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The Madness of March: A Quantitative Look at Cinderella Stories in the NCAA Division I Men's Basketball Tournament

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ABSTRACT

This study looked to determine if being classified as a Cinderella Story team in the NCAA Division I Men's Basketball Tournament, also known as March Madness, led to a statistically significant change in NCAA Division I men's basketball spending for that team's respective institution one, two, and three years after being labeled. The purpose of this study was to determine the effect of men's basketball spending on teams that are Cinderella Stories in the NCAA Men's Basketball Tournament. It aims to understand how spending differs between athletic programs whose characteristics mirror those of Cinderella Stories and how expenses change before and after being labeled a Cinderella Story. The sample for this dissertation is composed of teams who were seeded between 9th and 15th and were not ranked in the preseason AP Top 25 poll. The treatment for this dissertation is composed of the following teams: those that were not ranked in the preseason Associate Press Top 25, those that won 2 games or advanced to the Sweet 16 and were seeded between 9th and 15th. The comparison for this dissertation is composed of the following teams: those that were not ranked in the preseason Associated Press Top 25, those that won 1 or 0 games in The Tournament, and those that were seeded between 9th and 15th. This study determined that there was no statistical significance on whether a team was a Cinderella Story and men's basketball spending for that team's institution.

Keywords: NCAA, Cinderella Story, Division I men's basketball, March Madness, college athletics, higher education

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CHAPTER 1: INTRODUCTION

Background

The National Collegiate Athletic Association (NCAA) Division I Men's Basketball Tournament has influenced higher education in a multiple of ways. A Cinderella Story is beneficial for institutions because it serves as the "front porch." The Cinderella Story exposes the institution to a national audience as the tournament is aired on national television and receives an abundance of media coverage. The national audience puts the institution in front of viewers who may be potential applicants. Furthermore, success through winning, bolsters the institution's national profile even more, giving it coverage, it would not have garnered otherwise. As a result, the added exposure influences the number of applicants and enrollment. The institution's success can also compel donors to increase their contributions as they see the value gained from the additional coverage from winning. Thus, unexpected success and winning yields advantageous results to higher education institutions.

Every March, the NCAA Men's Basketball Tournament is held. It is composed of the top teams in Division I athletics which is regarded as the premier division. The teams that participate are based on their record which encompasses a team's wins versus losses, ranking based on different polls, and whether the team won their conference championship. Each season, some teams know that the chances of winning are slim because of the strength and skill of their opponent. Their chances are also slim because of the hierarchy of the NCAA which delineates institutions into subdivisions and conferences. Those subdivisions and conferences influence the amount of resources institutions have at their disposal. The resources are important to discuss because it creates the split between the top echelon of athletic programs and the bottom level of athletic

programs. Therefore, when a team that is in a lower echelon conference defeats an opponent, a Cinderella Story is derived.

Cinderella Story is more than a folk tale that exemplifies overcoming struggles and unexpected reward, it is a term that has become synonymous with March and every NCAA's Men's Basketball "March Madness" Tournament. The Cinderella Story is the feel-good story that the media loves to glorify and fans revel in excitement. It signifies beating the odds, being the little engine that could, David versus Goliath, the underdog overcoming the odds.

Cinderella Stories in sports have been around since 1939 when Lubbock, Texas reporter Jay Harris of the Avalanche Journal referred to the Lubbock High School's football team as the "Cinderella Kids." The term was used again in 1950 when City College of New York won the National Invitational Tournament (NIT) and NCAA Tournament. While the slipper fit, it was then lost when seven players pleaded guilty to points shaving (ESPN, 2009).

When Cinderella meets the prince, or when the underdog team qualifies for the tournament, those teams are in the "Big Dance." So, what makes the "Big Dance" so appealing? One reason is that college basketball provides the opportunity for some teams to play teams that have renown sports programs. Just like any sport, there are the powerhouse teams and the bottom-of-the-barrel teams. The allure comes from the hope that the less successful team can defeat or "upset" the powerhouse team, hence the "Cinderella" reference. So why then are the "Cinderella" or "upsets" so appealing?

Cinderella Stories are so appealing because unexpected victories are more emotionally satisfying than expected victories; conversely, expected losses are not as hard to take as unexpected losses (Vandello et. al., 2007). Also, a motivated perception occurs such that people believe

underdogs' performance reflects great effort, which tends to be associated with favorable evaluations (Farwell & Weiner, 1996; Wann et al., 2002).

A Cinderella Story is beneficial for an institution of higher education because of the exposure the win generates in the local and national media. Due to the unexpected triumph, the institution experiences a phenomenon known as the "Flutie Effect" (Johnson, 2006). The "Flutie Effect" originated from Boston College's football quarterback, Doug Flutie, and his last second pass that ended in defeating the reigning national champions, the University of Miami (Florida). The added exposure gave Boston College more applications, souvenir sales, and increased alumni donations (Johnson, 2006).

While the "Flutie Effect" was the first athletic example of a phenomena that gave its respective institution benefits it had not had prior, there are studies that explore how college athletics provide direct and indirect effects on the institution itself. Studies have been focused on how athletics can influence some of the major measurable factors of an institution's standing. Some of those factors include alumni donations and gifts, applicants, and acceptance rates although prior research has yielded different and conflicting results which question the statistical significance those factors have in relation to the "Flutie Effect." Those factors are also indicative of the higher education arms race.

The arm's race is important because exemplifies the competition among institutions in factors they deem important for their own success (Pope & Pope, 2009, 2014; Hemphreys, 2006; Getz & Siegfried, 2010). Alumni donations applicants, enrollment, and athletics are a part of that arms race.

Studies have shown that athletic success yield benefits such as ticket sales, concessions, parking, television broadcast rights fees, donations, licensed merchandise sales, and bowl

appearances (Humphreys & Mondello, 2007). Because of the benefits of athletic success, colleges and universities invest and develop the necessary resources. Success and its meaning are subjective as each institution has their own standard for which they measure success. In terms of athletics, success is measured by winning and winning is determined by spending. To win, institutions have to spend money on acquiring and building the best talent and resources. Talent is invested in by hiring the proper athletic administration and coaching staff. Resources, such as practice facilities, fitness centers, playing fields, and amenities are needed as well. By having the proper resources, coaching, and administration, college leaders aim to attract the best athletes especially in revenue-generating sports such as football and men's basketball. With each institution aiming to be the best, the athletic arm's race is developed.

The athletic arm's race is the competition among each institution and their athletic program. Each institution's aims to develop the best facilities and hire the best coaching talent in order to attract top athletic talent. If they are successful in attracting the right talent, then their chance of winning is greater. While the road to success is clear in theory, the practicality makes it a challenge because so many institutions are traveling on the same path seeking the same talent. With the path to success is congested, each institution tries to one-up the other by investing in their facilities, coaching, and amenities. The investment does come at a price which is evident through the increased spending and cost.

Statement of the Problem

The rise of the arm's race has led to a fight among institutions and their athletic departments to invest in human capital and facility capital to attract the most talented student athletes. This study will look at changes in athletic spending for teams that are an underdog or a Cinderella Story. The Cinderella Story leads to the Flutie Effect which has led to changes at some institutions such

as with increased applications, enrollment, and alumni donations. Unlike prior literature that looks at the arms race, this research looks at teams that are considered Cinderella Stories. The goal of this study is to determine if the Cinderella Story team's success leads to a significant difference in men's basketball spending. Cinderella Stories have led to changes in enrollment, applicants, admissions, test score benchmarks, and gifts or alumni donations. In essence, Cinderella Stories lead to the Flutie Effect which expound on the athletic arms race where institutions compete to obtain the best athletic resources such as facilities, coaching staff, and student-athletes.

Examining changes in spending will help policymakers determine if being considered a Cinderella Story is beneficial to the athletic program and institution as the findings will shed light on how being a Cinderella Story affects enrollment, applications, admissions, test score benchmarks, and gifts such as alumni donations.

It is important to note that Cinderella Stories not only earn more winnings for their own institution, but also those of who are in the same athletic conference. This is important to note because it considers the number of teams from a particular conference that qualify for a tournament. Even if multiple teams from the same conference qualify for the tournament but only one is a Cinderella Story, then those additional earning will influence athletic spending and expenses.

What also makes this study different from others is the definition of a Cinderella Story. While other studies, (Childs, 2014), have defined Cinderella as a team that wins one game in the men's basketball tournament that is not a member of one of the Power-Five Conferences, the definition for this study is based on the Associated Press' Top 25 (AP Top 25) ranking, seeding in the Tournament, and winning two games also in the Tournament. The reason these metrics are used is because they are measurable and have clear, distinctive cutoffs that separate a Cinderella

team from a non-Cinderella team. What makes the AP Top 25 unique based on other metrics is that the rankings are based on how members of the media view the different teams based on each team's record (wins and losses) and the strength of their opponents (their wins and losses). The media are important stakeholders because they disseminate information to the masses who then form their own opinions. Understanding the media's perception influences what constitutes a Cinderella Story.

Purpose of the Research

The purpose of this research is to determine the effect of men's basketball spending on teams that are Cinderella Stories in the NCAA Men's Basketball Tournament. It aims to understand how spending differs between athletic programs whose characteristics mirror those of Cinderella Stories and how expenses change before and after being labeled a Cinderella Story.

Current research focuses on unexpected athletic success on institutional factors such as applications (McEvoy, 2005, Toma & Cross, 1998; Chressanthis & Grimes, 1993; Pope & Pope, 2009), higher achieving students (Mixon & Ressler, 1995; Pope & Pope, 2014; Tucker & Amato, 1993), graduation rates (Tucker, 2004), and donations (Frank, 2004). What makes these studies different is that they do not use the term Cinderella Story, nor do they focus on athletic programs that may be given an underdog status. In addition, those studies do not focus on the NCAA Division I Men's Basketball Tournament or men's basketball spending.

There are a host of studies that discuss the rise of an athletic arm's race (Chapman, MacDonald, Arnold, & Chapman, 2018; Bass, Jordan, & Schaeperkoetter, 2015; Jones, 2012; Caro and Elder, 2017; Tsitsos and Nixon, 2012; Jedge, Peterse, Johnson, & Bellar, 2014; Hoffer, Humphreys, Lacombe, Ruseski, Leeds, & Von Allmen, 2015). While these studies discuss the competition among the different athletic programs, they do not consider Cinderella Stories,

unexpected success, or the NCAA Men's Basketball Tournament. These studies examine athletic success in general, not specific to unexpected success such as a Cinderella Story.

Research Questions

To gauge the relationship between being considered a Cinderella Story and changes in its respective institution's men's basketball expense, the following research question has been devised:

- Does being considered a Cinderella Story team lead to a statistically significant change in NCAA Division I Men's Basketball Spending for that team's institution one, two, and three years later?

Significance

This study is significant because of the relationship between college athletics and higher education institutions. Athletics serves as the front porch to a university. This means that athletics posits institutions in front of the masses which brings exposure that the institution would not have had otherwise. This is particularly important for institution' whose teams play football and men's basketball. These two sports are revenue generating and draw large television and media contracts.

