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Design, Financial Trends and On-Field Success

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Design, Financial Trends and On-Field Success

Abstract

Since college athletic departments are considered non-profit organizations and it's expected they spend revenue in support of their overall mission which can be considered as achieving on-field success. Previous literature has uncovered multiple relationships between expenditures and revenue in comparison to on-field success. The common theory is that athletic programs must increase spending to increase wins, and increase wins to increase revenue. The purpose of our research is to explore financial trends within the rank based competition structure of NCAA Division I college football's top 25 football teams in the 2012-2015 seasons. We will also acknowledge the effects of the transition from the former Bowl Championship Series (BCS) post season structure in 2012 and 2013 in comparison to the 2014 and 2015 seasons under the playoff structure that allows the top four teams to compete for the spotlight in an additional national championship bowl game. Results from our study indicate that total expenditures are the strongest indicator of on-field success, or the final rank of an institution and supports findings in our literature that explores the financial trends within the highest level of competition within Division I College football's rank based design.

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Abstract

Since college athletic departments are considered non-profit organizations and it's expected they spend revenue in support of their overall mission which can be considered as achieving on-field success. Previous literature has uncovered multiple relationships between expenditures and revenue in comparison to on-field success. The common theory is that athletic programs must increase spending to increase wins, and increase wins to increase revenue. The purpose of our research is to explore financial trends within the rank based competition structure of NCAA Division I college football's top 25 football teams in the 2012-2015 seasons. We will also acknowledge the effects of the transition from the former Bowl Championship Series (BCS) post season structure in 2012 and 2013 in comparison to the 2014 and 2015 seasons under the playoff structure that allows the top four teams to compete for the spotlight in an additional national championship bowl game. Results from our study indicate that total expenditures are the strongest indicator of on-field success, or the final rank of an institution and supports findings in our literature that explores the financial trends within the highest level of competition in Division I College football.

Design, Financial Trends and On-field Performance

When the success of an athletic department is based on their ranked position relative to other teams then each athletic program seeks to gain an advantage by spending more than other programs on coaching salaries, operating expenses and other items deemed to promote on-field success (Dunn, 2013). Institutions within the highest level of competition in intercollegiate athletics receive a substantial amount of revenue which allows them to spend millions on operating expenses and offer competitive salaries to head coaches. Having superior facilities and coaches adds to the attractiveness of playing for a winning team which makes it easier to recruit top athletes. Top coaches and recruits are then likely to contribute to on-field success which builds a history of winning within the program and strengthens their relationship with alumni, donors and their fan base.

The budget of a university's athletic department is limited by its own resources that can be determined by their on-field success. Without large amounts of revenue, and large budgets, a program faces many challenges in regards to on-field success (Cheslock & Knight, 2015). This has influenced the common theory that increasing a programs budget has a direct impact on institutional wins which generates many tangible and intangible benefits. However, if every institution increases athletic spending then no advantage is then gained which forces athletic directors to make informed decisions on what financial categories to spend limited dollars if they want to increase the competitiveness of their program (Sparvero & Warner, 2013). The purpose of our research is to explore financial trends within the rank based competition structure of NCAA Division I college football's top 25 football teams in the 2012-2015 seasons.

Literature Review

Design and Decision Makers

College athletic departments are considered nonprofit organizations and it is expected that athletic departments spend revenue in support of their overall mission which can be considered as achieving on-field success (Sparvero & Warner, 2013). The nonprofit nature of college athletics and has created an unavoidable increase in budgetary funding when revenue and on-field performance rises (Mirabile & Witten, 2014). Current and future budgets for programs throughout the country rely on revenue generated from football ticket sales, television contracts, alumni and private donors to fund an entire athletic program (Caro, 2012). Donors, politicians, and board members may pressure university leaders to recruit or retain desired coaching and administrative personnel or other enhancements that keep the university competitive when recruiting student-athletes. Even without pressure, university leaders may believe that athletic spending in return for on-field success and is a sound investment (Cheslock & Knight, 2015). Thus, current and future financial challenges and budgetary concerns are the most stress producing issues for athletic directors (Sparvero & Warner, 2013).

