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Determinants of a Winning Season for Intercollegiate Football Based on Revenues and Expenses

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The University of Southern Mississippi

Determinants of a Winning Season for Intercollegiate Football
Based on Revenues and Expenses

by

Burke Ellzey

A Thesis
Submitted to the Honors College of
The University of Southern Mississippi
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Abstract

The athletic departments of many colleges and universities serve as a significant source of revenue to the university. For most colleges and universities, football is the most popular program in the athletic department. The purpose of this research is to analyze different categories of revenues and expenses of each athletic department to investigate how these factors affect the winning percentage of the specific football team. In addition, BCS and non-BCS teams are compared to see how the BCS title affects these categories of revenues and expenses. Multiple regressions are run with the winning percentage being the dependent variable with the categories of revenues and expenses being the independent variables. The results show that most p-values are not significant. External revenue sources affect non-BCS teams while internal revenue sources impact BCS teams. Further research may provide evidence of interactions among the revenues and expenses created as a synergy of the variables.

Key Terms: revenues, expenses, football, athletic, university

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Introduction

Intercollegiate athletics are an integral part of many colleges and universities in the United States. The athletic programs serve as a significant source of resources for these universities. In spite of the tremendous costs associated with competing in intercollegiate athletics, there is a widely held belief that schools profit from their athletic programs. Even though most colleges and universities are not-for-profit institutions, an athletic department profit can contribute toward the university's ability to provide quality academics. An athletic department that is profitable would free resources for other uses because the university does not have to give financial subsidies to the department.

Retail sales of clothing and accessories imprinted with collegiate athletics' team logos constitute a \$6 billion dollar industry in the United States. Colleges and universities are receiving millions of dollars from these apparel-licensing contracts. Schools also receive a significant amount of revenue from media contracts with television and radio during the regular playing season. Championship games and bowl game appearances bring additional lucrative contracts. Revenues for collegiate athletic programs include tickets sales both to the public and students' fee assessments, subsidies from the school, contributions and endowments from the alumni, general public and corporate sponsorships earmarked for the schools' athletic program. Other income sources include camps, concessions, and program sales. Conversely, the costs of a school maintaining an athletic program are numerous. Coaching and staff salaries and benefits are major costs of the program. Other costs include student scholarships, facility maintenance, conference costs, medical insurance and expenses, team equipment, and travel costs.

Football programs, as the most visible and supported sport, serve as a public figure head for many universities. Accordingly, the football program is the most significant contributor of revenue to the athletic department. Teams, however, do not have the same revenue generating abilities. Within football there are Bowl Championship Series (BCS) teams and non-BCS teams. BCS teams have a significant advantage over non-BCS teams by participating in the five bowl games that payout the highest, which is significantly higher than the other bowl games. Therefore, BCS teams have significant revenue advantages over non-BCS teams as bowl games alone generate large revenues from television contracts, other media rights, product licensing, and ticket sales. Conference membership is not the only factor that can enhance the revenue generating abilities of athletic teams. Larger schools will have a larger contribution base because of the larger alumni pool. The ability of schools to subsidize programs is disparate. Winning seasons may affect revenues.

Previous research, however, gives evidence that most NCAA Division I athletic programs are not profitable. There is a need for additional research in the area to help identify why only a few athletic departments are profitable while most other athletic departments are not profitable. The purpose of this study is to analyze the affect total revenues, specific revenue, total expenses, specific expenses, and net profit/loss have on the winning percentages of the school's football team. Contrasts between BCS and non-BCS teams will be made. Comparing BCS to non-BCS universities, evidence can indicate whether being in a BCS conference is as beneficial as it is assumed to be. This study should provide a better understanding of what contributes to making the athletic department a winner on the field. The remainder of this paper will discuss related

studies, data to be analyzed, analytical methods to be used, results of the analysis, and relevant conclusions.

