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BLAKE BUCHMAN

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NIL AND THE EFFECT OF CORPORATE DENSITY ON COLLEGE FOOTBALL RECRUITING

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BY THE COMMITTEE CONSISTING OF

Dr. Daniel Larson, Chair

Dr. Christopher Black

Dr. Tyler Ransom

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Abstract

College athletics is an ever-changing landscape and the most recent event to change that landscape is the introduction of Name, Image and Likeness (NIL) policies. This issue of NIL pertains to the ability for college student athletes to be paid based on commercial uses of their identity and marks the first time in over 70 years that college athletes can be compensated outside of the form of a scholarship. NIL is affecting all levels of college athletics both on and off the field. Two areas that new NIL regulations may have a large impact on are recruiting and sales of corporate sponsorships by the athletic programs. College athletes generally want to be fairly compensated for their sport performances, so naturally the athletes potentially want to attend a school that gives them the best chance to make the most money possible. As such, the athletic programs that can provide the best opportunities for income should see an improvement in recruiting and therefore should see an improvement in on field success. Off the field, NIL could lead to athletic programs receiving less money in corporate sponsorship revenue if businesses decide to give money straight to the players as opposed to the program itself. In both cases, the corporate environment could impact the opportunities available to prospective student athletes, i.e. areas with more opportunities for corporate sponsorship would be expected to have an advantage in recruiting, and more sponsoring/endorsement activities may be redirected to top student athletes. This study empirically tested the former and discusses the theory related to the expected effects on the latter. NIL changes may cause major changes in collegiate athletics and athletic programs could gain an advantage over opponents if NIL is utilized properly. The study found that there is evidence of NIL interacting with change in recruiting rankings.

Keywords: NIL, collegiate athletics, athletic department, recruiting, corporate sponsorships

NIL and the Effect of Corporate Density On College Football Recruiting

On June 21, 2021, the Supreme Court decided that the NCAA (National Collegiate Athletic Association) could not stop college athletes from earning money off their likeness (Totenberg, 2021). This led to the official beginning of legal Name, Image, and Likeness (NIL) possibilities and athletes being allowed to make money outside of their scholarships for the first time in decades. NIL has now been attributed to major changes in the landscape of college sports. One striking example of these changes at Michigan State is recounted by Kalter (2021):

> All 133 men's basketball and football players at MSU now receive a $500 monthly stipend from Pontiac-based United Wholesale Mortgage... the new policy is also ushering in a new market for management agencies cropping up in Michigan and nationwide to help athletes get connected with brands and sell merch. (p. 2)

College athletes may now earn unlimited amounts of money from activities outside of their university's support. Before this change, college athletes were limited to the scholarships that were awarded by the Universities themselves and have long been prohibited from earning money from outside businesses (Zimbalist, 2001). After a multiyear debate, the 2021 Supreme Court ruling created this process where college athletes can use their likeness to earn unlimited amounts of money and changed the entire collegiate sports model.

NIL not only affects the athletes, but it also may change how college athletic programs operate entirely. With NIL being so new, research is just starting on the topic and there is much to learn and discover about NIL and the effects it has on college sports and intercollegiate athletic administration in general. The NIL directly should directly affect two main revenue streams for the athletic programs, these are sponsorships sales and on-the-field success. NIL theoretically affects both revenue streams, but in very different ways. First, NIL activities could

affect how much schools bring in through sponsorship sales if businesses decide to spend money directly on players for endorsements rather than purchasing athletic department sponsorship properties. Concurrently, NIL earning opportunities could also directly affect recruiting, which is how teams develop on-field success. While athletic programs are not directly compensated for on-field success, e.g., financial prizes, better performances create a more desirable product for consumers (Borland & Macdonald, 2003), which leads to higher revenues from sale of tickets, merchandise, and media broadcast rights. With NIL being so new, there is little apparent research on the topic, but no matter how NIL is viewed or studied, the impact NIL has on collegiate athletics is profound.

Purpose of the Study

The aim of this study is to examine how NIL affects collegiate athletics, primarily in the revenue streams that come into the athletic programs. Using collegiate football programs, this study provides an initial look at how NIL interacts with corporate density and brand popularity to affect the recruiting success of programs, which leads to affecting on-field success. On-field success is an induced revenue stream as more competitive success directly ties in to more generated revenue. In examining the logical path to these changes, an added purpose of this study is to take advantage of an opportunity to empirically test business theory related to corporate density. These factors may matter when analyzing outcomes and determining which schools benefit the most from the changes in NIL regulations. how their budgets are affected by this new development.

Research Question

The first research question in this study is:

I. Have NIL changes affected recruiting outcomes in football based on corporate density and brand popularity?

For the primary question, the hypothesis is that NIL has affected recruiting rankings through an interaction with corporate density and brand popularity, i.e., programs that have better NIL (corporate) opportunities, likely have seen a jump in recruiting rankings. It is expected that corporate density has a positive effect on these recruiting rankings, as teams with more businesses in their area improve in recruiting. Likewise, the revenue opportunities available to recruits based on program popularity should enhance recruiting.

Significance of the Study

The significance of this study is that it provides a baseline for what to expect with NIL and how NIL affects various aspects of the collegiate athletics model. Not only did this study discuss how NIL affects the players, but also how it affects the Universities and college athletic programs in general. This study started to form an understanding of how NIL effects on-field performance by teams. This study can help decision makers in the athletic department and the coaching staff understand how NIL affects their processes and can help athletic decision makers better leverage NIL to give their organizations an advantage.

Also significant in this study is that NIL creates an opportunity where economic theory can be tested. Economic theory can be difficult to evaluate because there is usually not a reliable platform to conduct empirical tests. The NIL policy shift created a natural experiment in collegiate athletics that can display how corporate density and corporate networking can help organizations be successful. In the traditional business world, it is difficult to test economic

theory because there is usually not a clear-cut event that leads to before and after testing. Sports has frequently provided a platform for these empirical tests of business theory (Khan, 2000), and even though it is not a perfect generalization, it does provide an "incentive consistent" and "data-available" analog in which to test some economic theory.

Operational Definitions

Name, Image, Likeness (NIL): An individual's ability to capitalize on their publicity and be compensated through third-party endorsements.