In a study conducted by Dunn (2013) on funding inequalities in the National Collegiate Athletic Association (NCAA), Dunn argued that donors may pressure university leaders to support policies that influence a budget and increase the chances of on-field success which could include allowing a football program to spend all of their externally generated revenue. Members of the board of trustees with similar preferences can also shape athletic spending decisions through their influence over presidential hiring, retention, and compensation. The board of trustees may also elect university officials with similar intentions or persuade current university officials with compensation incentives. One president in this study stated, “The real power

doesn't lie with the presidents; presidents have lost their jobs over athletics. Presidents and chancellors are afraid to rock the boat with boards, benefactors, and political supporters who want to win, so they turn their focus elsewhere" (Dunn, 2013, p.46).

Economists have said that because of the rank-based competition structure of Division I college football, an arms-race between competitors is inevitable (Dunn, 2013). Conference executives are responsible for putting their accompanying institutions in the best possible position for success while considering free market reigns, some conferences are substantially more valuable than others (Dunn, 2013). Free market reigns are the tangible and intangible benefits that an institution receives from fielding a competitive athletic program and determining the actual direct benefits provided by a sport program is a difficult process. When directors of operating functions in a university setting do not have profit-motivating incentives, some expenditures are excess budgeting revenue that still needed to be used. Also, relevant costs not only include explicit costs (an accounting cost) but also implicit costs (an economic or opportunity cost). In other words, when calculating whether an athletic program is benefiting from a sport program or not, it is necessary to consider revenues that would not be received and expenses that would not be incurred without the program (Matheson, O'Connor, & Herberger 2012). The demand for college football programs is high in comparison to the lack of money to support these programs. Multiple institutions are in the process of starting football programs as a response which further adds to the gap in revenue totals among all NCAA football programs (Matheson et al, 2016).

Among BCS schools, forty-five institutions have profitable football programs. Among non-BCS schools, 6 institutions have profitable football programs (Matheson, O'Connor, & Herberger 2012). Financial inequality in intercollegiate athletics stems from these free-market

forces that influence intercollegiate athletics (Mirabile & Witte, 2014). For example, under the previous Bowl Championship series (BCS) post season system, automatic qualifying conferences including the ACC, SEC, Big East, Big 12, Big 10, and Pac-10 were guaranteed \$18 million each to distribute among their schools. The five other non-automatic qualifying conferences only received \$9.5 million. This previous system created a large advantage for institutions that belong to BCS automatic qualifying conferences. Because the NCAA operates on behalf of its member institutions, inequalities trickle down to all institutions (Lawrence, 2013). This allows elite Football Bowl Subdivision (FBS) institutions to gain substantial amounts of revenue, improve on-field performance and sustain periods of poor performance, in comparison to non-FBS institutions (Mirabile & Witte, 2014).

Financial Trends in Expenses and Revenue

Nearly 80% of all NCAA Division I sport revenue is generated by football. An average of \$10,782,886 is generated by BCS schools with football compared to an average loss of \$1,479,886 for non-BCS schools (Matheson, O'Connor, & Herberger, 2012). This volume of revenue has created funding inequalities and placed a gap in on-field competitiveness between BCS schools that generate high levels of revenue and non-BCS schools that don't (Seifried & Smith, 2011). The study conducted by Cheslock and Knight indicate that most of the institutions at the top of the revenue distribution pool remain there over time. Results from this study showed that of the programs within the top 10 percentile or externally generated revenue in 2005, 67% were still in the top 10 percentiles in 2011 (Cheslock & Knight, 2015). Almost 100% of the revenue supporting these athletic programs comes from sources other than the institution because of the amount of external revenues that they generate (Cheslock & Knight, 2015).

