruiting, despite the anecdotal evidence espoused by student-athletes, coaches, and the media. Academic quality of the institution, thought to be a deciding factor for student-athletes, was shown not to be a significant factor in any of the models. The same can be said for apparel affiliation, NCAA violations, athletic department expenses, and type of offense. Despite what is thought to be impactful on student-athlete college choice, none of these factors were shown to have an effect on the quality of a school's recruiting class.

Future Research

One of the most common factors student-athletes, coaches, and the media said had an impact on recruiting was the student-athlete's relationship with the coach. Unfortunately, that is an extremely difficult factor to measure objectively. Different coaches are skilled at recruiting different types of players, and it would be extremely difficult to nail down how much influence a certain coach had over a certain student-athlete. There is data on how affective a coach is at recruiting; multiple services give out various recruiting awards to coaches every year based on how many and the quality of the student-athletes they recruit. This data might be used to objectively measure how much quality an individual coach adds to their team and how much they impact the quality of a recruiting class.

Another widely cited factor for recruits is an athletic department's facilities. Facilities are a hard factor to quantify. There is no universally accepted score or rating of athletic facilities like there is for recruiting class or academic quality. In addition, when evaluating facilities there are multiple factors that would need to be taken into account, such as renovation versus a new build, multi-use facilities versus football only facilities, and the number and location of these facilities. Since universities spend millions of dollars on facilities in the "arms race" of college athletics, knowing how much of an impact one facility had over another, or even if facilities have an impact at all would be valuable knowledge.

In my multiple regression models, I was limited to the number of factors that could be tested. There are many more measurable factors of universities. Not just of their athletic departments, but also their school as a whole. It is possible there are other factors that can affect the quality of a recruiting class. Identifying these factors would help to refine the model of college football recruiting and help coaches to move recruiting from the realm of art into the realm of science.

APPENDIX 1: INDEPENDENT VARIABLES

Table 11

Independent Variables

Variable	Definition
All-Time Bowl Victories	The number of wins in a bowl game in the history of the program. This is an indicator of high-level success.
All-Time Bowl Win Percentage	The number of wins in a bowl game divided by the number of bowl games played in the history of the program. This is an indicator of consistent high-level success.
Alumni in the NFL	The number of former players that appeared on active NFL rosters. An indicator of the ability of players from the program to pursue a successful professional career.
Athletic Apparel Affiliation	The contractual provider of athletic apparel for the institution's athletic department
Athletic Expenses	The total expenses of the institution for one academic year. A measure of the amount of resources an athletic department has to devote to the football program and recruiting.
Average Home Game Attendance	The average number of fans that attended each home game during a season. This is an indicator of fan and community support for a team.
Conference Affiliation	Which conference a team belongs to (ACC, American, Big 12, Big Ten, C-USA, Independent, MAC, Mountain West, Pac-12, SEC, or Sun Belt)
Conference Football Power Index	An average of the FPI for each of the teams in their respective conference. A score of 0 would denote a team of average ability. This indicates the competitiveness of a conference.
Institution Score- Forbes Magazine	The score of the institution in the Forbes Magazine Annual America's Top Colleges List. This score indicates the academic quality of the institution.
Level of Competition	The conference in which the institution competes, either the "Power 5" or the "Group of 5." The "Power-5" conferences are the ACC, BIG 10, BIG 12, PAC 12, and SEC. The "Group of 5" conferences are the American Athletic Conference, C-USA, MAC, Mountain West, and Sun Belt).

NCAA Violations	Investigations, notices of allegations, and current and recent sanctions levied against the institution by the NCAA. Sanctions could mean an inability for a program to participate in the postseason, a reduction in scholarships, and probation, all factors that might hurt a program's reputation and ability to recruit.
Recruiting Ranking	The institution's recruiting ranking from the previous year. A higher ranking would indicate that the team is stockpiling talent and thus would be more likely to be successful.
Run/Pass Play Selection	The tendency of a team to call more running play or more passing plays. A number above zero indicates more passing plays, while a number below zero indicated more running plays. This indicates the type of offense a team runs.
Run/Pass Yardage	The amount of yardage gained by either running or passing the ball. A number above zero indicates more passing yard, while a number below zero indicated more running yards. This indicates the explosiveness of an offense.
Stadium Expansion	The time, in years, since the institution expanded the size of their stadium. This is a measure of the quality of the institution's facilities.
Team Win Percentage- All-Time	The number of wins divided by the total number of games played during the history of the program. This is an indicator of historic program success.
Team Win Percentage- Previous Season	The number of wins divided by the total number of games played during the most recent season. This is an indicator of recent program success.

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