Since athletics brings attention to institutions, studying Cinderella Stories and athletic expenses will be beneficial to institutional shareholders by providing them findings that will aid in developing clear business models, marketing strategies, and policies. This study will be especially beneficial for those who are not perennial powerhouse teams and do not know how to navigate the athletic landscape since their programs do not achieve the same amount or level success as others. The findings from this study will help institutions determine how spending influences success.

CHAPTER 2: LITERATURE REVIEW

The purpose of this literature review is twofold. One purpose of this literature review is to explain the deviation between the subdivisions and conferences of the NCAA and how those differences separate the top athletic programs from the bottom. This will shed light on why a Cinderella Story is important to higher education through changes in admissions factors and gifts such as alumni donations. By covering the aforementioned factors, the reader will be able to understand how college athletics and higher education are intertwined and become aware of the benefits athletic success bring to institutions.

Structure of the NCAA Subdivisions Conferences

While the NCAA is known as the premier sanctioning body of college athletics in its colloquial sense, the organization defines itself as "a member-led organization dedicated to the well-being and lifelong success of college athletes" (NCAA, 2019a). It is composed of 1,117 colleges and universities that are divided into 100 conferences across three divisions. The sanctioning body says that it prioritizes academics, well-being, and fairness so college athletes can succeed on the field and beyond (NCAA, 2019a). However, this claim can be disputed based on today the issues that permeate such as college-athlete amateurism, recruiting scandals, and academic fraud (Ford, 2018; Lederman, 2019; McCain, 2019; New, 2016; Schlabach, 2017; Tracy, 2019).

With issues within the NCAA and its member schools noted, it is important to realize that those issues are tied to Division I athletics. In 1973, the NCAA divided its member institutions into three divisions – I, II, III. The goal of the division was to align institutions that were regarded as being similar with respect to philosophy, competition and opportunity (NCAA, 2019b).

Division I institutions have the largest study bodies, the largest athletic budgets, and the most athletic scholarships. Within Division I are three subdivisions; the Football Bowl Subdivision, the Football Championship Subdivision, and a third that does not sponsor football (NCAA, 2019c). Like Division I, Division II offers athletic scholarships but do not offer the same amount as Division I (NCAA, 2019d). Division III, unlike Division I and II, puts more emphasis on academics than athletics in terms of scheduling. Division I and II require student-athletes to complete coursework outside of normal course hours but Division III builds athletic schedules around the students' academic schedule (NCAA, 2019e). The hierarchy the NCAA develops puts the most emphasis on Division I which is where Cinderella Story teams come.

The Football Bowl Subdivision (FBS) institutions play in bowl games which are conducted after the season. The Football Championship Subdivision (FCS) is composed of the top teams which are eligible to compete for the national championship. FBS institutions have more resources and are more prestigious than FCS ones. FBS are those that are considered "elite" and have the highest amount of talent and resources based on the institution's own enrollment size and funding. The FBS differs from FCS regarding scholarship type and game attendance requirements. FBS institutions can award 85 student-athletes' full scholarships while FCS can only give aid to 63. FBS institutions must average 15,000 people in attendance per game through actual attendance or paid attendance. In addition, FCS institutions do not compete for a national championship while the FBS does (Kirshner, 2018). However, although there are different subdivisions, institutions in each subdivision can have a game against each other. Once again, because of the disparity between subdivisions, the perception of winning is dependent on whether the team with lesser resources, FBS, defeats the team with more resources, FCS. Teams that defeat their more resourceful

opponent are championed because of their ability to take down the powerhouse, just like a Cinderella Story in the NCAA Men's Basketball Tournament.

Another element that affects the way winning is perceived stems from the divisions, especially the Power-Five conferences which are composed of the most prestigious and resources institutions. The Power-Five conferences do not have a true definition, but they are understood to be five conferences within Division I that have been given autonomy by the NCAA. For the 2014-2015 athletic season, the NCAA granted autonomy to the Atlantic Coast Conference (ACC), the Big 12 Conference, the Big Ten Conference, the Pac 12 Conference, and Southeastern Conference (SEC). The autonomy granted was to give those five conferences the ability to develop their own rules for which they would like to be governed. The autonomy has given those conferences the ability to determine cost of attendance stipends, insurance benefits for current and former student-athletes, staff sizing, and other ancillary athletic operation necessities and amenities (NCAA, 2016). Because of the autonomy, the institutions in the five conferences can vote in favor of their own self-interest. With the Power-Five conferences consisting of the most powerful and prestigious institutions, their expectations for winning become higher than the remaining institutions in the other conferences.

Effects on Winning and On-Field Performance

One of the first studies pertaining to the empirical effects of athletics on higher education was conducted by Litan, Orszag, and Orszag in 2003. Their analysis concluded that there was no statistical significance in study of the relationship between athletic expenditure and winning. The researchers used data from the Equity in Athletics Disclosure Act (EADA) which reports financial data from institutions' athletic departments. The authors noted that increased operating expenditures on football or basketball in FBS institutions are not associated with medium-term

increases in winning percentages, and higher winning percentages are not associated with medium-term increases in operating revenue or net revenue (2003). It is important to note that the research methods used do provide several limitations. One critique of this article is the focus on Division I-A schools. It is a wide range of schools with a wide range of enrollment, endowment, as well as athletic budgets with different sports as the prominent one. To perfect this study, research can be conducted on a specific subdivision of schools such as the Football Bowl Division, Football Championship Division, or Division I-Non-Football schools.

Orszag and Orszag updated their 2003 studies in a new report that increased the sample size (2005). The authors also expanded the period for which they covered by using a 10-year period rather than the 8-year period. While the data was updated, the results of their study remain unchanged. They continued to find no statistical significance between spending and on-field success, higher revenue, more alumni gifts, or academic quality of students. It is interesting to note that the results remained unchanged because it shows consistency in their replication of their research methods.

Orszag and Israel (2009) provided another update. In the previous studies, the authors did not find any statistical significance, but the new report used data from 2004 to 2007 and the results actually yielded a small positive statistically significant relationship. The relationship was found for football school or schools that are known to have a Division I-A football program. However, the authors surmise that the small positive relationship might be because of added expense due to an extra game which is usually a "Bowl Game." It is also interesting to note that there was a statistical significance found for schools whose primary revenue-generating sport is men's basketball. This can be attributed to the additional games the team plays if they make the NCAA Men's Basketball Tournament which also yields added expenses. One benefit Orszag and Israel

did find was that based on their data from 2004 to 2007, there was a statistically significant relationship between athletic expenditure and alumni donations (Orszag & Israel. 2009). While the findings proved to be significant, they do have some limitations. Once again, the sample pertained to football schools which have different operating budgets, revenue, and expenditure than those schools that do not have Division I football programs.

Won (2004) was the first to research the relationship between athletic expenditure and on-field success that considered other sports. As Jones (2013) noted, the limitations of the studies pertain to the focus of basketball and football. Won (2004) goes on to look at other sports as it has not been studied how total athletic spending effects on-field achievement of the entire athletic division. Won used the data as gathered from the National Association of Collegiate Directors of Athletics (NACDA) Directors' Cup scores and was able to find a positive statistically significant relationship, NACDA Directors' Cup scores uses specific variables as part of an algorithm to rank schools based on their on-field success or winning. A limitation of Won's study is the use of the independent and dependent variables. Director's Cup scoring methods can be changed without notice. It is important to note that the methods were altered in 2008-2009 but the study did not consider that change.

Theoretical Framework: The Advertising Effect

With athletics serving as the front porch of the university, benefits the institutions receive derive from the exposure from their athletic team(s). The main source of exposure comes from the media. Broadcasting events is what puts college athletics in front of a national audience. From Labor Day weekend through the end of June, college athletics can be found on several television stations. From Labor Day through the first week of the new year, Saturday coverage is blanketed with college football games. From Thanksgiving through the beginning of April, college

basketball, men's, and women's, can be found on a number of national and regional networks. Throughout the spring, baseball, women's softball, and lacrosse are some other sports that also grab the attention of television networks (Chung, 2013). Having television exposure gives the institutions visibility, television ratings for those games.

The pinnacle of college athletics advertising effect is seen through the aforementioned "Flutie Effect" since it was the phenomena that sparked a spike in benefits for the sport's respective institution, Boston College. The "Flutie Effect" lead to an increase in nationally televised games, applications, and merchandise sales. Furthermore, the exposure led to increased alumni donations and a thirty percent increase in applications (Johnson, 2006; Chung 2013). The "Flutie Effect" shed light on the role college athletics has on higher education. It sparked a new area of research that could help policy makers understand how to utilize college athletics effectively when it comes to marketing their respective institution.

Smith (2008), Chung (2013), and Childs (2018) delve into the advertising effect of college athletics success on its respective institution. Smith found that neither the proportion of freshmen from the top 10th of their high school class, or with a grade point average of B or better, nor the number of entering National Merit Scholars are significantly related to measures of success.

Freshman (SAT) scores are marginally related to one aspect of basketball performance. The study conducted by Chung (2013) differed from Smith (2008) because of different data sources and different statistical methods. Thus, the results of each study do not necessarily directly correlate to each other. Using different sources and methods suggest that the aim, study's objective, and data distribution are not congruent.

Chung found that athletic success has a significant impact on the quantity and quality of applicants that a school receives but students with lower-than-average SAT scores have a stronger

preference for athletic success. However, students with higher SAT scores have a greater preference for academic quality. While studying similar variables, Smith and Chung yield different results. Smith's findings supported Frank (2004) while Chung (2013) used a different dataset which yielded similar findings in the short-term but inconclusive long-term implications because of his different model. Childs (2018) supports Smith (2014) and Frank (2004) in that institutional financial and admission factors are impacted by an institution making the tournament and/or winning a game, yet when these findings are measured three years after the tournament appearance both definitions of a Cinderella team is not significant regardless of what controls are being used (Childs, 2018). The only statistically significant finding three years out was if a team is a Cinderella, then there is a significant decrease in the number of applications to the school and the percent of students admitted is also significant positive (Childs, 2018). While Chung's findings different slightly due to a different model, all three studies find that there are short-term benefits with respect to application rates. It is interesting to note that the findings are similar even though Smith used a different dataset than Chung and Childs. This supports the notion that regardless of data, there is a benefit to having athletics as a marketing and advertising tool. However, the sustainability benefits still are still in question because of the lack of research on the topic.

The Arm's Race Among Higher Education Institutions and Athletics

As previously mentioned, college athletics is the front porch of the university by being a Cinderella Story which incites the Flutie Effect. As the front porch to the university, college athletics is the means to which universities exercise to promote themselves. With evens such as the men's basketball tournament being nationally televised, qualifying for the tournament is the prime medium to reach a national audience.

To qualify for the tournament, each university must compete against each other, hence the arms race. The arm's race is also known as non-price competition which is based off Bowen's (1980) theory of revenue of cost. Bowen's theory explains that institutions spend all their revenue. with hopes of increasing its prestige and education quality. This correlates to athletics, the arm's race, and non-price competition as institutions with the largest budgets and expenses achieve more success and exposure than those with less.