In the study conducted by Dunn (2013), leading FBS athletic programs, and members of the BCS-subdivision generate high levels of revenue from external sources of more than \$100 million also take fewer dollars from student fees or institutional subsidies, have extremely large and devoted fan bases and receive heavy coverage by national media sources. This study also showed that institutions at the bottom of the FBS hierarchy obtain revenue from external sources that fall below \$10 million, rely on funding from student fees and institutional subsidies, have dramatically smaller fan bases, and receive more limited attention from the national media (Dunn 2013). In the study by Matheson, O'Connor, & Herberger (2012) that accounted for revenues and expenses in intercollegiate athletics with the exclusion of subsidies painted an entirely different picture of the profitability of college athletics. Football and basketball programs at BCS schools tended to be highly profitable at nearly every school, but athletic programs overall lost money in most cases. Even with football generating in excess of \$50 million per year at the highest revenue generating institutions, athletic departments only broke even at 15 of the 166 schools in their sample and overall lost nearly \$6 million on average. Matheson et al also noted that at non-BCS schools, football and basketball rarely broke even, and athletics overall showed a deficit at every school (Matheson, O'Connor, & Herberger 2012).

The budget of a university's athletic department is limited by its own resources which can be determined by their on-field success. Literature suggests that the failure to consider efficiency will continue the cost escalation which jeopardizes financial sustainability and long term on-field performance objectives (Sparvero & Warner, 2013). Since government funding has not kept pace with university costs, fundraising has become an increasingly important part of the financial strategy for supporting a competitive football program (Cheslock & Gianneschi, 2008). Colleges

and universities are consequently seeking new revenue sources to replace declining public funding to keep up with their peer institutions (Cheslock & Gianneschi, 2008).

In the research conducted by Mirabile and Witte (2014) results suggest that the increase in college football coaching salaries has no impact on the probability of winning and that high program budgets ultimately improve on-the-field performance (Mirabile & Witte 2014). Instead, coaches receive a high salary because of past performance which is not indicative of future performance and implies that if an institution were to reduce expenditures on coaching salaries there would be little impact on the success of the team. Mirabile and Witte (2014) estimated that if the football budget is increased by \$1 million there is a 3.5% - 7.0% increase in the probability of winning any game (Mirabile & Witte 2014). Additional athletic revenue has been found to increase coaching salaries 7.5 times more than direct expenditures for student-athletes and for every dollar increase in ticket sale revenue, total expenses rise eighty-three cents (Hoffer & Pincin, 2016). After being adjusted for inflation, the research done by Sparver and Warner (2013) showed that salaries have increased 32% for professors and 750% for coaches since 1986, and that coaching salaries alone have increased 70% since 2006 (Sparver & Warner, 2013). These expenditures at leading athletic programs within the FBS and BCS-subdivision increase when externally generated revenue at these programs increases. Increased expenditures among these leading athletic programs subsequently influence other programs to increase their expenditures regardless of their price ceiling (Sparvero & Warner, 2013).

Ultimately, a programs budget and coaching compensation is highly correlated with the size of the school's fan base, the school's history of success and recent profitability (Mirabile & Witte 2014). When considering operating expenditures, every extra million dollars spent on football is estimated to increase the teams winning by 1.8 percent and the chance of ending the

season in the top 25 by 5% (Brewer, et al. 2011). Since spending more in these categories has a direct impact on institutional wins which generates many tangible and intangible benefits for the institution such as increasing ticket revenue, donations, and the overall brand of a college or university it is (Cheslock & Knight, 2015). Financial pressures are created by increases in recruiting expenses, operating expenses, coaching salaries, and the popular theory that you must increase spending to increase wins, and increase wins to increase revenues (Cheslock & Knight, 2015).

Design, Financial Trends and On-field performance

The top-40 winningest football teams in the FBS had external revenues that were more than twice as high as other programs and these correlations are strengthening over time (Cheslock & Knight, 2015). When an athletic program receives high amounts of revenue it allows them to increase spending on athletics without relying on institutional funds (Cheslock & Knight, 2015). This gives institutions the luxury of having superior facilities and the ability to pay competitive salaries to coaches. For example, Texas, Ohio State and Michigan pay their head football coaches above \$4 million per year, and possess some of the most expensive and luxurious athletic facilities (Cheslock & Knight, 2015). Having superior facilities and coaches adds to the attractiveness of playing for a winning team which makes it easier to recruit top athletes. Top coaches and recruits are then likely to contribute to on-field success which builds a history of winning within the program and strengthens their relationships with alumni, sponsors who donate and their fan base (Soebbing, Watanabe, & Wicker, 2016). This concept is also supported by the study conducted by Sefried and Smith (2011) which found no non-BCS school finished ranked among the top 25 for recruiting classes since 2005.