Brand Popularity: How familiar the general public is about a particular brand or University. In this study, brand popularity is measured by Google trends data.

Corporate Density: How many businesses are in a shared area.

Delimitations, Limitations, and Assumptions

Delimitations of this study include only looking at football programs instead of all sports and limiting the schools that are being studied. Football is the sport that has the most athletes receiving compensation and has the largest (and most public) deals. Studying only football makes sense as football is by far the highest revenue sport. Studying football players helped make effects the most detectable and provide the most reliable data and outcomes.

The main limitation for this study was the time constraint studied. Having only one recruiting cycle made it difficult to conclude definitive effects, but the results provided a baseline and see what trends begin in just a year's time of the new policies. There is also the limitation that a sports setting can only be so generalizable and not absolutely perfect to the business world. Nevertheless, sports provide one of the few available contexts to test economic theory and gives an accessible sample and situations that the business world does not provide.

Assumptions in this study include that the data is accurate and that the variables that are supposed to be controlled are being controlled. Recruiting ranking data was pulled from 247sports.com and was assumed to be accurate and up to date when the rankings data are pulled.

Literature Review

NIL is a very new topic, therefore there is not a significant amount of prior research done on NIL. This is part of the motivation for this study, but it is also important to review the literature that is out there on NIL and the topic surrounding NIL. For this study, the literature being reviewed relates to the historical context of the NIL, the bylaws and rules of NIL, recruiting in general, sponsorships, and the business models that are being examined. There are many studies on the sponsorship process, but this study heavily focuses on sports, so the literature review is likewise focused on sponsorships in college athletics.

Databases for this study included SportDiscus and Google Scholar as these provide the best and most accurate data for this study.

Table 1 *Database Search Results*

Search Line 1	Search Line 2	Number of Results	Database
Athletes Getting Paid History	College Sports	47	SportDiscus
NIL	College Sports	16	SportDiscus
Athletes Getting Paid	College Sports	45	SportDiscus
Recruiting	College Sports	614	SportDiscus
Sponsorship Revenue	College Sports	16	SportDiscus
Recruiting Rankings Leading to Success	N/A	73,500	Google Scholar
Corporate Density	N/A	2,150,000	Google Scholar
Corporate Networking	N/A	1,760,000	Google Scholar
Corporate Saturation	N/A	641,000	Google Scholar
247sports	N/A	344	Google Scholar

These search results were screened for relevance and 19 pieces of literature were included in the review.

NIL Overview

With NIL being so new, there is very little research done on the topic and there are no in-depth dives into all the effects it could have. The NCAA did not immediately specify rules for NIL, so a lot of it remains up in the air. Coaches, players, administrators, fans, potential businesses, and everyone else involved in collegiate sports have limited ideas for what to expect from the NIL changes. Wethal wrote "They're (the programs) really trying to answer questions and prepare themselves for the unknown" (Wethal, 2021). Wethal talked with a CEO from a company who is helping educate players and coaches on NIL and how to best leverage it. Overall, the CEO said that no one really knows what to do with NIL, but there are several organizations trying to educate everyone involved on what to expect. With programs not knowing what is coming, there is a lot of testing being done with NIL by different programs as schools to try and figure out exactly how to best leverage this new possibility.

Athlete compensation in collegiate athletics has been a topic of conversation for a long time, but discussion and advocacy has really ramped up over the last few years. In a recently published paper, Tepen (2021) writes about the long and storied history of athlete compensation and how collegiate athletics has got to the point of NIL as it is known today. Athlete compensation first became an issue in 1953 when a University of Denver athlete got injured during a football game. This athlete played football, but also worked at the tennis courts at the University. The athlete claimed he should get workers compensation because he was employed both at the tennis courts and by the football team as a player, in *Nemeth v. The University of Denver*, the athlete won the case (Tepen, 2021). This is where the NCAA started pushing the term "student-athlete" to describe the players on the athletic teams, student-athlete and the term "amateurism" are two of the most important terms when discussing compensation for collegiate

athletes. Student-athlete is a term created by the NCAA to protect them from having to say that athletes are employees, showing that they are students that choose willingly to play athletics. Amateurism is also a term created to protect the NCAA from having to pay the athletes by saying they are still amateurs and not professionals, meaning that they do not have to be paid for their services. The NCAA started pushing these terms even more after another athlete was deemed an employee and therefore was eligible for death benefits in the court case *Van Horn v. Industrial Accent Comm'n* in 1963 (Tepen, 2021).

Athlete compensation problems settled down until 1984 when certain Universities, who called themselves the CFA, tried to challenge the NCAA and their television rights by negotiating a television deal outside of the deal the NCAA had. Since the NCAA controlled TV rights, schools tried to get out of the grip of the NCAA as far as television goes. In *NCAA v. University of Oklahoma,* the NCAA got a win in the courtroom. Even though television was the main concern in the lawsuit, amateurism was discussed. Justice Stevens, who was the judge, said "respect for the NCAA's historic role in the preservation and encouragement of intercollegiate amateur athletics… in order to preserve the character and quality of the product, athletes must not be paid" (Tepen, 2021). Even though amateurism was not the main discussion, it was a major win for the NCAA on both the television front and that it was the first time that a court openly stated that collegiate athletes should not be paid.

The public became aware of the Name, Image, and Likeness (NIL) debate in 2009 with the case of *O'Bannon v. NCAA.* This case called for athletes to get money from their likeness in connection to video games, live game broadcasts, and other footage (Tepen, 2021). Judge Claudia Wilken ruled that athletes would be able to sell their likeness for these avenues, though it was later overruled. This case famously caused EA Sports to discontinue the popular NCAA

Football video game series, which caused public uproar and started to shift public perception about players being compensated.

In 2011, the NCAA "authorized a $2,000 stipend, above tuition, room, board, books, and fees for Division I athletes… The NCAA eventually expanded the stipend program to a range of $2,000 to $5,000 to help cover the full, institution-calculated cost-of-attendance" (Tepen, 2021). This helped with some of the public pressure that was saying a scholarship was not enough, that student-athletes were struggling to live properly because they couldn't have a job outside of their sport. Seton Hall University conducted two surveys to see how the public felt about collegiate athletes being compensated. The results have changed "with 71% of those pulled in 2013 saying that scholarships provided sufficient compensation for NCAA athletes… A March 2019 survey found 49% of those polled support compensating NCAA athletes who participate in revenue-generating sports" (Tepen, 2021). As the surveys show, public support of athletes being compensated has almost doubled over the past few years. With this public support also comes public pressure for decision makers to make changes.