Non-price competition is a marketing concept that explains that colleges and universities compete against each other through investments to attract students, student-athletics, coaches, administrators and all the other constituents that seek to be a part of that respective college or university. In higher education, the arm's race is evident through each institutions' branding and their marketing strategy.

Branding and marketing in higher education has flourished due to marketization. Marketization, in this sense, is the role that internal and external stakeholders have on influencing the purpose of higher education. Higher education institutions provide several public goods, including student human capital development, basic and applied research, and economic development of surrounding communities (Meier and O'Toole, 2011).

Marketization, in essence, serves as a genesis for an arm's race as institutions clamor with work with other organizations to garner additional funding and resources to advance their own respective mission. With the arm's race born, the pendulum swings to marketing and branding to promote those missions.

Branding is a strategy for communication and image building among target groups (Karens et al. 2016) while marketing is the communications component of the strategic branding process for an organization (Eshuis, Braun, and Klijn, 2013; Kavaratzis 2004). In order to be market a

brand effectively, the audience needs to feel a connection which is known as brand equity (Anholt 2007; Keller 1993). To be successful, each institution must focus on differentiation which makes it stand out and be unique. Once again, success is measured in different ways based on the goals set forth by the respective institutions. Common success measures include enrollment, donations, and grant funding.

With colleges and universities jockeying to stand out, the role of isomorphism comes into play. Isomorphism is "a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions" (DiMaggio and Powell, 1983). DiMaggio and Powell note three types of isomorphism: coercive, mimetic, and normative. Coercive isomorphism relates to the role external stakeholders, such as the NCAA governing body itself, has on the institution. The institution must abide by the policies the set forth by the NCAA (Ashworth, Boyne, and Delbridge, 2009).

Mimetic isomorphism explains that institutions copy each other when faced with indecision on how to handle different concerns. Consequently, homogeneity ensues, and the amount of differentiation minimizes (Ashworth, Boyne, and Delbridge, 2009). Mimetic isomorphism occurs when lower performing institutions adopt a marketing strategy that emulates their higher performing counterparts (Rabovsky, 2014). One example of mimetic isomorphism within unexpected athletic success is with property, plant, and equipment. In order to maintain attractiveness, institutions will invest in their athletic facilities and human capital in order to attract the most talented and skilled student-athletes. This is the true genesis of the athletic arm's race.

A study by Fay and Zavattaro looked at the role of isomorphism in higher education (2016). They hypothesized that an institution will be more likely to adopt a strategic marketing and branding initiative as the total number of similar initiatives increases nationally and within the

same state and after a similar institution has adopted such an initiative. This hypothesis is based on off mimetic and coercive isomorphic forces. They expect coercive isomorphism to occur based on pressures from internal and external stakeholders such students, faculty, and government agencies (Bock, Poole, and Joseph 2014).

The role of isomorphism in higher education extends the marketing strategies institutions employ in order differentiate themselves. Through isomorphism, policy makers are able to critique their own universities to discover areas of strengths, weaknesses, opportunities, and threats, a true SWOT analysis. The SWOT adds value to developing growth strategies that ultimately progress the isomorphic role in higher education. Ultimately, isomorphism is the catalyst to the institutions branding.

Using data from the Integrated Postsecondary Education Data (IPEDS), Day and Zavarrato (2016) look at institutional isomorphism which is the umbrella term they coin for memetic and coercive isomorphism. Using logistic regression, Day and Zavarrato constructed a longitudinal data set of institution-year observations from 2006 to 2013. Data on strategic branding policies by first creating a spreadsheet of the research extensive universities. They then conducted a Google search and a search of the university's main website for terms such as "brand," "branding," and "marketing." They added "identity" when several universities used that terminology to describe their efforts.

One area they did not delve into was athletics. They deemed that athletic branding deal with issues of licensing agreements, product development, and television contracts. They go on to explain that athletic branding policies are highly visible, costly, and certainly influence the brand perception of the university (Lee et al. 2008). While significant that they left out athletic branding,

the purpose here is to understand isomorphism which indeed does have a role in athletic branding which Day and Zavarrato recognize.

Day and Zavarrato found that isomorphism does influence branding strategies and "publicness" matters. With respect to athletic branding, this supports the concept that athletic success serves as the front porch to the university as it posits the university in front of the public with its media exposure. Isomorphism's influence of branding strategies also can deduce the thought that athletic success affects the public's perception of the institution which is found to be an element of university branding (Day and Zavarrato, 2016).

With isomorphism at the heart of institutional competition and branding, one area of specific branding that does not have research pertaining to isomorphism is athletics. While college athletic branding has been researched in the sense of how athletic success influences the amount of alumni donations, enrollment, and applications, there is little research on unexpected success and the arm's race and institutional spending which is due to the subjectivity of defining unexpected success. While the lack of definition is a limitation to studying Cinderella Stories and the literature already on it, there is literature on the athletic arm's race. Specifically, the arm's race is based on spending which is a proponent of memetic isomorphism.

The genesis of the athletic arm's race is based on the commercialism of American higher education. As colleges and universities began to charge spectators to attend college athletic events as early as the 19th century (Tsistsos and Nixon II, 2012), college athletics in-turn generated revenue for the institution. Since the NCAA prohibits paying its student-athletes as of the time of this study, college athletics uses that revenue to spend, or invest, in its athletics programs through its day-to-day operations; playing, practice, and fitness facilities; coaching, staff, and

administration; and academic resources for the student-athletes just to name a few (Clotfelter, 2011).

One area of the arm's race that has been discussed heavily pertains to coaching salaries (Brady & Upton, 2007; Powers, 2007; Sanserino, 2011; Sloan, 2007; Suggs, 2002, 2004; Upton, Gillum, & Berkowitz, 2010; Upton & Wieberg, 2006; Wieberg, Upton, Perez, & Berkowitz, 2009). Institutions pay coaches based on their expertise and success With a high paid coach, the institution aims to increases their team's chance of winning or maintain their current success. While coaching salaries have increased, there is no research on if there is diminishing returns. This research would aid administrators who are responsible for hiring coaches in determining how to go about their search for a coach and how much the coach should be paid before the level of winning or success plateaus. For now, each institution aims to higher the most expensive coach their budget allows hoping that their competition cannot outspend them. Furthermore, by spending the most they can afford, the institution hopes that that coach can play a role in not only attracting but also recruiting talented and skilled student-athletes.

Using salary and team performance as a metric through the 2007-2008 season, research findings have indicated that relationship between coaches' salaries and winning percentage is not statistically significant (Litan et al., 2003; Orszag & Israel, 2009; Orszag & Orszag, 2005). Unlike the prior research, Tsitsos and Nixon II (2012) use data through the 2010-2011 season for men's basketball and football, the two sports that generate the most revenue. They look to see if the financial investments in coaches "pay off" in terms of athletic success and prestige.

Using *USA Today's* database for football and men's basketball coaching salaries the authors looked at the following variables: coaches' compensation, athletic success indicators,

program mobility 2003-2004 to 2006-2007, program mobility 2007-2008 to 2010-2011, and "extra-long term" mobility from 2003-2004 to 2010-2011.

Tsitsos and Nixon II found that during this period, hiring high paid coaches does not reflect sustained success. 12% of men's basketball programs with top-paid coaches were members of the established elite in their sport from 2003-2004 to 2006-2007. The percentage increased to 16% over the next period. Their findings indicate that hiring a high paid coach may not provide the desired dividends. While higher coaching salaries do not positively correlation to more wins, the salaries do increase in athletic expenditure.

Hoffer, Hoffer, Humphreys, Lacombe, and Ruseski developed a model that explains for the increase in athletic expenditure. Using the same data source as Tsitsos and Nixon II, Hoffer et. al. learned that expenses did increase. Furthering Tsitsos and Nixon II, Hoffer et. al. looked at the Power Five conferences and compared them to the rest of the Division I conferences. Expenses of the Power Five were four times greater. Supporting Bowen's (1980) revenue theory of cost, revenue grew proportionally. The model predicts that NCAA overinvests in both program quality/quantity and coaching staff, even when the breakeven constraint is binding. The model of dynamic nonprice competition predicts that expenditure on programs and coaching staff could increase even more because of this dynamic strategic interaction (Hoffer et. al, 2015).

The authors found that institutions within the same athletic conference do engage in an arms race. They found this through spatial autoregression. They also found that increases in alumni donations and broadcast rights revenues at one school in a conference are associated with higher total athletic department expenditure and salaries by conference members. This leads to an area of future research or clarification by the authors as institutions in the same conference tend to have

the same television contract in terms of men's basketball. Their findings can be furthered if they separated the data based on sport and based on conference.

Effects on Gifts and Alumni Donations

One area that has seen a benefit from increased athletic spending has been institutional giving. While private donations represent only one form of revenue to the institution, the ability of athletic programs to attract and influence donors has allowed a more careful examination of the returns associated with athletic investment. This is because an increase in expenditure is associated with an increase in winning which is attractive to donors (Orszag and Israel, 2009). While winning increases donors' inclination to give to athletics, there are several factors that affect donations made including the size of the alumni base, the quality of graduates in terms of employment and job earnings, economic climate of the period winning occurs, as well as other socioeconomic and political factors such as tax rates.

One study that looked at the effects of alumni donations and gifts was conducted by Humphreys and Mondello (2007). The researchers used panel data from Integrated Postsecondary Education Data System (IPEDS) from 1976 to 1996 of public and private institutions. The sample contained institutions that sponsored Division I basketball or football teams. In total, 320 institutions were studied. Using the two-way fixed effects model from Baade and Sundberg (1996), the researchers looked at general giving by alumni, foundations, and corporations. They found that postseason football bowl-game and NCAA Division I Men's Basketball Tournament appearances were associated with statistically significant increases in restricted giving and no increases in unrestricted giving to public institutions the following year. Appearances in the Men's Basketball Tournament were associated with increases in restricted giving to private institutions.

A study that relates to Humphreys and Mondello (2007) is one by Meer and Rosen (2008). Meer and Rosen also look at alumni donations with respect to college athletics, but they use a different dataset and time. Their data comes from Anon U's Development Office, which is based on a NCAA Division I institution, which is proprietary data that from the institution that the authors note as anonymous, hence Annon U. The data used is unlike the data Humphreys and Mondello used. Anon U's Development Office dataset includes alumni donation records for general institution gifts as well as athletic gifts. The data is based on graduates over the period from 1983 to 2006. Because Anon U's Development Office's data, Meer and Rosen's data is robust in terms of specific findings of gifts and donations. Meer and Rosen were able to determine not only if alumni donations were affected by athletic success, but also which alumni contributed those donations. Anon U's Development Office's data includes alumni's race and ethnicity, gender, major, degree type, SAT scores, post-graduate degrees, occupation, and whether that individual married another graduate. To determine if there is a relationship with athletic success, Meer and Rosen used public data from the NCAA to connect the sample data to the respective institution. The authors were clear and direct about their data and the meaning behind the different variables used. They continued such by touching on the difference between general giving, which is giving back to the institution, and athletic giving, which is giving back because of the athletic program and its success. Unlike Humphreys and Mondello, Meer and Rosen were able to make that distinguishing factor, making their findings not directly comparable to Humphreys and Mondello's. Simply put, the institutional data used by Humphreys and Mondello does not allow for the same result interpretation that Meer and Rosen's micro-level data can. The micro-level data provides precise findings that can be great for marketing and advertising of athletics. The data could be used to find opportunities that would encourage the untapped alumni to make donations.