Athletic programs gain an on-field advantage by spending more on coaching salaries, athletic facilities, and other factors that directly, or indirectly influence on-field performance. If all schools increase spending, then no advantage is gained for any one school (Cheslock & Knight, 2015). Without large amounts of revenue, and large budgets, a program faces many challenges in regards to on-field performance. These challenges include their ability to afford experienced coaches, recruit top athletes, build or maintain superior facilities and limits their mobility within the distribution of external revenue (Cheslock & Knight, 2015). Since revenue does not increase or vary much alongside expenses and on field performance for all institutions. Increasing expenditures are difficult to maintain over long periods of time for institutions that do not have a history of success and fail to increase their institutions on-field performance. (Brewer, Pedersen, Choong-Hoon, & Clerkin, 2011). Increased spending at non-BCS programs occurs without simultaneous growth in external revenues, which leads to increased institutional subsidies or student fees for athletics (Cheslock & Knight, 2015). Thus, plans for greater on-field success by programs without a history of success have a small likelihood to succeed due to limited funding over extended periods of time (Cheslock & Knight, 2015). This theory has fueled the athletics spending arms race among FBS and BCS Division I football programs as an attempt to gain additional funding, spectator appeal, commercialism, media coverage, and alumni involvement (Sparvero & Warner, 2013).

Studies have analyzed the high level of revenue, expenses and on-field performance within intercollegiate athletics and the “winner-take-all” design (Matheson, O'Connor, & Herberger, 2012) The ability of an institution to compete was found to be based on an institutions revenue status and overall brand strength (Lawrence, 2013). Therefore, a direct comparison of these factors will provide a better understanding of the relationship between

design, financial trends and on-field performance. The purpose of our research is to uncover the relationship between the design of college athletics, financial trends, and on-field performance of The ability of an institution to compete was found to be based on an institutions revenue status and overall brand strength (Lawrence, 2013). Therefore, a direct comparison of these factors will provide a better describe the relationship between design, financial trends and on-field performance. . The purpose of our research is to uncover financial trends within the highest level of competition in Division I football's rank based competition structure of NCAA Division I college footballs top 25 football teams in the 2012-2015 seasons. This will be answered by addressing the following questions:

1. What are the financial trends that exist within the highest level of competition in Division I football's rank based competition structure?
2. Which institutional characteristics and financial categories have the greatest influence on AP top 25 ranked institutions?
3. To what extent does the size of an institutions budget determine performance?
4. What is the effect of the transition previous BCS post season structure in comparison to the current playoff structure?

Method

Sampling Technique

This research is descriptive as we will research findings to better understand and describe the relationship between financial trends and on-field performance of NCAA Division I top 25 football teams. This research is also defined as analytical as it is designed to find new conclusions and uncover significant relationships, financial trends and other findings within our secondary data collection. (Jones, 2015). This research can be classified as post-positivist in

design as there is likely broad applicability to other Division I football teams in the NCAA as this study is not absolutely predictive (Jones, 2015). Our post-positive approach also acknowledges that there are limitations within our research that exist and recognizes that there are implications within the complexity of the subject under investigation. This study was conducted with the purpose of uncovering significant relationships between financial trends and on-field success within the highest level of competition in Division I college football as we explore financial trends within the rank based competition structure of NCAA Division I college football's top 25 football teams in the 2012-2015 seasons. Of the top 25 ranked teams, the top four play in two semi-final games and the winners of those games play in the College Football Playoff National Championship game.