The first signs of these decision makers is again from Claudia Wilken, as she ruled in 2014 that California men's basketball and football players could take advantage of NIL to make money, but that was quickly overturned (Tepen, 2021). Even though it was overturned, that decision was the first sign that there were going to be changes in the collegiate athletics landscape.

This leads to 2019 and the Fair Pay to Play Act, which was passed in California and was the first major step in overruling the NCAA by law. A 2019 article by Forbes says "The bill permits college athletes in the state to hire agents and be paid for endorsements. For the first time, student athletes will be allowed to promote products and companies and financially benefit

from their college sports activities" (Kelly, 2019). This was a huge development in collegiate athletics as many other states passed similar bills soon after California. The NCAA opposed this bill and tried to talk California out of it, but later in 2019 the NCAA "voted unanimously to permit students participating in athletics the opportunity to benefit from the use of their name, image and likeness in a manner consistent with the collegiate model" (Tepen, 2021). It became clear that the NCAA was accepting defeat and it was clear that collegiate athletes were going to be paid sooner rather than later.

Several of these bills passed by the various states were set to go into effect on July 1, 2021. On June 21, the Supreme Court passed a ruling saying that the NCAA could not stop collegiate athletes from making money off their likeness. In this hearing Justice Brett Kavanaugh said "cannot justify the NCAA's decision to build a massive money-raising enterprise on the backs of student athletes who are not fairly compensated. Nowhere else in America can businesses get away with agreeing not to pay their workers a fair market rate… the NCAA is not above the law" (Totenberg, 2021). On June 30, one day before NIL was set to get into effect in many states, the NCAA put out a statement saying that NCAA athletes could make money on their name, image, and likeness whether the state had a law in place or not. While this did not overrule state laws, it was the NCAA finally accepting NIL.

NIL is now in place in NCAA athletics, but there are still some rules in place that athletes must follow. In some states, there are certain products that athletes cannot endorse. These are products such as alcohol, gambling, drugs, etc. Also, Universities cannot be involved in any way as far as giving the players money, setting up deals for the players, etc. Some skeptics think that NIL rules are not followed and cause a lot of cheating and unfair advantages for Universities that choose to not follow the rules, and unfortunately that very well could turn out to be correct.

NIL provides a lot of opportunities for research because there is so little information on it. This area of research is very raw and very new because no one knows exactly how to take advantage of NIL, but some schools and programs are in a lot better place than others to take advantage of this new development. NIL has created a lot of buzz and has completely shifted how collegiate athletics operates.

NIL and Athletes

While there is very little research done on NIL, the bulk of the research that has been done has focused on how NIL affects the athletes themselves. Misey and his associates wrote an in-depth paper about NIL and gave fictional examples of how it could potentially work. Misey describes that "student athletes could receive compensation for their use of their NIL in third-party endorsement or social media influencer activities, including certain activity or endorsements that may be related in some way to athletics" (Misey et al. 2020). Athletes cannot just do whatever they want, there are rules that must be followed both by their school and by their state. In his study, Misey breaks NIL into three sections (Third-party endorsements, student-athlete work product, and recommended safeguards), he gives 23 fictional case studies in these three sections and goes into detail on how this could affect athletes and what all the athletes can and cannot do.

Another aspect that should be noted is that none of the payment can come from the University. Misey also explains that concept as "a prohibition on institutions arranging, identifying, facilitating or having any other kind of participation (including by encouraging booster participation) in endorsement deals for their student-athletes" (Misey et al. 2020). This is one of the potential problems with NIL as it potentially makes it easier for teams to cheat.

Recruiting

It has long been said that recruiting is the heartbeat of your program when talking about collegiate athletics. Recruiting leads to on-field success, which leads to more money coming in a lot of different ways (Borland & Macdonald, 2003). This is why good recruiting can effectively be considered a revenue stream, as good recruiting creates the revenue generating on-field success. Recruiting has become even more public over the past several years with the advancements in social media, recruits post about getting an offer and when they commit to a certain school. In December of the Senior year of High School, recruits can then start signing national letters of intent, which is basically a contract saying they are going to that school to play their respective sport. There are now several websites (247sports, Rivals, ESPN) that cover High School athletes from the time they are Freshman, this has made fans more in tune to recruiting and put more pressure on coaches to recruit at a high level.

When looking at how recruits are ranked, McClendon and Nadrowski (2021) conducted a study on how 247sports.com goes about ranking the recruits that they cover. In this study they discuss how 247sports rates the player in a few different categories and they end up with between a .7 and 1.000 rating, with different cutoffs as to what is a 5-star, 4-star, 3-star, all the way down to a 1-star. They also discuss how team recruiting classes are rated, saying,

> 247 takes these ratings of individual players and uses those ratings to create two measurements of the overall quality of a school's recruiting class. One, called AVG, is simply the average rating of each player in a school's recruiting class (multiplied by 100). The second, which 247 calls "Points" … is a weighted sum of the rankings of the individuals comprising a school's recruiting class (p. 2).

The 247 group has scouts that cover every area of the country, and then all the area scouts come together as a committee and form the rankings that everyone sees.

Recruiting is also getting expensive. According to a study done by Dronyk and Stitzel (2015), 3 teams spent over $2 million on recruiting in 2012 and 50 teams spent more than $1 million and those numbers have since gone up. Dronyk and Stitzel looked at how recruiting well effects on-field success and looks at what leads to recruiting well. While these recruiting costs are operational (flights, visits, etc.) it does show what schools are willing to do, and pay, to recruit at a high level. Their study led to a conclusion that the top half of college football sees a statistically significant correlation between recruiting success and on-field success (Dronyk & Stitzel, 2015). In a similar prior study, Caro (2012) also looked to see if there was a correlation between winning and recruiting success. He also discussed how that affects the financial situation at the respective Universities. In this study, Caro says

> it has become more important for football programs to be profitable or sustain their profitability… individual programs can further boost revenue through increased attendance, season ticket sales (and personal seat licenses), merchandising, and increased television exposure. Profitability appears largely correlated to success on the field (p.148).