Literature Review and Research Question

Prior research gives evidence of the impact that various revenues and expenses have on the ability for a collegiate football team to have a winning season. In a university setting, there are both indirect and direct 'profits' as a result of sponsoring athletic programs. Many studies (Goff, 2004; Borland, Goff, and Pulsinelli, 1992; Skousen and Condie, 1988) of indirect benefits indicate correlations between school enrollments and winning athletic programs. Few studies, using an accounting definition of "profits," analyze the relevant revenues received and relevant expenses incurred by athletic departments. By definition, these are amounts received/incurred that would not have been received/incurred had there been no athletic program at the school. This accounting definition of 'profits' will be the focus of this study, comparing and contrasting the impact of athletic revenues and expenses impact the performance record of BCS and non-BCS schools.

Profit can be examined through the analysis of revenues and expenses to determine the extent to which revenues are generated and costs are incurred. At Utah State University a model developed by Skousen and Condie (1988) analyzes revenues and expenses of the university to determine if it is advisable to drop the football program because the program is operating in a deficit. The study analyzes revenues and expenses of each sport in the athletic department. The authors give evidence that it would not be advisable to drop the football program because it would not eliminate the financial problems of the athletic department, but would actually lead to more financial pressures.

The football program is one of the most significant sources of income for the athletic department. Therefore, dropping the football program would cause financial burden on the university; however, recognizing what affects the profit of the athletic program could be beneficial.

Lawrence, Gabriel, and Tuttle (2010) provide a study about the financial challenges NCAA Division I intercollegiate athletic programs face based on the accounting practices of cost allocation. Furthermore, the paper examines how Activity-Based Costing can be applied to NCAA Division I athletic departments. “At a time when expenses are outpacing revenues and reliance on institutional support is great, athletic administrators must be armed with accurate information about the costs associated with the operation of each sport program to help in making difficult financial decisions commonplace in today’s economic climate” (Lawrence, Gabriel, and Tuttle, 2010). Concluding, the paper demonstrates that using the Activity Based Costing method could enhance the financial decisions of the athletic department. However, many universities are reluctant to use the Activity-Based Costing system, which could hurt the profitability of the university.

The profitability of athletic departments can be measured on the basis of revenues less expenses. If profitable, the athletic program can supplement other university revenues for education; if not profitable, the athletic program can require subsidies from the host university, thus diverting funds away from educational purposes (Matheson, O’Connor, and Herberger, 2012). These authors analyze the profitability of Division I athletic departments in the United States based upon several definitions of profit (see Table 1). The study subdivides revenues into three categories: subsidies from various

sources (i.e., student fees, university subsidies, and state government subsidies), contributions from alumni, and profitability of BCS schools versus non-BCS schools. Total expenses are subdivided by allocation of indirect expenses based upon ticket sales and student aid. The authors give evidence that the athletic departments at even the largest and most successful athletic programs do not generate a profit for the sponsoring school. These findings hold true even though the football and basketball programs are generally highly profitable at BCS schools.

TABLE 1 Accounting Profits Matheson, O'Connor, and Herberger (2012)		
Definition of Profits	BCS Schools	Non-BCS Schools
Total reported revenues less total reported expenses	Athletic programs are profitable at most institutions	Athletic programs are not profitable at most schools
Generated revenues (Excludes subsidies of student fees, university subsidies, state government subsidies) less total reported expenses	Overall the programs lost money (average \$2.2M) while the football and basketball components were profitable, thus subsidizing other sports.	Overall the programs lost money (average \$7.7M) including the football and basketball programs.
Generated revenues (Excludes subsidies of student fees, university subsidies, state government subsidies) less direct expenses and allocating indirect expenses	Overall the programs lost money (average \$2.2M) while the football and basketball components were profitable, thus subsidizing other sports.	Overall the programs lost money (average \$7.7M) including the football and basketball programs.
Generated revenues excluding alumni contributions less total reported expenses	Overall the programs lost money (average \$13.8M) while the football and basketball components were profitable, thus subsidizing other sports.	Overall the programs lost money (average \$9.2M) including the football and basketball programs.
Generated revenues minus expenses excluding student aid	Overall the programs made money (average \$4.0M) while the football and basketball components were highly profitable, thus subsidizing other sports.	Overall the programs lost money (average \$4.5M) including the football and basketball programs.