Meanwhile for former athletes, Meer and Rosen's findings echo Turner, Meserve, and Bowen (2001) who found the results inconclusive. However, when an alumni's basketball team wins the conference championship, giving to athletics increases. What is unclear about this finding is whether "winning a conference championship" refers to finishing first in the conference before the conference tournament. This is important to note because finishing first in a conference does not guarantee a trip to the Men's Basketball Tournament while a Conference Tournament Championship does. It is also important to preface that by saying that these findings are for male graduates.

As for female graduates, Meer and Rosen found that when an alumna's team was successful when she was an undergraduate, it did not have an impact on her giving to the athletics. Reasons as to why this was found is unclear and not noted by Meer and Rosen. This finding could be due to an uneven distribution of males to female's enrollment or socio-cultural factors that have men as heads-of-households and in control of spending.

While Meer and Rosen found that giving increases for males when their alma mater's team wins a men's basketball championship (albeit conference regular season, tournament, or NCAA Men's Basketball Tournament), Holmes, Meditz, and Sommers (2008) conducted a study using data on annual giving and found results that support Meer and Rosen. Holmes, Meditz, and Sommers also used micro-data to look at alumni giving, and donations based on race, gender, age, and undergraduate athletic involvement. They too found that former student-athletes are more likely to give to their alma mater than non-student-athletes. However, Unlike Meer and Rosen who were able to break down the data to study basketball, Holmes, Meditz, and Sommers did not look at basketball. Instead, their sample came from Middlebury College which is a liberal arts institution with an undergraduate enrollment of approximately 2,400. Their sport-of-interest was men's

hockey. The time ranged between 1990 and 2004 which means that their study worked off of the more recent data. A limitation though is the sample size just one Division III institution. The sample has to potential to present a myopic result that is not indicative of institutions that have Division I men's basketball. This data does shed light on how donations are affected by winning at a school that, would be a Cinderella Story if it was to qualify for the Men's Basketball Tournament and win at least two games. Another drawback though is the lack of media attention ice hockey receives nationally. It would be interesting to see how this study would turn out if the same data and methods were used but for a basketball program at the Division I level. What would make the study even more robust would-be studying Cinderella Story teams over the same time period. This would also coincide with the rise of the Flutie Effect which centers on the benefits an institution garners after unexpected athletic success at the national level. While the area for future research is aplenty, researchers continue to seek meaning with the relationship between athletic success and alumni donations.

Two researchers that have conducted several studies on athletic success and alumni donations are Stinson and Howard (2008). Their first work documented that shift in donation patterns with athletic and academic donations (2004). They found that alumni and non-alumni donations rose in support of athletic programs. Their follow-up study (2008) strengthened their findings that more donations were going to the athletic programs and the percentage of donations going to academics decreased in favor of more athletic giving. Unlike prior studies on similar topics, Stinson and Howard did not look at on-field performance, success, or winning as a function of donations. Thus, the purpose of their third study was to determine whether similar trends in private giving are members of the FBS or FCS. In terms of a Cinderella Story, this study is

beneficial because the researchers look at FCS schools which are primarily institutions that are sponsored by men's basketball.

Stinson and Howard's (2008) sample was from 1998 to 2003 and included all Division I-AA and I-AAA institutions. Using a linear mixed model, Stinson and Howard (2008) found that a NCAA Men's Basketball Tournament appearance and the one-year lagged variable (delay of effect) of an NCAA appearance, are associated with an over $400 increase each in the average total gift. They go on to find that at the I-AA institutions in the sample, an NCAA basketball appearance is associated with a 0.50% increase in the average percent of total gift allocated to athletics (Stinson & Howard, 2008). Furthermore, NCAA appearance results in an increase of approximately 0.50% of the total donor gift allocated to the athletics program. Each additional NCAA tournament appearance included in the tradition measure increased the percent of total gift allocated to athletics by about 0.22% (Stinson & Howard, 2008).

Walker (2015) conducted a study that looked at athletic success in a different light with respect to alumni donations. Walker defined athletic success as participating in the Division I Men's NCAA Final Four in the basketball tournament or a BCS Bowl Game in football (2015). Walkers' definition of athletic success differs from the prior literature which adds to the various ways athletic success is perceived. Walker wanted to research if there a significant difference in the percentage of overall private support to the institution following a year of athletics success, impact does regional location, public or private affiliation, or history of athletics success, and if the difference in percent change from private contributions differ between Division I institutions with basketball athletics success compared with Division I institutions with football athletics success (Walker, 2018).

Also like the other studies, he too used his own dataset which he obtained through the Council for Aid to Education's (CAE's) Voluntary Support of Education (VSE) Survey, a voluntary survey of higher education institutions with standardized data pulled from their annual reports. The researcher justifies his use of the survey by claiming it to be "the most comprehensive and complete annual survey on overall private contributions" (Walker, 2015). Walker's sample included 129 institutions spanning a decade, 2002 to 2011. Focusing on college men's basketball, Walker observed the 39 institutions that qualified for the Final Four. Even though Walker denoted the number of institutions that qualified for the Final Four, his research findings did not reflect just those institutions. Rather, Walker clumped those institutions with the other 90 that participated in BCS Bowl games.

His results would have been more attractive to all Division I institutions if he had presented his results in a manner that not only aggregates football and basketball, but also football and basketball independently. While he could reveal his results in a different manner, Walker does a commendable job at making the institution type a cornerstone of his research. His results do differentiate between public and private institutions. The results determine that there is a small significant difference between private and public institutions that experience athletic success. Private institutions experience a greater influx of donations that public. However, Walker does not indicate if those findings are controlled for institution size and type or classification. Knowing those factors would put the findings into perspective and help policymakers determine the best strategy for obtaining more donations of if it is worthwhile to invest in athletics.

Walker's findings also indicate that there is a statistically significant difference in the percent increase of private contributions for institutions that experienced athletics success compared with all higher education institutions (Walker, 2015). This means that athletic success

does bring in more donations. However, Walker's findings do not indicate if the returns diminish each passing year after the success stops.

He also found that regardless of public or private affiliation, history of athletics success, or region, those Division I institutions that experience athletics success, either in basketball or football, saw a significant increase in overall private contributions to their institution (Walker, 2015). Simply put, the findings are beneficial for the institutions because of the addition resources it must invest within itself.

Although Walker did have meaningful findings, future research can focus on the differences, if any, between public and private institutions and alumni donations based on athletic success. Furthermore, the results are not indicative of non-Power-Five conferences or institutions that constitute being Cinderella Stories. Future research on alumni donations ought to be catered toward Cinderella Stories because it would tap into the role of the "Flutie Effect." The more data institutional decision-makers have, the more calculating they can be in terms of how they go about investing and positioning their athletic teams, especially their men's basketball team. Positioning refers to scheduling and recruiting. If the institution deems it is worthwhile to use athletics to generate more alumni donations, then it could work with its athletic department on capitalizing on obtaining local talent and schedule games against opponents that would prepare themselves for postseason competition. While the slew of donations might not happen in the next year, the athletics department and institution can start to strategically setup a long-term plan of how to become a Cinderella Story.

Another study that looked at alumni donations was done by Stinson (2017). While Stinson has been cited with working with others, he branched out on his own to conduct his own study where he looked to see how an increase in athletic spending influences academic spending. He

found that athletics attracts more donations that academics and Is about to retain those donors more frequently than academic donors. He recommends that institutions ought to develop strategic goals that entice donors to give to both athletics and academics. Stinson's recommendation is a sound one because it uses the advertising effect of athletics to lure in donors. Since most donors give to athletics, having a successful athletic program can bolster academics if the institution can find a way to make their academic programs appealing to the athletic donors. If the institution is able to capitalize, it could then justify its investment in its athletic program.

Effect on Admissions, Applications, Student Quality

While the "Flutie Effect" and Cinderella Stories bring unexpected visibility to institutions, college athletics has been thought to be the "front porch of a university" (Shulman and Bowen, 2002; Vanover and DeBowes, 2013; Hoffer, Humphreys, Lacombe, and Ruseski, 2015). Being the "front porch," athletics is used for the advertising effect which promotes the university in front of regional or national audiences. Because of the exposure, an effect it has on the institution pertains to the institution's admission department with respect to applications received and enrollment figures. In fact, Wolverton (2009) said that university leaders hoped that the exposure from athletics would attract students to apply who otherwise would have not.

Research on application and enrollment is traced back to a study by McCormick and Tinsley (1987) discovered that institutions with Division I athletic programs have more applicants and attract students with higher SAT scores than institutions that do not have Division I athletics. Using the same sample of 63 institutions, Sandy and Sloan (2004) conducted a study that supported the finding by McCormick and Tinsley (1987) found between Division I and non-Division I institutions. With respect to their design, McCormick and Tinsley (1987) and Sandy and Sloan (2004) rely on cross-sectional data. This excluded any institution-specific effects that might have

happened. In addition, while the data was collected over a specific time frame, it does not consider the effects of applications of one institution over time since they use single year data.

What stands out though about the consistent findings is the stability of data over an 18-year span. This is an interesting finding because of the changes to Division I athletics in terms of media exposure. Furthermore, McCormick and Tinsely (1987) released their findings just after he Flutie phenomenon occurred which means that their findings were at the genesis of research regarding a spike in public awareness. However, because the phenomenon, their sample could not have been indicative of the athletic programs that were affected by the Flutie phenomenon while Sandy and Sloan could have used a sample that included those institutions. Regardless of the "Flutie Effect" or Cinderella Stories in Division I men's basketball, the consistent findings demonstrate the reliability of the seminal study by McCormick and Tinsley (1987).

Since the "Flutie Effect" occurred in 1984, it was the first example of how the rise in media exposure and public awareness influenced prospective students' application decisions. After the pass by Flutie to win the championship, applications increased thirty percent in 1984. For Georgetown University, their application rate increased forty-five percent between 1983 and 1986 when they reached the men's basketball finals for three years. Following Boise State University's undefeated record in Division I football during the 2006-2007 season, they saw an eighteen percent increase in applications (Chung 2013).

More recently, the Cinderella Story of Florida Gulf Coast University and their run in the 2013 Men's Basketball Tournament saw applications spike over twenty-seven percent. Also, in the 2013 tournament, Wichita State's run to the Final Four saw an increase in applications of about thirty percent (Glatter, 2017). The number of examples of application increases strengthen the legitimacy of the "Flutie Effect." However, although the examples demonstrate application bumps

right after the conclusion of the respective season, does the spike sustain or does it subside and are there differences between public and private institutions that either have football or basketball as their primary sponsored sport?