This shows the connection between good recruiting leading to a better revenue stream, which is central to this study.

There are a lot of factors that go into a recruit choosing their school, and NIL is not the only factor that goes into a recruit's decision. Dumond (2008) and Nixon et al. (2021) both completed studies on what the main factors were that led to a recruit choosing a school. Dumond's study looked at data of almost 4,000 DI-A football recruits who were recruited from

2002-2004, getting the data from a recruiting website. Dumond then used a probit model to look at the recruiting factors and found that team success was significant, but that academic success was not statistically significant. Dumond also found that proximity to the recruit's home and expected playing time were significant. Lastly, it was deemed significant if a program was in a "major" conference as opposed to a lower tier conference (Dumond et al., 2008). Nixon's study gave a questionnaire to over 200 DI, DII, and DIII athletes to see what went into their decision to attend a school. This study concluded that athletic success, academic prestige, and location were significant factors in deciding on a school, with academic prestige becoming significant at the D-III level (Nixon et al., 2021). It should also be noted that every recruit is different, some factors matter more to some recruits than others. For example, a recruit in the 2022 recruiting class is reportedly attending a school because that is where his brother plays (Wiltfong, 2022). But, in most recruitments, the factors discussed by Dumond are the most important factors in helping a recruit choose a school.

Bergman and Logan (2020) conducted a study that looked at how much a recruit was worth to a program depending on how highly rated the recruit is. In this study, they conclude that a 5-star recruit (recruits are rated from 1-5 stars with 5 stars being the best) is worth over 3 times as much as a 4-star recruit in the measure of added wins to their team. They also conclude that each win is worth $800,000 in extra revenue for the winning team with similar results for getting into bigger bowl games (Bergman & Logan, 2020). Looking at recruits as far as their worth to the school, it can be concluded, as expected, that higher rated recruits lead to more money for their school. It is expected that higher rated recruits also earn more money as far as NIL due to accessing this market value. Additionally, if NIL leads to better recruiting for a specific school, then it would follow that the school should bring in more money and have better success. One

caveat is that the financial streams flowing to athletes via NIL deals may be diverted away from the athletic programs, namely, sponsorships.

Sponsorships

Sponsorship agreements are very important to sports in general, Stotlar (2004) created a model illustrating how sponsorship agreements work between companies and sports organizations. This process starts with the company identifying needs to improve their image or build relationships and then both sides (team and company) decide how they want to display the company's name. This can be a sign in the stadium, naming rights, being the official product of the team, etc. Then it is put into action and both the team, and the company try to get feedback from the fans and employees to see what the results are (Stotlar, 2004).

Corporate sponsorships are a large revenue stream in collegiate athletics, with businesses trying to reach the fanbase of the team that they are sponsoring. In a Martin (2019) study, there was research done on corporate branding done across rival teams. In this study, they test the brains of fans who see businesses are sponsoring both teams that are playing in the game. Also in their study, they generally discuss sponsorships in collegiate sports (Martin et al., 2019). Martin said,

> branding within the sports arena can have a potentially positive effect for companies across several dimensions, including sponsorship awareness, brand recall and recognition, positive purchase intentions towards sponsor products, and even behavior loyalty (p. 210).

This is why sponsors say "the official product of" whatever team the business is sponsoring. The business wants to be connected to the team performances and therefore connected to the fans. With no research on how NIL has affected sponsorships, this provides an avenue for this study to

break into a new area and see how the massive budgets of these athletic departments may be affected by NIL.

Corporate sponsorships are a key revenue stream for many of the college athletics programs around the country. The College Athletics Financial Information database says the average FBS athletic program gets almost 10% of their revenue from corporate sponsorships (Knight Foundation, 2019). The University of Texas is one of the most recognizable athletic programs in the United States and over 21% of the athletic revenue is from corporate sponsorships (Knight Foundation, 2019). If athletic programs were to see a significant drop in corporate sponsorship revenue, it would cause the program to alter their budget accordingly.

There are several scenarios in which companies might choose to partner with athletes as opposed to the athletic programs itself. If companies don't have the budget to get a large corporate sponsorship with the program, then the company can try to go to an athlete for less money and/or for accessibility. Maybe the best example though is social media exposure. Gaylord Family Oklahoma Memorial Stadium is where The University of Oklahoma Sooners play football, and it holds around 85,000 fans. If a company were to have an ad at the stadium, then that many fans could see it 6-7 times a year. Meanwhile, Oklahoma quarterback Spencer Rattler has over 450,000 followers between Twitter and Instagram on his personal accounts. Not only is that more people, but the athlete can post about the company throughout the year. Even though players might not have as many followers as the football program or athletic programs itself, usually football program specific accounts do not post explicitly about their sponsors. These programs post more about scores and team updates, while personal accounts are more about personal lives, such as who the player is doing an NIL deal with.

Additionally, programs might have exclusivity agreements to where players cannot endorse certain products. This is to protect agreements that the program has with products, "the official soft drink of the Oklahoma Sooners," making it to where those programs players cannot endorse a rival soft drink. NIL deals can circumvent these agreements and try to find a way around them, but it is important to know that this can come into play with certain NIL opportunities.

Business Models

Economic theory is very difficult to test in the business world, but often sports can be used to test economic theory. Kahn (2000) and Garner et al. (2016) both wrote articles showing that sports can be used to test economic theory. Kahn described sports as a "labor market laboratory" (Kahn, 2000). Kahn was studying the labor market and was using sports as the "laboratory" in which he was able to do his testing. One example of Kahn's work was looking at an athlete's salary compared to their performance and how you can use performance to justify salary. Using sports in this instance makes sense because the salary numbers and performance numbers are easily accessible and quantifiable (Kahn, 2000). NIL policy changes provide a platform to test how corporate density and corporate networking can affect the success of a business and the potential employees. NIL was put into effect July 1, 2021, so there is a very natural experiment that can be studied. Kahn goes on to say that "there is no research setting other than sports where we know the name, face, and life history of every production worker and supervisor in the industry" (Kahn, 2000). Sports coverage has become so public that everything to do with sports is put on social media, television, and every other news platform out there. This makes it potentially easier to get data and makes it to where seeing behavior and testing behavior is easier.