The sampling method being used for the current study is target sampling as we chose a sample that meets our research criteria of being within the highest level of competition in Division I football. Data for all members of our external sample is available through Equity in Athletics Disclosure Act (EADA) and USA Today. The EADA requires that all coeducational higher education institutions that participate in any federal student financial aid program and have intercollegiate athletic programs must provide financial information concerning their programs (Sparvero & Warner, 2013). The sample selection in this research is the National Collegiate Athletic Association Division I football top 25 finishers in the 2012, 2013, 2014 and 2015 seasons for a total sample population of 99 institutions after the exclusion of 18th ranked Navy Academy in 2015 based on their classification as an institution that does not participate in any federal student financial aid programs. According to Jones (2015) the minimum total sample size for descriptive statistical analysis should be fifty, suggesting that one hundred would be a better minimum target for a total population.

Sample years were chosen as they were the most data that was available and because there may be different findings under the previous BCS playoff structure in the 2012 and 2013 seasons that relied on a combination of polls and computer selection methods that created five bowl game match-ups. These bowl game matchups involved ten of the top ranked teams in the NCAA Division I FBS and included the top two teams that play in the National BCS Championship Game (Jones, W. 2015). In comparison, the 2014 and 2015 playoff structure relies on a selection committee to rank the top 25 teams based on conference championships won, strength of schedule, head-to-head results and other factors (Jones, W. 2015).

Variables and Measures

Our sample years were operationalized as 2012, 2013, 2014, and 2015 and were recorded as a nominal category as this separates institutional data by each year's top 25 ranked football programs within NCAA Division I football. The name of each institution was recorded as an independent variable using a nominal scale. Jones (2015) defined nominal data as categorical information that separates data into separate categories. Final rank per the AP poll was recorded as a dependent variable using an ordinal scale of measurement and was operationalized as a category of 1-25 where 1 represents the highest ranked institution and 25 represents the lowest ranked institution. Jones (2015) defined ordinal data as ranked items without equidistance or an absolute zero. Each institutions affiliated conference within the NCAA was recorded as an independent variable using a nominal scale of measurement which separates institutions based on their conference. The post season competition structure that was in place during that year was recorded as an independent variable using a nominal scale of measurement where 1 represents the 2012 and 2013 seasons under the BCS structure and 2 represents to 2014 and 2015 seasons under the current playoff structure. Total revenue of each football program was recorded as an

independent variable using a ratio scale of measurement and is defined as the total amount of reported revenue the football team received and generated per the EADA database. Jones (2015) define ratio data as data that is based on order, has equal units of measure that are proportional with the possibility of an absolute zero. Total expenses was recorded as an independent variable using a ratio scale of measurement and is defined as the sum of total expenses that incur through an entire year of operation. Head coach's salary was recorded as an independent variable using a ratio scale of measurement and is defined as the total amount the head coach was paid during each sample year. Total operating expenses were recorded as an independent variable using a ratio scale and is defined as a category of expenses that excludes coaching salaries and other overhead costs. Games played was recorded as an independent variable using a ratio scale of measurement and is defined as the amount of games each institution in our sample population played. Wins were recorded as an independent variable using a ratio scale of measurement and is defined as the amount of games our sample institution won.

Data Collection Instrument

All of our data was organized in a Microsoft Excel spreadsheet. The columns in our spreadsheet are "Year", "Rank", "Institution", "Playoff Structure", "Games Played", "Wins", "Conference", "Head Coaches Salary", "Total Expenses", "Total Revenue", and "Total Operating Expenses". Our spreadsheet consists of 100 rows of data which represents the top 25 football teams for each year of our objects of study. Thus, cells 2-26 in column A were labeled "2012". Cells from 27-52 in column A were labeled "2013". Cells from 53-78 in column A were labeled "2014" and cells from 79-104 in column A were labeled "2015". Once complete, our results will be upload into SPSS making sure to format correctly.

Data Collection Process

After our spreadsheet was formatted correctly our target sample institutions, their rank, season wins, games played, conference and head coach's salary during each of our four sample years was collected from USA Today and recorded in our spreadsheet (See Appendix A). The amount of games each institution won was placed in a separate column and to determine the amount of games each institution played we combined their win/loss record into a single category of total games played. Total expenses, operating expenses and total revenue was collected from the EADA website and put into separate columns (See Appendix B). Our data collection procedure was closed. In the stage of data collection and data analysis we chose a process similar to Mirabile and Witte (2014) which uses quantitative data of expenses and revenue trends to determine a team's on-field success. However we chose to determine the measure of a team's success by the rank of that institution in comparison to the amount of games played, and won.