Murphy and Trandel (1994) looked at Division I football. Their findings echo that of McCormick and Tinsley (1987) but in addition to the consistent results, they also found that the applicant pool increases approximately one percent over a three-year period if a team's record, or count of wins versus losses, increase from half to three-quarters. If the study could be replicated it would be beneficial for institutions' marketing department and admissions department to use in order to develop strategies or models that would aid them in understanding how to go about adjusting their enrollment and acceptance criteria. This is useful for long-term positioning of the institution as well as property and capacity forecasting. The data would aid in determining if there ought to be changes to the institution's infrastructure in order to accommodate the impending enrollment changes.

Using panel data, Pope and Pope (2009) look at short-term effects on applications. The goal of their study was to extend the literature by digging into SAT scores of the applicants between 1983 and 2002 of institutions that are public or private and have football or basketball are their primary sponsored sport. To study the quality of the applicants, Pope and Pope (2009) obtained SAT score data of high school graduates who applied to Division I institutions. Pope and Pope find that institutions with basketball success tend to be more selective when their applicant pool increases and raise tuition. Institutions with football success tend to increase enrollments (Pope and Pope, 2009). It would be beneficial if future research can delve into their findings and see why there is a difference between public and private institutions.

With respect to their basketball findings, Pope and Pope learned that appearing In the Sweet 16 increases applications by three percent with about a five percent gain if the institution's team makes the Final Four and a seven to eight percent increase if they make it to the championship game (Pope and Pope, 2009).

Although Pope and Pope (2009) use panel data, there are drawbacks to the study. Because they use the aggregate number of applications per institution per year, the data does not consider market-level characteristics that would influence demand in different regions with different student-body demographics and characteristics. By using market-level data, one can consider other factors that might influence college choice such as academic rigor, cost, distance from home, and mental satisfaction. One study that does take the into account was conducted by Chung (2013).

Chung (2013) developed a statistical model that determines if there is an effect that athletic success can have on application rates. He found that athletic success does influence the number of applicants and the quality of applicants with respect to their SAT scores. An interesting find is that students with lower SAT scores tend to favor institutions that are successful athletically. Another finding pertains to the chance in perception of the institution athletically. He breaks down the perception of athletic success into categories, two of them being "mediocre" and "great." Chung defines being "mediocre" as winning only four games per season, while being "great" is winning ten games per season, in the previous two years. He found that when a team goes from being "mediocre" to "great," applications increase 17.7 percent with most of that seventeen percent coming from applicants with low SAT scores, much bigger than the findings by Pope and Pope (2009). While most applicants had low SAT scores, for the ones that have high scores, Chung (2013) was able to forecast that an institution ought to decrease tuition by 3.8% or increase the quality of education by hiring faculty who are paid 5.1 percent more than average. Also, because

of the increase in applications, Chung (2013) found that institutions do become more selective than before with their acceptance standards.

Although not studied, an area of future research can be centered on why prospective students value athletics so much as to apply to institutions that are athletically successful. This can be beneficial for institutional leaders because there may be factors of athletics that can be infused with the different programs and majors which would make students more inclined to enroll in courses that they deem meaningful.

Horner and Eckstein (2015) argued that the "Flutie Effect" does not offer the benefits that other studies and data deems true such as the increase in applicants and enrollment. Their research does not challenge the findings by other studies that do offer support of the "Flutie Effect" other than contradicting those findings by Chung (2013) by acknowledging the effect by questioning its sustainability.

The authors even explain that their sample is composed of three institutions; one being a large public flagship, another is a medium-sized private, and a small liberal-arts that is in Division III. The flagship and medium-sized private institutions both won national championships and the small liberal-arts institution won a championship in its respective division. The study, a mixed-methods one, was conducted by distributing a survey via email and in-person to students in sociology courses which are composed of first year first and second semester students. The authors note that the students surveyed were "actually attending the school, eliminating the aforementioned leap of faith which assumes that those who apply to a school will actually enroll" Horner and Eckstein (2015). The survey asked the students to rank factors that influenced their decision to enroll in their respective university.

While the authors acknowledged that their research methods might not be generalizable, their study did provide biases at the same was extremely small and unjustified as to how those three institutions were selected. Also, the findings are not generalizable as they only surveyed students in a sociology course. Furthermore, the study does not connect to the "Flutie Effect" as the authors mentioned. To study the effect, the authors have to had observed and analyzed data of the institutions that received an unexpected bump in publicity or a level of athletic success that they can define and measure.

Summary

One phenomenon that has altered the public's perception of an institution of higher education pertains to the National Collegiate Athletic Association (NCAA) Division I Men's Basketball. Every March, the NCAA Men's Basketball Tournament is held which is composed of the top teams based on their record which is a team's wins versus loses, ranking based on different polls, and conference championship.

A Cinderella Story is beneficial for an institution of higher education because of the exposure the win generates in the local and national media. Due to the unexpected triumph, the institution experiences a phenomenon known as the "Flutie Effect" (Johnson, 2006).

While the teams are considered Cinderella Stories for their respective athletic season, it is not until the data; regarding desired benefits such as application rates, merchandise sales, social media engagements, and alumni gifts and donations; is analyzed which would determine if the "Flutie Effect" occurred.

There are several studies that research if the unexpected triumph or athletic success lead to additional donations and gifts from alumni. Findings indicate that there is a positive effect from

success, but the sustainability of those effects still needs to be further researched. Regardless, research is consistent with short-term bumps in donations and gifts.

Studies that researched application rates and enrollment also found statistically significant information that leads to adaptions in admission criteria, enrollment rates, and application amounts. However, an interest find is that the admission criteria, enrollment rates, and application amounts different between public and private institutions.

Prior research has demonstrated that there is a need to delve deeper into unexpected success such as a Cinderella Story, since there have been changes in alumni donations, test scores, and enrollment just to name a few. Current literature has yet to examine men's basketball expenses with respect to Cinderella Stories. Filling the gap will expound on the value of winning and provide context that will determine the importance of investing in men's basketball particularly.

CHAPTER 3 – DATA AND METHODS

Cinderella Story Research

The purpose of this study is to examine how winning two games, excluding play-in games, affects enrollment, applications, admissions, SAT scores (selectivity and prestige), and gift giving. The findings are useful for the institutions and its respective athletics department as they will gauge how athletic success contributes to athletic spending. This study is quantitative as it relies on data from Equity in Athletics Data Analysis and Associated Press (AP) Top 25 rankings. The AP Top 25 is significant to include in the definition of Cinderella because they are a measure of success. Teams that are in the top 25 are perceived to win more often than those that are not. It is using the data to conduct regressions to determine if there is a statistically significant relationship between the unexpected success of a Cinderella Story and athletic spending. This study looks to examine if there is a statistically significant change in men's basketball spending after the team has been classified as a Cinderella.

Previous literature has examined the arms race by looking at variables such as head coach salary, AP Top 25 rankings, coaching experience, athletic department's total coaching staff, prestige, and total revenues generated by the athletic department, as well as Director's Cup Standings (NACDA) (Tsitsos and Nixon 2012, Jones 2013, Hoffer et. al. 2015). The studies examined NCAA Division I institutions. While these variables are important, the sample of these studies are based on NCAA Division I football, and men's basketball as a whole and not based on unexpected success or a Cinderella Story.

Previous literature that study Cinderella Stories focus on variables such as alumni donations, changes in tuition, enrollment, and applications (Baker, 2008; Chung, 2012; Shapiro et al., 2009; Smith, 2012). The gap in these studies stems from their definition of a Cinderella Story.

Past studies define a Cinderella Story differently (Childs, 2018; Collier, Haskell, Rotthoff, and Baker, 2020) or study athletic success rather than Cinderella Stories (Smith, 2012; Smith, 2019; Fisher, 2009). Since Cinderella Stories were birthed from sports media, there is no definitive or concrete definition. Academically, Childs (2018) defines a Cinderella Story as one that is not a member of one of the Power conferences and wins at least one game in The Tournament. Collier et al (2020) defines Cinderella Story as any team that won at least 2 games (excluding "play-in" games, which started in 2011), did not enter the tournament as a 1-seed or 2-seed, and was referred to in the media as a having a "Cinderella," "upset," "underdog," "surprise", "darling" or "sweetheart," run in the tournament.

One study by Childs (2018) examines the Cinderella Story but the definition of Cinderella Story differs. For this study, a Cinderella Story is one that was not ranked in the AP Top 25 in the preseason poll, was between a 9th and 15th seed in the tournament and won at least two games in the tournament. This definition relies on a metric developed by the media, who also are the ones who write articles about said Cinderella Stories. This definition also looks to measure unexpected success regardless of which conference the institution is affiliated. This is important because the media focuses on "Power Conferences" which are the made up of institutions that have the largest student bodies, endowments, and have the most resources. These conferences are the most powerful because they are composed of some of the largest institutions in terms of student body and have historically been given autonomy by the NCAA to govern themselves.

Childs (2018) definition is binary as it looks to see if a team is or is not a member of a Power Five conference. That definition does not consider the teams within those power conferences that were not ranked or seeded between 9th and 15th. One commonality between Child's definition and this study's is that to be considered a Cinderella, the team must win at least

one game in the NCAA Men's Basketball Tournament, March Madness. Aside from Child's definition, the following are other definitions used colloquially in sports media.

- One team that shakes up the world of college basketball and makes an unexpected run (Berky, 2012).
- A March Madness Cinderella is a team that greatly exceeds its NCAA tournament expectations. They are generally afterthoughts on the Selection Sunday bracket, but wind up becoming one of the biggest stories of the tournament (Boozell, 2020).
- A true Cinderella comes from a mid-major conference. and not favored in their opening matchup, an 8-seed or higher (Reuter, 2019).
- Any NCAA men's basketball team seeded 11th or worse that has advanced to the Sweet 16 (or beyond) since 2002 (Mull, 2019).

Boozell (2020), Reuter (2019), and Mull (2019) all developed clear quantifiable definitions of a Cinderella Story. Reuter's is definition immediately emphasizes a higher seeded team beating a lower seeded one but omits teams from Power conferences. Mull's (2019) definition relies on an arbitrary 11th or worse seed yet brings up the role of winning at least two games which earns a Sweet 16 birth.