Chintrakarn, in 2020 wrote about corporate density in a study discussing how companies set themselves apart when there is a small pool of potential workers in one area. In an area with many companies and not many workers, Chintrakarn researched how businesses try to set themselves apart to draw those employees to their business. In this study Chintrakarn said "due to a limited supply of qualified individuals in a given area, firms located in close proximity must share a limited pool of talented individuals. As a result, the more firms there are in the same area, the fewer directors each firm in the area is able to obtain on average" (Chintrakarn et al. 2020). Similarly with NIL in college athletics, the sponsoring firms are businesses, and the individuals are the players that could be potentially sponsored. Businesses that want to get into NIL are trying to set themselves apart to make sure that they get the best players and most exposure. This is easier for schools that don't have other DI-A schools around them, but for schools in states such as Texas (where there are 12 DI-A schools) it is harder to set themselves apart. The programs themselves are removed from this exchange and instead the exchange is between players and businesses.

Summary

To summarize, it has been a long process for the NCAA to get to this point with NIL. After trying to fight against payment of athletes for so long, it is a massive moment in collegiate athletics history for NIL legislation to be passed. Athletes are most affected by this legislation, as they now are able to monetize themselves while still in college. The place where programs most want to take advantage of this is in recruiting and that is where this study was focused, specifically looking at the effects that corporate density and brand popularity has on those outcomes. The effect on corporate sponsorship revenue should not be overlooked either and is also discussed in this study, despite the lack of current data to observe predicted outcomes.

Methods

This chapter discusses the methods to be used in this research study including the sample selection, research design, data sources and data analysis. Previous studies and how they have led into this methodology are also be discussed in this chapter.

Sample

The sample contained recruiting data from the 2018, 2019, 2020, and 2022 seasons at the FBS level for all 130 programs and was drawn from 247sports.com, which is considered an industry leader in the football and basketball recruiting information. 2021 was a tainted recruiting year due to Covid-19, as players could not visit all the schools that were of interest, so that year was removed. Using 2018-2020 offers relatively stable data that was used to establish a "pre-NIL" baseline, while 2022 was considered "post-NIL" data and allowed for comparison to see initial changes that have started since NIL has been put into place. Having a pre-NIL and post-NIL allowed for comparisons to be made and initial conclusions to be drawn on how NIL may be starting to change recruiting. The dependent variable is the difference between the average recruiting score of pre-NIL data (2018-2020) and then the observed post-NIL recruiting score (2022).

Research Design

For this study, the research design is a causal-comparative (natural experiment) analysis, which means that it resembles an experimental design in that there is a definitive policy change (and variation in business environment conditions) and a subsequent evaluation of observed changes, but it does not have all the components of random selection and group assignment of conditions. In this study, there are pre-NIL and post-NIL measures, but there is also not a control group for the study to be considered a true experimental design.

This study also has portions that are observational, descriptive, and focused on developing predictions from existing theory. Descriptive analysis of sponsorship sales conditions included correlation to corporate density and corporate networking metrics, which could generate empirical predictions which may be tested as more data becomes available.

Data Collection

Data was collected through the recruiting tables of 247sports.com and then put into RStudio for analysis. This data is free and constantly updated, so the data was easily accessible, current, and easily manipulated to receive results. Other variables for the model were collected through online research that is publicly available and were verified for validity and how current the data is. These variables were put into a regression model to predict the changes and see how much of an effect each variable had on the recruiting of different schools. These predictor variables included number of major businesses within 60 miles, number of DI-A schools within 100 miles, population within 60 miles, brand value (measured by Google Trends), and school enrollment. Team success variables are controlled for in the model as well.

The variables that are included are meant to measure either NIL opportunities or other reasons a recruit might choose a school, as indicated in the literature review. Major businesses within 60 miles, brand value, school enrollment, and population are meant to measure the NIL possibilities in the area of the school. Coaching success, program success, total draft picks, and first round draft picks represented how the success of the football program and how that can affect a recruit's decision. Academics were not included as previous studies have shown that it is not a significant determinant in a recruit's decision, though it should be noted that some recruits will focus on academics more than others.

Model and Variables

Data analysis was done in RStudio and on the local machine of the researcher. Data was loaded into RStudio so that it can be manipulated to answer the research questions of this study. Tableau was used for the data visualization to see trends and put it all together at the end of the project.

A regression model was used to estimate the effect that each variable has on the change recruiting rankings from pre-NIL to post-NIL. Academic variables were excluded from this mode because the literature shows academics are not significant at the D-I level. The variables in this model include:

Class: This variable shows whether a program is in a "Power Five" (P5) conference or a "Group of Five" (G5) conference. Power five conferences are considered major conferences while group of five conferences are considered the lower level of DI-A. This has been an identified preference for recruits by Dumond (2008).

DI-A Universities within 100 miles: This variable shows how many Universities have athletes competing for some of the opportunities in the same area as the University being studied. Google Maps was used to find the value of this variable for each of the schools being studied. Google Maps is a reliable and valid source for this data, it gave the exact measurements of the distance between the two campuses.

Population within 60 miles: Much like large businesses, this variable shows the potential opportunities within an hour of the school being studied. Hoosiers by the Numbers database and tool was used to find the value of this variable. This database is automated to sum the population within a radius, making it to where it was valid for this study.

Google Trends: This variable shows the popularity of the athletic program, the larger more popular the team is, the more recognizable both the brand and the players that play for that brand are publicly. This was measured by looking at Google Trends and comparing all 130 teams. Google Trends has been used in previous studies when using popularity in their studies (Genoe et al., 2021). Being able to use it to compare schools makes it reliable and valid across all 130 programs.

Large businesses within 60 miles: This variable shows what the opportunities could be for athletes in the area (within an hour) of where their university resides. Fortune.com was used for this study. Fortune provides a map of all Fortune 500 companies for the selected year, while this does not show every business in an area, it is the most valid and reliable representation available.