Data Analysis Plan

Once all of our data was collected and formatted correctly it was transferred over to the SPSS statistics program we began analyzing our data through descriptive statistics; including sum totals, mean, minimum, maximum and frequency will be found of each scale of measurement (See Appendix C). Using descriptive statistics allowed us to examine and measure trends in our data within and between groups such as year, rank, conference and playoff structure. A Pearson correlation measurement analysis will be conducted at the p-value of .05 and .01 because it is the generally accepted levels of significance in sport studies. A p-value of .05 strongly suggests that there is a relationship between the two groups (Jones, 2015). Once the Pearson value correlation measurement was ran, if a significance level was found to be less than

the p-value of .05 or .01 then there is confidence that one variable can be used to accurately predict the corresponding variable.

Results

This study was designed with the purpose of exploring financial trends within NCAA Division I college football's top 25 football teams in the 2012, 2013, 2014 and 2015 seasons and determine the relationship between rank, conference, head coach salary, operating expenses, total expenses, total revenue and which of our 10 independent variables had the greatest influence on our dependent variable of rank. The variables in this study consist of year, institution, rank, conference, head coach salary, operating expenses, total expenses and total revenue from each sample year under the previous BCS post season structure and under the current playoff structure. This study first used descriptive statistics to describe our sample population and uncover financial trends relative to on-field success which we defined as AP top 25 football teams (See Appendix C). This study used Pearson value correlation measurements to uncover significant relationships between our variables (See Appendix D). Frequency tables suggest that out of our 99 sample institutions 6 institutions have a frequency of 4 which suggests that 95 of the institutions in our sample have a frequency of less than 3. The results of our frequency table on conferences revealed (SEC=26, Pac12=18, Big12=13, ACC=14, BigTen=17, MWC=4, ACC=2, None=3, Mac=1, CUSA=1) (Appendix A). A mean amount of \$25,841,875 in total expenses was spent by all of our sample institutions and a minimum amount of \$6,683,787 in 2012 compared to the maximum of \$56,214,376 spent in 2015. Operating expenses showed a minimum amount of \$1,302,283 in 2014 compared to an overall mean of \$5,302.036. Head coaches salary showed a minimum amount of \$401,820 in 2013 compared to a maximum amount of \$7,004,000. Total revenue showed that there was a minimum amount of \$6,683,787

and a maximum of \$107,400,688 compared an overall mean of \$53,090,983. The minimum amount of wins within our entire sample population was 8 compared to a maximum of 14 and a mean of 10.6 wins. The minimum amount of games played was 12 compared to a maximum amount of 15 and a mean of 13.04. A bivariate Pearson correlation measurement was ran between all of our variables (See Appendix D).

Discussion

There are a number of factors that could influence an institutions on-field success within the winner-takes all design or an institutions final ranking, and how financial resources are allocated. This paper highlighted the trends amongst the highest level of competition within intercollegiate football that many stake-holders of these institutions devote an immense amount of resources and finances towards. Our secondary data and the research conducted confirms the findings in our literature review that predict on-field success, or the rank of an institution. As expected, when rank increases so does operating expenses, head coach salary, total expenses, and total revenue in a significant amount of our sample even when considering outliers that may have suffered in regards to on-field performance given various circumstances. As our descriptive statistics showed a range of \$102,716,901 in revenue for our entire sample population of 99 institutions through the 2012-2015 seasons, and a range of \$49,530,589 in total expenses. The difference between the range in revenue and the range in total expenses shows that the gap between the amounts of revenue an institution's football program can generate is more than twice of what it costs to field a top 25 football team. The SEC was the most sample in our conference with a frequency of 26 and the only conference closest was PAC 12 with 18. Our results showed that there is a various amount of financial trends within the AP top 25 football programs. Now that we are able to better understand our sample population, a direct correlation