Although in a Power conference, a team can still be considered a Cinderella if they were an 8 seed or higher because they won a game against a lower ranked opponent. Just because they are members of a power conference, that does not exclude them from being considered a Cinderella Story. For example, a team in one of those power conferences can be considered a Cinderella Story even if they were not ranked in the AP Top 25 or seeded 9th or higher. The AP Top 25 is an important component of the Cinderella definition because it is a metric that is covered in the media

each week throughout the season whether it be in print, digital, or visual/video. Teams that are ranked in the Top 25 have their ranking next to their name throughout the week. Then at each Monday at noon, the AP releases the rankings for the coming week. Another important element is the role the Top 25 has on fans. There are countless of outlets, particularly social media, where fans chat and debate about the rankings. One team that fits this criterion is Syracuse University. In 2016, 2018, and 2021, Syracuse to the Final Four, Sweet Sixteen, and Sweet Sixteen respectively after not being ranked by the AP and being seeded 10th, 11th, and 11th. Power conference Cinderella Stories should be treated the same as non-power conference teams because they achieved unexpected success which means that they received national media coverage they would not have otherwise. While power conference teams are some of the "biggest" in terms of student body, endowment, and resources, that does not make them immune to being a Cinderella Story.

For this study, a Cinderella Story team is one that was not ranked in the preseason top 25 poll conducted by the Associated Press (AP), advanced to the Sweet 16, and was seeded ninth to fifteenth in The Tournament. Unlike Childs' definition, this one considers seeding and AP preseason ranking. These two metrics consider the unexpectedness of one's success regardless of if they were a member of a Power conference or not. Compared to Collier et al, this definition excludes the qualitative element which relies on media articles. For this study, the determined definition of Cinderella stories provides concrete evidence that is derived from quantitative measures. The definition is based on expected success as determined by whether a team was predicted to excel based on the Associated Press' preseason top 25 ranking. Sports media considers teams that are ranked to be contenders and threats in The Tournament and eventually the National Championship. Just as the Associated Press' ranking system is an empirical system that predicts

success, seeding for The Tournament expounds on whether a team was intended to win. To understand seeding, the format of The Tournament must first be explained.

The NCAA Men's Basketball Tournament is single elimination which means that once a team loses, they are removed from competition. 68 teams qualify with 32 of those having automatically qualified through winning their respective conference's tournament which is held at the end of the season. The remaining 36 teams are determined by the Selection Committee who uses their own metrics to decide who qualifies. Of those 36 teams, there are 4 teams that are also automatic qualifiers but play "play in" games where the winners advance to the 12th or 16th seed.

The field of teams is divided into four regions with each regional having sixteen teams. The Selection Committee first ranks the teams 1-68. With respect to the four regions, each region gets their own seed from 1 through 16. Each of the top four ranked teams are considered a 1-seed then the next four are considered a 2-seed and so on. Each 1-seed plays their Round of 64 game against the 16-seed. Each 2-seed competes against the 15-seed and so on. This is where the allure of Cinderella is born. Teams that are of higher seed than their opponent are not projected to win so if or when they do win, that win is considered an "upset" which also is the genesis of a Cinderella Story.

Seedings role offers a quantifiable way of judging what team is and is not expected to win. As previously mentioned, when a team of a higher seed defeats the team with a lower seed in the Round of 64, it is an "upset." However, this does not equate to a Cinderella Story because this only is attributed to one win. When a team that had an "upset" in the Round of 64 also "upset" their opponent in the Round of 32, then a Cinderella Story is born. A Cinderella Story is born once the teams wins a second time because that win indicates that the first unexpected victory is not by happenstance but rather because of pure unexpected yet sustained athletic prowess. One exception

came in 2018 when a 16-seed defeated a 1-seed for the first time as University of Maryland Baltimore County (UMBC) defeated University of Virginia. Due to the historical significance, UMBC was considered a Cinderella Story. Additionally, because of the tournament's schedule, there is roughly one week between the Round of 32 game and the Sweet 16 giving the media ample time to cover the Cinderella Story or Stories.

Research Question

- Does being classified as a Cinderella Story team lead to a statistically significant change in NCAA Division I men's basketball spending for that team's respective institution?

Restatement of Significance

This study is significant because of the relationship between college athletics and higher education institutions. Athletics serves as the front porch to a university. This means that athletics posits institutions in front of the masses which brings exposure that the institution would not have had otherwise. This is particularly important for institution's whose teams play football, and men's basketball teams. These two sports are revenue generating and draw large television and media contracts.

Since athletics brings attention to institutions, studying Cinderella Stories and men's basketball expenses will be beneficial to institutional shareholders by determining if a team spends more on athletics if they are a Cinderella Story.

Research Design

This is a quantitative study using data from IPEDS, the Integrated Postsecondary Education Data System, and Equity in Athletics Data Analysis (EADA). This study uses variables that

measure a university's prestige. The purpose of this study is to examine whether there is a significant relationship between a Cinderella Story team men's basketball spending

Population

The Population for this dissertation was all NCAA Division I schools/teams between 2004 and 2020. Teams that did not qualify for the tournament have been excluded from the population. 2004 was selected as the starting year because that is the earliest EADA has data. Between 2004 and 2020 there are 476 observations that qualified for The Tournament and were between a 9 seed and 15 seed. This is significant because all the teams were not expected to win their first-round game. 16-seeded teams were excluded because only once have they won their Round of 64 game against the 1-seed. When the win occurred by the University of Baltimore Maryland County, they did not win the next game which is a part of the Cinderella definition for this study. Hence, any of these teams that do win, begin their run to be a Cinderella Story. Furthermore, of those 476 observations, schools can be repeated since they can qualify for The Tournament in multiple years.

Sample

The sample for this dissertation is composed of teams who were seeded between 9th and 15th and were not ranked in the preseason AP Top 25 poll.

Treatment Group

The treatment for this dissertation is composed of the following teams: those that were not ranked in the preseason Associate Press Top 25, those that won 2 games or advanced to the Sweet 16 and were seeded between 9th and 15th.

Comparison Group

The comparison for this dissertation is composed of the following teams: those that were not ranked in the preseason Associated Press Top 25, those that won 1 or 0 games in The Tournament, and those that were seeded between 9th and 15th.

Excluded Group

The group that was excluded from the sample is composed of the following teams: those that were ranked in the preseason Associate Press Top 25, those that won 0, 1, or 2 games in The Tournament, and those that were seeded between 9th and 15th

Sample Table

	Treatment	**Comparison**	**Excluded**
N	34	393	48

Variables

Variable	**Comparison Group (Average)**	**Treatment Group (Average)**
Men's Basketball Expense (Adjusted for Inflation – 2020 dollars)	$3,551,384	$5,801,614
Total Gifts (Adjusted for Inflation – 2020 dollars)	$42,789,054	$84,029,625
Applicants	14,702	19,780
Admitted	8,116	9,394
Enrolled	2,745	3,092
SAT Score	1154	1187

**Men's Basketball Expense data was compiled from the U.S. Department of Education Equity in Athletics Disclosure Act Survey (https://ope.ed.gov/athletics/#/). Equity in Athletics. (n.d.). Retrieved from http://ope.ed.gov/athletics/ Total Gifts, Applicants, Admitted, Enrolled, SAT Score data was compiled from Integrated Postsecondary Education Data System (https://nces.ed.gov/ipeds/use-the-data). Use the Data. The Integrated Postsecondary Education Data System. (n.d.). Retrieved from https://nces.ed.gov/ipeds/use-the-data.*

Variable – Independent

*Men's Basketball Expense***:** This variable will measure any change in athletic expenses during one season. This data will be gathered from the Equity in Athletics Data website that denotes expenses

based on Division I men's basketball. Just like the dependent variables, understanding any change in expenses after the Cinderella Story will play a role in determining if there is any statistical significance.

Variables – Dependent

To determine the impact of being a Cinderella Story the following dependent variables were used based on IPEDS data between fiscal year 2004 and fiscal year 2020. These variables are necessary to evaluate because they depict measures that are connected to the understanding of institutional factors.

Gifts – This variable is important because it helps determine whether the number of gifts received by the respective institution is changed before and after the Cinderella Story. IPEDS divided "gifts" into two variables based on type of institution – private or public (not-for-profit). Additionally, the different types of institutions are evaluated under different accounting principles. As found in the table above, the number of gifts the treatment group receives is approximately double the amount of the comparison group. It is important to note that this variable has been adjusted for inflation using 2020 dollars as the comparison.

Private institutions follow FASB accounting standards and are required to report expenses by function. Most public institutions follow GASB accounting standards and are not required to report expense by functional classification on their financial statements. Each "gift" variable was then combined to create a single variable.

Applicants **–** This variable measures the number of applicants the respective institution received during one academic year. Using IPEDS, this data was able to be gathered for fiscal year 2004 through 2020. This variable must be logged because the distribution is skewed.

Admitted – This variable measures the number of students that were admitted the respective institution received during one academic year. This variable includes those students who were admitted and enrolled and those that were admitted and not enrolled. Using IPEDS, this data was able to be gathered for fiscal year 2004 through 2020. This variable had to be logged because the distribution is skewed.

Enrollment – This variable measures how many students enrolled in the respective institution at the beginning of the academic year. This includes all students who are enrolled at the institution and taking credits towards a degree. Using IPEDS, this data was able to be gathered for fiscal year 2004 through 2020. This variable must be logged because the distribution is skewed.

SAT Scores – Because institutions can accept both scores as a measure for admittance, both tests are valuable to the study. IPEDS separates the variable by test type then by test section and score percentile; SAT Critical Reading 25th Percentile, SAT Critical Reading 75th Percentile, SAT Math 25th Percentile, SAT Math 75th Percentile, ACT Composite 25th Percentile, and ACT Composite 75th Percentile. To consolidate each variable, averages were taken for each test and section between the 25th and 75th percentile. This leaves a single variable for average ACT and average SAT scores. Then, to create a single test score variable, concordance tables were used to convert ACT scores to its SAT equivalent.

(https://www.act.org/content/act/en/products-and-services/the-act/scores/act-satconcordance.html for 2018 and later,

https://www.act.org/content/dam/act/unsecured/documents/ACTCollegeBoardJointStatement.pdf for earlier years)

Method

This study utilizes generalized linear regression. Generalized linear regression is best suited for this study because it observes multiple variables across multiple years. It will allow to any similarities to arise since it is looking at the same variables with different subjects throughout a fixed period. This study is a function of each of the control variables bolsters the efficacy of a generalized linear regression model.

Each of the control variables has some reaction to the outcome variable which total men's basketball spending. Expenses are a function of factors such as the ones controlled for in this study. These variables influence how much an institution spends and, in turn, how much it makes. To determine the significance, a generalized linear regression model is preferred. Additionally, this study will control for institution and year fixed effects.