School enrollment: This variable shows the size of the school and was useful to compare schools that are of the same size but might have different NIL variables. The RStudio scorecard package was used to find each school enrollment. The scorecard package provides data on each school and has been used in various studies that involve school-specific data.

Coaching success: This variable shows the average career coaching win percentage at each program over the last 15 years. Sports-reference.com was used to gather this data and is the most up-to-date reference for coaching win-loss records. Sports-reference is very reliable for coaching records.

Program success: This variable shows the winning percentage over the past 15 years of the program, this helped control for how this affects a recruit's decision. ESPN.com was used as the data source for this variable, ESPN is valid and reliable for sports records information.

Total Draft Picks: This variable shows the average number of draft picks each year that each program has over the last 15 years. Pro-football-reference.com was used for this data and is

considered an industry leader for football data, this website provides every pick of every draft. This makes it reliable and valid for this variable. This was also the same process for the first-round draft picks variable.

First Round Draft Picks: Similar to total draft picks, this variable shows how many first-round draft picks each program has had on average over the last 15 years.

Variable coding, units of measurement, and hypothesized relationships with the dependent variable are shown in Table 2.

Table 2 *Variables Table*

Variable Name	Description of Coding / Units	Expected Relationship
Recruiting Score (dependent variable)	Value of the recruiting score on 247sports.com for each DI-A college football program	N/A
Class	Value of either "P5" for major conference or "G5" for non-major conference	"P5" value will lead to better change in recruiting than "G5"
Schools in Area	Number of schools within 100 miles, value of 0 or above	Lower value will lead to better change in recruiting due to lack of competition
Population	Value measured in ten-thousands, population within 60 miles	Higher value = better change in recruiting due to NIL opportunity
Google Trends	Google Trends popularity score, measured against the school with the highest value	Higher value = better change in recruiting score due to popularity of team
Large Businesses	Number of Fortune 500 within 60 miles, value of 0 or above	Higher value leads to better change in recruiting score due to NIL opportunity
Enrollment	Enrollment of the school, measured in thousands	Higher value leads to better change in recruiting score due to popularity
Coach Success	Coach's career winning %	Higher value leads to better recruiting in general because of team success
Program Success	Programs winning % over the last 15 years	Higher value leads to better recruiting in general because of team success
Total Draft Picks	Total number of NFL draft picks in the last 15 years	Higher value leads to better recruiting in general because of team success
1st Round Draft Picks	Total number of NFL first round draft picks in the last 15 years	Higher value leads to better recruiting in general because of team success

First, a baseline OLS regression was conducted to confirm traditional recruiting main effects on the dependent variable *Recruiting score.*

$$\text{Recruiting score} = \beta_0 + \beta_1\text{Class} + \beta_2\text{DI-AUniversities} + \beta_3\text{Population} + \beta_4\text{Trends} + \beta_5\text{LargeBusinesses} + \beta_6\text{Enrollment} + \beta_7\text{CoachingSuccess} + \beta_8\text{ProgramSuccess} + \beta_9\text{DraftTotal} + \beta_{10}\text{DraftFirst} + €$$

Second, an OLS regression was used to determine the relationship between the independent variables and the change in recruiting score for the 130 programs being studies, i.e. the interaction of NIL policy with recruiting factors.

$$\%\Delta\ \text{Recruiting score} = \beta_0 + \beta_1\text{Class} + \beta_2\text{DI-AUniversities} + \beta_3\text{Population} + \beta_4\text{Trends} + \beta_5\text{LargeBusinesses} + \beta_6\text{Enrollment} + \beta_7\text{CoachingSuccess} + \beta_8\text{ProgramSuccess} + \beta_9\text{DraftTotal} + \beta_{10}\text{DraftFirst} + €$$

Regression model assumptions included that the variable relationships are linear, errors are normally distributed, and observations are independent. Robust standard errors of the coefficient estimates were used to guard against any violation of the homoscedasticity assumption. Alpha level for this study was 0.05.

Results

The data in this study had 12 variables, all with 130 observations. The variables are %Δ in Recruiting Score, Class, Pre-NIL recruiting score, DI-A Universities within 100 miles (Schools in Area), Population within 60 miles (Population), Google Trends, Large Businesses with 60 miles (Large Businesses), Enrollment, Coach Success, Program Success, Total Draft Picks over the past 15 years, and 1st Round Draft Picks over the last 15 years. Description statistics are shown in Table 3. Recruiting scores averaged 181.75 (SD = 48.71). The change in the recruiting score is the dependent variable and has a mean of –0.11, standard deviation of 0.22. Population (measured in ten thousands) has a mean of 32 and standard deviation of 35. Large business has a mean of 5.35 (SD = 9.16). Class is a categorical variable that indicates whether a program is in a major conference (P5) or a non-major conference (G5) and 50.8% fall in the P5 category.

The independent variables in the regression models included Class, Other Universities, Population, Trends, Large Businesses, Enrollment, Coaching Success, Program Success, Total Draft Picks, and 1st Round Draft Picks with the dependent variable in the regression being change in Recruiting Score. The goal of the regression was to analyze how the independent variables are related to changes in the recruiting score after NIL was implemented. RStudio Version 1.3.1093 was used for the analysis. A significance level of $\alpha = 0.05$ was used for the analysis. Bivariate correlations between the final model's continuous variables are shown in Table 4. Regression model estimates are reported in Tables 5 and 6.