of these factors can help determine significant influences within our secondary data variables. A strong positive correlation between total revenue and total expenses ($r=.715$, $p<.01$) shows that expenses and revenue increases alongside each other in 57% of our total sample. The moderate significance between year and total expenses ($r=.303$, $p<.01$) in comparison to the non-significant relationship between year and total revenue ($r=.187$, $p<.05$) indicates that expenses are consistently increasing while revenue has remained fairly constant and is supported by descriptive statistical findings. The one-way analysis of variance (ANOVA) used to determine whether there are any statistically significant differences between the means of three or more independent variables yielded that the significant effect of the playoff structure on total expenses at the $p<.05$ level for the three conditions [$F(1, 97) = 4.209$, $p = .043$] comparing multiple means before and after the transition between playoff structures. These results suggest that the transition between playoff structures did not impact financial trends based on multiple non-significant relationships within our one-way ANOVA testing in comparison to the significant findings within our bivariable Pearson correlation measurements between two variables.

The moderately positive significant relationship between operating expenses and total revenue ($r=.410$, $p<.01$) indicates that these factors are increasing, or decreasing alongside another. The most significant relationship and indicator of head coaching salaries is the total expenses of a program ($r=.500$, $p<.05$). There was a strong positive correlation between head coach salary and total revenue ($r=.475$, $p<.01$) and a low positive correlation between games won and a coaches salary ($r=.246$, $p<.05$) indicating that while a head coach's salary is somewhat relative to fielding a winning program, their salary is more predicted by of an intuitions overall expenses as operating expenses and total revenue are most significantly correlated ($r=.246$, $p=.016$). As institutions are battling to reap the benefits of fielding a top 25 football team, their athletic

spending is increasing significantly alongside small increases in revenue. Head coaches salary and operating expenses yielded a correlation of .32 and a $p < .001$ which indicates that as our head coaches salary increases so does the operating expenses for that institution. The most significant results from research findings were the significant relationship between total revenue and total expenses, operating expenses and head coach salary.

Limitations

This research project only focused on various relationships between head coach salary, total expenses, total revenue, and the rank of an institution. This research only focused on Division I football teams in ranked 1st – 25th. This study was limited because we only sampled four years of data and excluded Navy College from our data as their reports were not consistent or released in the same context as all 99 other institutions. There are many ways this research can be expanded. There are many ways this study can be conducted as there is many factors that coexist in part of fielding a successful Division I football team. Expense categories can be broken into sub-categories as well as our revenue category. Another interesting study would be to evaluate each institutions recruiting class in comparison to their overall ranking and recruiting expenses or other overhead costs or the impact on presidential salaries or athletic director incentives.

Implications

Important implications in our study can be comprised of many factors. Athletic expenditure data reported to the EADA and the USA Today are self-reported by colleges and universities. If this information has been reported inaccurately, the results from this study would be inaccurate. Sometimes recruits are overlooked by universities with recruiting advantages and can contribute to short term success for institutions with less of an advantage. This scenario may

contribute to on-field performance without being a cause or effect of financial allocation. Periodically, schools may go through rebuilding periods or fail to meet performance expectations that justify their expenditures because of injuries, poor coaching and inefficient recruiting practices.

Many factors contribute to a team's on-field success and the scope of our study only examines design factors, financial trends in revenue, and expenditures similar to the study done by Matheson, O'Connor and Herberger (2012), who argued that determining the actual direct benefits of operating a sport program is a difficult process. Due to the nonprofit environment of universities and their unique accounting procedures, accurately determining the financial profit or loss from athletic programs requires an intimate knowledge of a specific university's detailed accounts and accounting conventions (Matheson, O'Connor, & Herberger 2012).

Conclusion

Research done on financial practices and their relationship to on-field success within Division I intercollegiate athletics serves to create a better understanding of effective allocations that increase or sustain on-field performance. As institutions are battling to reap the benefits of fielding a top 25 football team their athletic spending is increasing alongside revenue. However, if all institutions increase spending alongside increasing revenues, no advantage is gained. As this the BCS post season structure has change to the new play off structure there is an extra opportunity for the top four teams to compete for a national championship that attracts global attraction. How the change in the structure of the post season effected the financial trends within the teams in the top 25 is a topic that has not attracted many studies since there is limited findings due to the two years of data available.