Limitations

The most significant limitation of the study is the subjectiveness of how a Cinderella Story is defined. Because there is no official definition, the findings from this study may not be indicative of another interpretation of what constitutes a Cinderella Story. For this study, a Cinderella Story team is one that was not ranked in the preseason Associated Press Top 25 poll and was seeded ninth or higher in the Men's Basketball Tournament. This definition does not look at other factors such as the ratings percentage index (RPI) which is a metric used in college basketball to rank teams based on their wins, loses and strength of schedule. Today the men's basketball voting committee, which evaluates and seeds the teams for the March Madness Tournament, used the NET tool which is the NCAA Evaluation Tool. This is a new algorithm that uses two metrics to rank teams. Those metrics are the Team Value Index (TVI) and adjusted net efficiency rating. The TVI is based on wins and losses and is factored based on the opponent, game location (home,

neutral, away), and game winner. The net efficiency rating is based on the location of the game and strength of the opponent. There are other ways to rank teams such as the KenPom rating and actually Las Vegas gambling odds. These factors can produce a different sample and ultimately different outcomes. Although the voting committee uses the NET, it is a new metric that was implemented during the 2018-2019 season. Unlike the AP Top 25, the NET rank all teams, making it challenging to conceptualize criteria for a Cinderella Story. Furthermore, the NET uses a quadrant system which adds layers to its ranking system. These metrics use different formulae to measure success and compare teams. Each ranking statistic looks to compare all teams against each other to evaluate and predict how all teams will perform against each other. The Top 25 is the most meaningful because its voting structure and committee has remained consistent while the NET replaced the RPI and KenPom is not an official statistic that the NCAA utilizes for rankings. Given the NCAA's switch from RPI to NET, the ranking system and definition of Cinderella varies. The AP Top 25 provides a robust and consistent measure.

Another limiting factor is the magnitude of the effects of the win based on the teams that meet the criteria of a Cinderella Story for this study. State institutions with higher enrollment and greater endowments might not receive the same benefits as those who are smaller. This brings up the debate of whether teams in a Power conference ought to be considered a Cinderella. Based on the data, 12 teams are from Power conferences and are considered Cinderella.

Summary

This chapter provides an explanation as to how this study is conducted. This chapter introduces the population, sample, the dependent and independent variables as well as the statistical method to be used. This chapter is bolstered by bringing awareness to limitations that can altered the breadth of the study. Furthermore, aside from shedding light on the subjectiveness

of defining a Cinderella Story, this chapter also recaptures the significance of the study and briefly overviews how the findings can impact higher education policymakers.

CHAPTER 4: RESULTS

The purpose of this research is to determine the effect of men's basketball spending on teams that are Cinderella Stories in the NCAA Men's Basketball Tournament. It aims to understand how spending differs between athletic programs whose characteristics mirror those of Cinderella Stories and how expenses change before and after being labeled a Cinderella Story.

The results are analyzed one, two, and three years after the team is labeled Cinderella to determine if there are short term and longer-term significant results. The sample for this dissertation is composed of teams who were seeded between 9th and 15th and were not ranked in the preseason AP Top 25 poll.

The treatment for this dissertation is composed of the following teams: those that were not ranked in the preseason Associate Press Top 25, those that won 2 games or advanced to the Sweet 16 and were seeded between 9th and 15th. The comparison for this dissertation is composed of the following teams: those that were not ranked in the preseason Associated Press Top 25, those that won 1 or 0 games in The Tournament, and those that were seeded between 9th and 15th.

This quantitative study uses IPEDS, the Integrated Postsecondary Education Data System, and Equity in Athletics Data Analysis (EADA). This study uses variables that measure a university's prestige. The purpose of this study is to examine whether there is a significant relationship between a Cinderella Story team men's basketball spending and SAT scores, number of students enrolled, admitted, applicants, and alumni donations.

Regression Results

The research question that guided this study was as follows: Does being classified as a Cinderella Story characterized by achieving unexpected success lead to a statistically significant change in NCAA Division I men's basketball spending? The dependent variables of number of

students who applied, admitted, and enrolled; SAT scores, and gifts were controlled to answer this question. The admission variables were also logged so that the percent change was computed rather than a unit change. Additionally, the Gift variable was adjusted for inflation using 2020 dollars. The independent variable, men's basketball expense was also adjusted for inflation using 2020 dollars. Once the data was logged and/or adjusted, generalized linear regressions were run using fixed effects. Regressions were run controlling for each of the dependent variables were lagged for one, two, and three years after the respective institution was labeled "Cinderella".

The tables are presented in order from year lagged from one through three. One year lag examines the dependent variables the first year after the Cinderella Story occurred while two-year lag examines the dependent variables two years after the Cinderella Story while lag three looks at three years after the Cinderella Story. The regressions are presented in this order because prior research has indicated that any significant changes would be found immediately with effects tapering each subsequent year (Baker, 2008; Chung, 2012; Shapiro et al., 2009; Smith, 2012; Humphreys & Mondello, 2017; Meer & Rosen, 2008). Additionally, it was important to look at the variables lagged because of when the Tournament occurs. Since the Tournament occurs in March and April, most incoming freshman have already applied and would not be able to apply to Cinderella schools as the admission deadlines have passed. Therefore, lagging the variables takes the admission deadlines into account.

Table 1: One Year After Cinderella (One Year Lagged Outcome)

lag1	Coef.	Std. Err.	t	P>|t|
Treatment (Cinderella)	-0.073	0.071	1.03	0.307
Enrolled Logged	0.323	0.207	1.56	0.123
Applicants Logged	-0.071	0.159	0.45	0.657
Admissions Logged	-0.048	0.175	0.27	0.785
SAT	0.001	0.000	1.57	0.119
Gifts Adjusted Logged	0.004	0.035	0.11	0.91

The data in Table 1 indicates that there is a 7.3% decrease in men's basketball spending the following year when going from a non-Cinderella team to a Cinderella team. However, based on the p-value, this finding is not statistically significant. Additionally, the control variables do not provide any statistical significance.

These findings are consistent with other studies. One study that examines athletic expenses was done by Litan et al. in 2003. Their findings, like this study's, found no statistical significance between spending on football and a football team's winning percentage between 1993 and 2003. Although a different sport and using winning percentage rather than unexpected winning or advancing to the Sweet 16, their findings support that the relationship between winning and spending does not yield significant results.

Orszag and Israel (2009) examined total athletic spending with respect to teams that qualify for the Tournament. Although different variables, they too did not find any significance between expenses and both winning percentage and the probability of reaching the NCAA tournament one year lagged. These findings, along with the findings from this study make sense because not much can change in one year without approvals from institutional leaders and boards. Additionally, any changes to athletic programs, such as coaching and coaching salaries, can change but they change in accordance with the market value which nets a zero-sum game. These changes equate to rearranging chess pieces on a chess board. While a coaching change might incur, the increase in salary from one position at one school also must come at the expense of a coaching change at another school.

Table 2: Two Years After Cinderella (Two Year Lagged Outcome)

lag2	Coef.	Std. Err.	t	P>|t|
Treatment (Cinderella)	-0.051	0.113	0.46	0.648
Enrolled Logged	0.508	0.328	1.55	0.124
Applicants Logged	0.200	0.254	0.79	0.432
Admissions Logged	-0.067	0.280	0.24	0.814
SAT	0.000	0.001	0.10	0.917
Gifts Adjusted Logged	0.073	0.056	1.30	0.196

The data in Table 2 examines an effects two years removed from being labeled Cinderella. Like Table 1, the data in Table 2 does not produce any statistically significant outcomes. Although not significant, the data shows a 5.1% decrease in men's basketball spending when going from a non-Cinderella team to a Cinderella team. Prior research has not looked at effects on men's basketball spending for two years lagged. The two-year lagged findings indicate that the dependent variables do not have statistical significance either. Litan et al. (2003) found that an increase in spending on football or basketball are not associated with medium-term increases in winning percentages. They found that there was no statistical significance which supports the findings for this study's two year lagged outcomes. What is important to note is that Litan et. al. looked at institutions between 1993 and 2003 and does not consider Cinderella teams using the definition from this study. Therefore, the findings cannot be directly correlated. It is important to takeaway that there was no statistical relationship between athletic spending and winning.

One study that looked directly at Cinderella Stories was conducted by Collier et. al (2020). They looked to see if being a Cinderella, by their definition, lead to statistical significance with respect to quantity of applications and enrollment compared with public versus private schools. That study found that private school first-year enrollment increased 4.4%% 2 years after the Cinderella Story. Their findings provide a different take on Cinderella compared to Cinderella

used for this study since this study elected not to use public versus private as a criterion. This was not used as part of the definition of Cinderella because the mainstream college sports landscape does not focus on this. Rather, the crux of the Cinderella Story is about unexpected success regardless of institutional funding sources. The aura of Cinderella is watching a team rise from oblivion and take down teams that proved to be a better opponent based on their record.

Table 3: Three Years After Cinderella (Three Year Lagged Outcome)

lag3	Coef.	Std. Err.	t	P>|t|
Treatment (Cinderella)	-0.149	0.114	-1.31	0.193
Enrolled Logged	0.630	-0.341	1.85	0.068
Applicants Logged	0.466	0.282	1.65	0.101
Admissions Logged	-0.115	0.309	-0.37	0.711
SAT	-0.003	0.001	-0.25	0.803
Gifts Adjusted Logged	0.047	0.061	0.78	0.439

Just as Table 2 found no statistical significance, Table 3 shows that men's basketball spending decreases by 14.9% when going from a non-Cinderella team to a Cinderella team. While there have been studies that look at enrollment, applications, admissions, SAT scores, and Gifts, none have examined the effects, if any, of long-term spending. Prior literature, albeit not men's basketball expense related, did find that the effects of winning or success wane each subsequent year from the Cinderella Story (Baker, 2008; Chung, 2012; Shapiro et al., 2009; Smith, 2012; Humphreys & Mondello, 2017; Meer & Rosen, 2008).

Summary

While this study attempted to determine if there is statistical significance in men's basketball spending, the results showed otherwise. The data indicated that there is no statistical significance in men's basketball spending when going from a non-Cinderella team to one that is Cinderella whether it was one, two, or three years after Cinderella. The results indicated that

institutional factors of SAT score, enrollment, admissions, applications, and gift-giving were also not statistically significant in influencing men's basketball spending. These findings indicate that there is no benefit for this outcome from being considered a Cinderella Story. Prior research that focused on men's basketball Cinderella Stories found that there is statistical significance in applications and percent admitted three years later but that study used a different definition and did not evaluate whether the team advanced to the Sweet 16 (Childs, 2018). Furthermore, the studies look at different outcomes which further extend the perspective of what constitutes a Cinderella Story. Another study that examined Cinderella Stories found no change in the number of applications but did find significance in the institution's first-year undergraduate enrollment two academic years following (Collier et. al., 2020). However, this study defined Cinderella as any team that won at least 2 games (excluding "play-in" games, which started in 2011), did not enter the tournament as a 1-seed or 2-seed, and was referred to in the media as having a "Cinderella," "upset," "underdog," "surprise", "darling" or "sweetheart," run in the tournament.

CHAPTER 5: CONCLUSION

The purpose of this study was to determine the effect of men's basketball expense after a team's Cinderella Story. While other studies have looked at Cinderella Stories in men's basketball (Childs, 2018; Collier et al., 2020), neither looked to examine men's basketball expense. Additionally, and perhaps most importantly, what differentiates each of the studies is their definition of a Cinderella Story. While the origins of the term Cinderella Story can be traced back to 1939 in an article in a Lubbock, Texas newspaper regarding a high school basketball team's unexpected success, there is no definitive definition of the term which makes studying it so intriguing yet challenging.