Table 3 *Descriptive Statistics - Continuous*

Variables	Observations	Mean	SD	Minimum	Maximum
Δ Recruiting Score	130	-0.11	0.22	-0.86	0.30
Pre-NIL Recruiting Score	130	181.75	48.71	110.59	315.15
Schools in Area	130	1.32	1	0	5
Population (in ten thousands)	130	32	35	2	225
Google Trends	130	1.43	2.07	0.15	13.75
Large Businesses	130	5.35	9.16	0	60.25
Enrollment (in thousands)	130	22	11	3	58
Coach Success (Coach Win %)	130	0.54	0.13	0.20	0.91
Program Success (Program Win %)	130	0.50	0.14	0.16	0.91
Total Draft Picks	130	1.79	1.68	0	8.91
1st-Round Draft Picks	130	0.24	0.42	0	3.12

Table 4 *Correlation Table*

Variables	*Recruiting Score*	*Other Universities*	*Population*	*Trends*	*Large Businesses*	*Enrollment*	*Coaching Success*	*Program Success*	*Total Draft Picks*	*1st-Round Draft Picks*
%ΔRecruiting Score	*-*	*.125*	*-.260*	*.186*	*-.049*	*.190*	*.119*	*.172*	*.215*	*.143*
Other Universities		*-*	*.209*	*.068*	*.259*	*-.057*	*.005*	*-.001*	*.084*	*.068*
Population			*-*	*-.074*	***.717***	*.045*	*-.050*	*-.106*	*.007*	*-.010*
Trends				*-*	*-.110*	*.318*	***.547***	***.619***	***.844***	***.867***
Large Businesses					*-*	*.007*	*-.151*	*-.119*	*-.029*	*-.059*
Enrollment						*-*	*.157*	*.136*	*.304*	*.273*
Coaching Success							*-*	***.764***	***.622***	***.560***
Program Success								*-*	***.690***	***.659***
Total Draft Picks									*-*	***.904***
1st Round Draft Picks										*-*

Very High (>.90) | High (>.70) | Moderate (>.50) correlations all in bold

Table 5 *Baseline Regression Results*

Variables	*Estimate*	*Std Error*	*T-Value*	*P-Value*
Class	*46.77*	*3.81*	*12.515*	***0.000******
Other Universities	*3.08*	*1.66*	*1.854*	*0.067*
Population	*-0.04*	*0.07*	*-0.585*	*0.556*
Trends	*8.31*	*1.63*	*5.086*	***0.000******
Large Businesses	*0.07*	*0.26*	*0.259*	*0.796*
Enrollment	*0.31*	*0.16*	*1.930*	*0.056*
Coaching Success	*37.85*	*19.12*	*1.979*	***0.050****
Program Success	*43.76*	*19.93*	*2.196*	***0.030****
1st Round Draft Picks	*3.84*	*8.06*	*0.477*	*0.634*

*** = Significant at .001 | ** = Significant at .01 | * = Significant at .05 | N = 130 | Adjusted R^2 = 0.8619 | F(9,120) = 90.49 | P-Value = 0.000

Table 4 shows the correlation table for this study, showing the correlations of the 10 continuous variables looked at. Program success was moderately correlated with both total draft picks and 1st round draft picks. Coaching success was highly correlated with program success and moderately correlated with the draft pick variables. All of these make sense as programs with the best coaches tend to win the most games and have the most draft picks. Population was highly correlated with large businesses; this is important as they are two "NIL" variables that are highly correlated with each other. Despite this, they did not suffer from severe collinearity in the final model, allowing for independent estimates of their marginal effects. Google trends was highly correlated with both draft pick variables, as well as moderately correlated with coaching success and program success. These correlations show that the teams that win the most are also the most popular. The only very high correlation was between total draft picks and 1st round draft picks with a value of .904, this is obvious as it is rare to see a program with a lot of draft picks and none in the first round. After seeing the high correlation between total draft picks and 1st round draft picks (.904), there were concerns of collinearity problems. After performing a Variable Inflation Index test on the mode, collinearity problems were evident. This led to removing the total draft picks variable from the model estimations, which led to the adjusted baseline regression being as follows.

$$\text{Recruiting score} = \beta_0 + \beta_1\text{Class} + \beta_2\text{DI-AUniversities} + \beta_3\text{Population} + \beta_4\text{Trends} + \beta_5\text{LargeBusinesses} + \beta_6\text{Enrollment} + \beta_7\text{CoachingSuccess} + \beta_8\text{ProgramSuccess} + \beta_9\text{DraftTotal} + \beta_{10}\text{DraftFirst} + €$$

The adjusted research regression now looks as follows.

$$\%\Delta \text{ Recruiting score} = \beta_0 + \beta_1 \text{Class} + \beta_2 \text{DI-AUniversities} + \beta_3 \text{Population} + \beta_4 \text{Trends} + \beta_5 \text{LargeBusinesses} + \beta_6 \text{Enrollment} + \beta_7 \text{CoachingSuccess} + \beta_8 \text{ProgramSuccess} + \beta_9 \text{DraftTotal} + \beta_{10} \text{DraftFirst} + €$$

Table 5 shows the baseline regression results. The model had a statistically significant fit (R^2=0.862, F(9,120)=90.49, p < 0.001). Significant factors included class and Google trends which had p-values < 0.001. Program success and team success were also significant at the .05 level. It should be noted that enrollment and other universities would have been significant at the 0.1 level, which makes them not statistically significant in this study, but could potentially be significant (i.e., small effect sizes) within a larger sample.

Table 6 shows the main regression results of the study, both for each variable individually and for the overall model. The table shows the intercept, standard error, t-value, and p-value for the 10 variables that were in the regression. Population, Large Businesses and Class were both deemed statistically significant at the .05 level, while the other independent variables were not significant. Population had a p-value of < 0.001 while Large Businesses and Class had p-values of < 0.05. The overall regression model had a statistically significant fit F(9,120) = 3.549, p = 0.01 and an adjusted r-squared of 0.1508.

Table 6 *Research Regression Results*

Variables	*Estimate*	*Std Error*	*T-Value*	*P-Value*
Class	*.102*	*.043*	*2.383*	***.019****
Other Universities	*.009*	*.019*	*.467*	*.641*
Population	*-.003*	*.001*	*-3.727*	***.000****
Trends	*.004*	*.018*	*.201*	*.841*
Large Businesses	*.006*	*.003*	*2.117*	***.036****
Enrollment	*.003*	*.002*	*1.718*	*.088*
Coaching Success	*-.027*	*.214*	*-.128*	*.898*
Program Success	*.160*	*.223*	*.716*	*.475*
1st Round Draft Picks	*-.046*	*.090*	*-.513*	*.609*

*** = Significant at .001 | ** = Significant at .01 | * = Significant at .05
N = 130 | Adjusted R^2 = 0.1508 | F(9,120) = 3.549 | P=Value = 0.001

Discussion

The results of the baseline regression indicate that the data collected are in line with prior research on recruiting factors. Dumond (2008) concluded that being in a major conference (class) and team success (program success) were significant factors in recruits choosing schools. The data in this study is consistent with those core findings. The findings here also make an important contribution to the literature in that this is the first application of Google trends data when studying brand popularity regarding recruiting rankings. This is an extension of past literature that has begun to use Google trends data as a proxy for popularity in sport (Genoe et al., 2021).