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Appendices

Appendix A) Table. 1 Sample Institutions and Frequency

Institution	Frequency
AlabamaA	4
Arizona	2
ArizonaA	1
AuburnAU	2
BaylorBA	3
Boise St	2
ClemsonC	4
DukeDUKE	1
Florida	4
FloridaF	2
Georgia	1
GeorgiaU	2
HoustonH	1
IowaIOWA	1
Kansas S	2
Louisvil	3
LSUSU	4
Michigan	5
Minnesot	1
Mississi	1
Missouri	2
Nebraska	1
North Ca	1
Northern	1
Northwes	2
Notre Da	3
Ohio Sta	4
Oklahoma	5
Ole Miss	2
Oregon S	1
OregonOR	4
San Jose	1
South Ca	2
Stanford	3
TCUTCU	2
Tennesse	1
Texas A&	2
TexasTEX	1

UCFUCF	1
UCLAUCLA	2
USCUSC	2
Utah Sta	1
UtahUTAH	2
Vanderbi	2
Washingt	1
Western	1
Wisconsi	3
Total	99

Appendix A) Table. 2 Conference frequency

Conference	Frequency
SEC	26
Pac12	18
Big12	13
ACC	14
BigTen	17
MWC	4
AAC	2
None	3
Mac	1
CUSA	1
Total	99

Appendix B) Sample of Data Collection Sheet

<i>Year</i>	<i>Post</i>	<i>institution</i>	<i>Rank</i>	<i>Games Played</i>	<i>Games Won</i>	<i>Conference</i>	<i>Head Coach Salary</i>	<i>Operating expenses</i>	<i>Total Expenses</i>	<i>Operating Expenses</i>
1	1	The University of Alabama	1	15	14	1	5316667	7927590	88660439	41558058
1	1	University of Oregon	2	13	12	2	1800000	3328965	53982076	21038456
1	1	Ohio State University	3	12	12	5	4250000	12245150	61131726	22984985
1	1	University of Notre Dame	4	13	12	8	1088179	7323999	78349132	32373258

Appendix C) Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
GamesPlayed	99	3	12	15		13.0404	0.71313
GamesWon	99	6	8	14		10.5455	1.3944
HeadCoachSalary	99	\$6,602,180	\$401,820	\$7,004,000	\$309,142,447	\$3,122,651	\$1,413,215
OpExpPerTeam	99	\$13,932,368	\$1,302,283	\$15,234,651	\$524,901,614	\$5,302,037	\$2,478,225
TotalRevenue	99	\$102,716,901	\$6,683,787	\$109,400,688	\$5,256,007,387	\$53,090,984	\$24,594,915
TotalExpenses	99	\$49,530,589	\$6,683,787	\$56,214,376	\$2,558,345,638	\$25,841,875	\$8,810,639

Appendix D) Bivariate Pearson Correlation Results

Variables	<i>r</i>
Games Won x Operating Expenses	.246*
Head Coach Salary x Conference	-.373**
Head Coach Salary x Operating Expenses	.250**
Head Coach Salary x Total Expenses	.500**
Head Coach Salary x Total Revenue	.475**
Operating Expenses x Games Won	.246*
Operating Expenses x Total Expenses	.566**
Operating Expenses x Total Revenue	.410**
Playoff Structure x Head Coach Salary	.208*
Playoff Structure x Total Expenses	.307**
Playoff Structure x Total Revenue	.214*
Playoff Structure x Year	.894**
Rank x Head Coach Salary	-.332**
Rank x Operating Expenses	-.331**
Rank x Total Expenses	-.352**
Rank x Total Revenue	-.216*
Total Revenue x Total Expenses	.715**
Year x Head Coach Salary	.214*
Year x Total Expenses	.303**
Year x Total Revenue	.187

Note. ** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).