Cinderella Stories can be defined many ways, not only as evident in academic research (Childs, 2018; Collier et al., 2020) but there also are a host of definitions that come from mainstream media or, more relevant, sports media. Because there is no clearly defined and universally accepted definition, there is plenty of room for interpretation. But, at the heart of the definition, is the fact that the team achieved unexpected success.

What makes this study's definition of Cinderella different from the others is that it relies on elements that are easily found in the media. What makes the media valuable is their audience. The crux of a Cinderella Story is derived from their audience. It is the media who promotes Cinderella Stories and brings them to national prominence which makes those teams part of the "front porch to the University".

Being the "front porch," college athletics exposes institutions to an audience on a national or regional level. It exposes them to an audience that might not be aware of their existence had it not been for the athletic success. One of the ways the media posits institutions on the front porch is through the Associated Press Top 25 weekly rankings. Each week, from the week before the

season starts to the week leading up to the men's basketball tournament in March, members of the Associated Press (AP) release rankings of the top 25 teams for that given week. Hence, the role of the AP Top 25 became an element of Cinderella's definition because if a team was not ranked in the preseason AP Top 25, then it was not expected to be a contender for the national championship which is crowned by the winner of the last game in the men's basketball tournament.

Another element of this study's Cinderella definition is seeding in the men's basketball tournament. Seeding plays an important role because it clearly positions each team in a rank based on their level of success through that given season. Furthermore, the tournament is setup where the top seed (1) plays their first-round game against the lowest seed (16) with each seeding following the same pattern. Thus, it shows that the 1 seed is expected to defeat the 16 seed. If the 16 seed were to defeat the 1 seed, it would be considered an "upset" (a term coined by the media) because the 16 seed did not achieve the same level of success through its winning percentage or strength of schedule (among other factors that the committee uses to seed teams); through its win, it overcame the odds.

As motioned above, an upset occurs when a team that is not expected to win ends up winning. However, the upset is only based on one win and for the purpose of this study, one win does not constitute a Cinderella Story. What does constitute a Cinderella Story is proving that the upset win was not just a one-time occurrence but is sustainable because that team defeated two opponents that had a lower seeding than theirs. What makes a Cinderella Story a reality is winning a second game which puts the team into the "Sweet 16" which is another buzz phrase coined by the media. Advancing to the "Sweet 16" is important because it gives the media a week to cover the story since there is approximately one week between the Round of 64 and the Round of 32 and the Sweet 16.

Hence, the definition of a Cinderella Story for the purpose of this study is the following: a team that was not ranked in the preseason AP Top 25 poll, was seeded between 9th and 15th in the Tournament, and advanced to the Sweet 16. The reason why the 16th seed was excluded is because in the history of the Tournament, a 16 seed only won once.

These are all components that are covered in the mainstream media which means that they are most relatable and understandable to a national audience who are the ones that read and learn about Cinderella Stories the most, including their target market which is those who are looking to attend an institution of higher education.

Summary of Results

This student found that there is no statistical significance between a Cinderella team and non-Cinderella team with respect to men's basketball spending one, two, or three years after. In fact, this study found that there is a 7.3% decrease in men's basketball spending the following year when going from a non-Cinderella team to a Cinderella between 2004 and 2020 (the duration this study covered.) In other words, teams that made the Tournament but were ranked in the AP Top 25, won no or one game in the Tournament, and were seeded between 9th and 15th, see a 7.3% decrease in spending on men's basketball.

This study used institutional factors to see if there was a significant relationship between each of them and men's basketball spending one, two, or three years after the story. Just as there was no statistical significance when going from a non-Cinderella team to a Cinderella team, there was no statistical significance between the institutional factors (number of applicants, number of those who applied, number of students enrolled, SAT score [selectivity], and gifts [which include alumni donations]). These findings differ from the literature. Previous literature looked at the control variables in relation to athletic success generally, not specifically to basketball success.

Prior research found that the number of applicants, gifts or donations increased the following year then increased again the second year but tapered off the third year after (Baker, 2008; Chung, 2012; Shapiro et al., 2009; Smith, 2012; Humphreys & Mondello, 2017; Meer & Rosen, 2008).

Studies that looked at Cinderella Stories specifically, with respect to the control variables, found a significant change in applications and percent admitted (Childs, 2018). Cinderella teams saw a significant ($p<.05$) decrease in number of applications received, down 3.5% three years after a tournament appearance, and while percent admitted increased 1.6% three years after a tournament appearance (Childs, 2018). It is important to note that Childs defined Cinderella using different criteria. Childs argued that to be a Cinderella Story, the team had to be from one of the non-Power Five or Big East Conferences since those are the most successful in terms of winning and institutional prowess (which includes enrollment, endowment, and the fact that the Power Five conferences have been granted autonomy in terms of developing their own rules and governance). Teams in the Power Five and Big East have historically been the most successful in NCAA Division I Men's Basketball. Also, that definition did not focus on seeding or rankings because the crux of the Cinderella definition was based on the institution itself, its size, and conference. Therefore, direct comparisons with the results cannot be deduced.

Another study that examined Cinderella stories define one as the following: Cinderella run as any team that won at least 2 games (excluding "play-in" games, which started in 2011), did not enter the tournament as a 1-seed or 2-seed, and was referred to in the media as a having a "Cinderella," "upset," "underdog," "surprise", "darling" or "sweetheart," run in the Tournament (Collier et al., 2020). The purpose of their study was to determine the impact of institutional factors of applications, enrollment, selectivity, and the difference (if any) between public and private institutions). They found that better outcomes in the NCAA basketball tournament and higher

ranking in the AP college football poll all lead to increased applications in subsequent years. They also found a positive and statistically significant relationship between Cinderella runs and a school's freshmen undergraduate enrollment two academic years following their definition of a Cinderella Story. Furthermore, they found a Cinderella Story that is composed of private institutions can lead to a 3.5% increase in freshmen enrollment which is based on an increase in applications. With respect to selectivity (SAT scores), they found that the percentage of students scoring over 700 on SAT Math and Verbal exams decreases by about 2 percentage points. Unlike their study, this one did not find significance, nor did it look for differences between SAT Math and Reading. The purpose of evaluating SAT for this study was to gauge selectivity to provide a broad lens. The findings determined that there is no statistical significance in SAT scores nor is there any change in the score itself.

Implications of the Study

This study was intended to determine if athletic spending on men's basketball yields significant results if a respective institution's men's basketball team achieves unexpected success by advancing through a couple of rounds in the men's basketball tournament which is widely known as March Madness. Studying March Madness is valuable for higher education stakeholders.

For higher education stakeholders such as presidents, athletic directors, admissions team, and alumni, the results found in this study would benefit them with respect to marketing their institution as well as how their institutions set admission goals, recruitment goals, gift receiving goals, and other projections that are used to for operations to be successful. As for athletics and men's basketball itself, the findings will help the athletic director and coaching staff determine their recruiting strategy and scheduling strategy. With respect to recruiting, if the results provided positive change, then the coaching staff could consider putting more effort into attracting top talent

which would be covered in total expenses. As for scheduling, a coach could consider having a tougher out-of-conference schedule which will expose the team to stiffer competition which can ultimately strengthen each player's ability and make them harder to defeat when the conference season begins. This trickles down as it can ultimately turn a team into a threat all else being equal.

The findings in this study are significant because they show empirical evidence explaining that there is no significance in having the Cinderella Story moniker attached to their institution's name with respect to men's basketball spending. As previously mentioned, college athletics serve as the front porch to the institution. With that comes the onus for athletics to expose the school to a new audience. With the advent of social media and the evolution of media metrics, institutions can now determine not only how much web traffic their website gets, but also how many social media impressions their posts get, who is viewing those posts with respect to demographics, how long was the post being viewed, and did that post led to additional clicks on other posts or pages within the social media platform for that school. With a prominent or successful athletic program, institutional stakeholders can focus their target market and use the media metrics to determine if there are any changes that can be made to better attract their targeted student. Institutions now even have social media pages specific to their different athletic teams! The added exposure from media has facilitated another hot topic with college sports which will change the landscape of how the student-athlete is perceived and how institutions use athletics for marketing; name, image, and likeness (NIL).

Suggestions for Future Research

NIL is the next frontier in the athletic arms race. Not only is the team the front porch to the institution, but now the student-athlete themselves are part of the front porch. As of this study, student athletes have been granted the ability, by the state legislation, to be paid by sponsors to

endorse their products. College athletes can now be compensated without worrying about jeopardizing their eligibility. Just as social media was used by institutions to solicit prospective students, the advent of the social media "influencer" has a two-part fold for college athletes. One; the student-athlete uses social media to be a brand ambassador for different products. Two; the student-athlete will tend to promote their athletic abilities on their own social media account which indirectly leads to the promotion of their institution. The rise of the NIL arena will lead to a new frontier for academic research.

The area of studying Cinderella leaves much to be desired as very few studies have been centered on NCAA Division I Men's Basketball. Future research can focus on different definitions of Cinderella using the same dependent variables. Since other definitions have found statistical significance, it would be interesting to see if a modified definition, while using elements from this study, would change the outcomes. Definitions can rely on other statistical measures such as KenPom ratings which consider several other data points while still ranking teams.

Future research can also look at how qualifying for the Tournament, regardless of advancing to the Sweet 16, impacts an institution that was regardless of the Cinderella moniker. Using the dependent variables that were used in this study, future research can determine if qualifying for the tournament yields a significant change in those key admission and financial factors.

With several studies finding significance in that athletic success yields an increase in applications (Chung, 2013; McCormick & Tinsley, 1987; Pope & Pope, 2009), future research can study enrollment and if there are any trends with majors or perhaps GPA upon graduation. Current research has studied the effects on admission and financial factors between one and three years

after the Cinderella Story, but no research has investigated further academic achievement or even majors.

Their findings do have implications on NCAA economic policy makers. Since the findings indicate that institutions invest too much in coaching. This opens the debate that is currently on going which Is amateurism of the student-athletes. If the coaches are paid too much, then the money that is used in excess can go toward paying the student-athletes.

Conclusion

This study attempted to demonstrate the relationship between Cinderella Stories in the NCAA Division I Men's Basketball Tournament and men's basketball spending. This study is useful for institutional stakeholders and policymakers to determine the efficacy of unexpected athletic success and whether bolstering or investing in athletics brings desired effects to the institution. It can be used to determine strategies and tactics on how to capitalize on the added exposure while developing marketing plans that posit the institution in a flattering light. Furthermore, this study is useful to see how the unexpected success evolves over a three-year period which enables stakeholders to determine ways that can potentially minimize the diminishing returns. The crux of this research builds on the arms race and role as the front porch to the University. Institutions; like any other business, enterprise, or venture; know that competition is important to developing a unique angle in the market so that they can stand out amongst the rest (which is the arms race). What differentiates institutions is what makes it attractive to prospective students. One-way institutions can differentiate themselves is by taking advantage of the exposure their athletics programs bring to attract prospective students. Using their own data, institutional stakeholders can determine their target market then use their athletic programs as the engine to draw them as an applicant or eventually an enrollee.

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