The primary regression analysis using change in recruiting scores shows that large business and population are significant at the .05 level, which is important to conclude there is some interaction with NIL variables on the change in recruiting rankings. This is the primary

concern of the research question, and it is very notable that there is a relationship between change in recruiting score and these NIL-linked variables.

Although population is significant, it is surprising that it has a slightly negative coefficient. This means that the higher populated cities got worse recruiting scores on average since NIL was implemented. This data suggests that every 10,000 person increase in population is associated with a 0.003 unit decrease in recruiting score from pre-NIL to post-NIL. This is a surprising development, but there are several unique factors that could help explain this outcome For example, USC, a high population program, went from recruiting three top 20 classes in a row to being 65th in 2022. USC had a coaching change and took more transfers than normal because of the coaching change, causing their recruiting score to be lower. This is only one example, but drastic situations such as USC's may help explain why this coefficient is negative. USC is one of a few schools to do so. Another factor could be the service academies, which recruit differently than other schools, but have seen their recruiting scores drop and they are in highly populated areas. Another explanation may be attempts by boosters in smaller cities to compensate recruits who may be willing to trade off large city amenities for direct payment from smaller community boosters (through owned businesses), which was not possible pre-NIL.

The most important result is the large businesses variable being significant. This is extremely important, as it shows that NIL opportunities could now be playing a part in changing recruiting rankings, even if those changes haven't fully taken root yet and made their ultimate impact. Every additional major business in a university's area is associated with a 0.006 unit increase in recruiting score. As NIL becomes more prominent in recruiting in future years, more of these variable interactions should start to be significant at the effect of NIL should become easier to identify. But large businesses being significant does provide a baseline of showing that

NIL policy is a significant factor in the change in recruiting rankings in the pre-NIL era and the post-NIL era.

While the large businesses variable was significant, these results also show that a majority of the control variables did not have a significant effect on the change in the recruiting score, i.e. they did not interact with the NIL policy change. This is the first time that Google trends has been used in this capacity, it is concluded that Google trends was significant in the baseline regression, making it significant in predicting recruiting scores. But it was not significant in predicting change in recruiting scores. This suggests that the overall program popularity may not yet interact with (or provide) increased NIL opportunities for recruits, e.g. increased media presence. It should be noted that there is also a possible impact of enrollment, which is indirectly measuring the alumni base size. Enrollment was significant at the .1 level in the change score regression ($p = 0.088$). With a larger sample size, it could very well be a significant interacting factor with the NIL policy change. There are several factors that probably contributed to the lack of key independent variables interacting with NIL policy change, the most likely being the lack of time between NIL implementation and this study. Many of the NIL variables may need more time than one year to noticeably change recruiting practices. Program popularity and alumni related opportunities may fall in this category.

A confounding variable that could have caused a change in results is the influence of the transfer portal. With the prominence of the transfer portal in college football today, some programs chose to take less recruits from high school and more recruits from the transfer portal. This led to some teams having significantly lower scores than they normally would, in turn making it appear that these programs are recruiting worse than they are. The transfer portal is still relatively new to College Football, and only recently did databases start to work transfers

into their recruiting score data, but that data is not available for all the years in this dataset. This made it impossible to see how transfers would have changed recruiting scores in previous years, which could have contributed to some of the unexpected conclusions, such as population having a negative coefficient.

It is important to note that the dependent variable is the change in recruiting score, not recruiting score in general. This greatly affects the independent variables of Coaching Success, Program Success, and the Draft Pick variables. These variables significantly affect recruiting score, meaning that the teams with the best coach and most success would recruit well. But this does not significantly affect the *change* in the recruiting score, as the successful teams recruited well pre-NIL and post-NIL, making it to where there was no significant change. This was the expected result of using change in recruiting score.

Lastly, one aspect that should be mentioned is that NIL could cause a change in the amount of corporate sponsorship revenue being brought in by the athletic programs themselves. With corporate sponsorships accounting for such a large portion of revenue for an athletic department, this would greatly affect the amount of revenue for the program and in turn, force them to adjust the budget to reflect these changes. This is a topic that will need to be developed and researched in the future.

Limitations and Future Research

Limitations of this study centered around the data collection window. Having more time would allow more post-NIL data to be collected and draw more conclusions from changes in the recruiting rankings, such as using panel regression or repeated measures ANOVA. Another limitation of this research was that transfers were not factored into recruiting rankings, therefore the affect NIL had on transfers were not able to be measured. Lastly, financial data is not

available at the time of the study for anywhere after 2019, which led to the financial portion of the study being done on theory instead of with data.

Future research should center around getting more data points for the post-NIL data, giving the trends of the data more time to reach an equilibrium. Studies could also be done once the financial data has come out on the post-NIL years to see concrete evidence on how NIL is affecting the school's financial data. Future research could also analyze how different schools or sports are handling NIL and see if there are different approaches that are leading to more success than others. Lastly, future research should factor the transfer portal into the results. Transfer portal recruits have started to factor into recruiting rankings, research should represent these results and figure out how to incorporate the transfer portal into their data so that the results and conclusions have that aspect covered.

Conclusion

With NIL just recently starting in college athletics there is very little research on the topic, there is virtually no research done on how it affects the financials of schools and how it relates to general business theory. This study is very important to lay a groundwork on what to expect from NIL in the future and to see how general business ideas can be tested by using sports as a case study.

Research question 1 examined how NIL affects recruiting rankings in college football and which NIL variables interacted with percent change in recruiting score. There is some evidence that NIL variables significantly affect recruiting rankings, esp. with corporate density, but as time goes on and there is more data it is important to see if this trend continues and becomes more concrete, e.g., brand popularity and alumni-linked NIL deals.

Overall, this study does provide a baseline of what to expect as NIL moves forward, which was the goal of the study. Future studies should build on this groundwork as more data comes in for the NIL era and should be able to provide further conclusions as time goes on.

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