Many profitability variables will be incorporated into this study since net revenues are important in determining the financial status of the athletic department of the university. As previous research states, profitability of athletic departments plays a vital role in determining the overall success of the athletic department. However, there

are many factors of revenues and expenses that affect profitability. As such, it is important to analyze these factors individually in order to see which factors contribute most significantly.

Ticket Sales

One revenue factor that can influence the profitability of an intercollegiate athletic program is ticket sales. The ticket sales factor of revenues consists of the sales for admission to athletic events, which includes money from tickets sold to the public, money from tickets sold to students and faculty, and money received from shipping and handling of tickets. Not included in the ticket sales is money in excess of face value, such as preferential seating, and money from sales of conference or national tournament sales. In addition, it is important to determine what affects ticket sales.

Price and Sen (2003) study different factors that affect game-day attendance. These factors include winning percentage of home team, winning percentage of away team, rivalry between teams, conference membership, large enrollment of university, and presence of NFL football team. The study suggests, of the factors being analyzed, the winning percentage of the home team is the most important factor of game-day attendance. With an increase in game-day attendance, there is an increase in revenue from the sales of tickets to the event.

The 2012 study by Padgett and Hunt suggests “a strong positive correlation exists between winning percentage and attendance within a given season.” The authors use evidence that the six BCS conferences, which predominantly have higher winning percentages, have a higher average attendance than the five non-BCS conferences, which predominantly have lower winning percentages. The study shows evidence that there is a

significant relationship between ticket sales and winning percentage of football teams. Additional, prior evidence indicates that winning percentages enhance ticket sales. Thus, the variable of ticket sales revenue will be incorporated into this study.

Student Fees

Another factor that could influence revenue of an intercollegiate football team is student fees. The student fees factor of revenue consists of just the fees assessed on students to support athletics. However, it is difficult to compare student fees between schools due to the lack of student fees in some schools. Berkowitz, Upton, McCarthy, and Gillum (2010) states that there are 42 NCAA Division I athletic departments that did not report student fees revenue in 2009. The article also states that, of the schools that did report student fees, more than \$795M from student fees are used to support athletics. While there is significant revenue relating to student fees, a relationship between student fees and winning percentage of football teams is not found. In a not-for-profit setting and competition among schools for students, not charging student fees is an incentive for attendance; however, passing this cost on to students may be beneficial in those areas if winning teams enhance enrollments, as previous research has supported. Accordingly, student fees will be one of the revenue variables included in this study.

School Funds

The school funds factor of revenues consists of both direct and indirect support from the university, which includes state funds, tuition, tuition waivers, and federal Work Study amounts for athletes. Also included is university-provided support, such as facilities and grounds maintenance, security, risk management, utilities, depreciation, and debt service. A study by Matheson, O'Connor, and Herberger (2012) presents evidence

that a majority of athletic departments rely heavily on school funds to balance the books. Furthermore, the study suggests that one-third of BCS programs and none of the non-BCS programs would operate profitably without these school funds.

Berkowitz and Upton (2011) state that “subsidy accounts for \$1 dollar of every \$3 dollars spent on athletics at NCAA Division I schools.” Caron (2011) notes there are seven NCAA Division I athletic departments that do not receive subsidies from the general funds. All of these seven schools are in BCS conferences. These authors provide data that shows that of the top ten subsidized schools for both BCS and non-BCS schools, the average subsidy of total revenue for the BCS teams listed is 24.3% and the average for non-BCS teams listed is 74.4%. The data shows that there is a significant difference in the subsidies between BCS schools and non-BCS schools. The revenue factor of school funds will be incorporated as a variable into the study.

Contributions

The contributions factor of revenues consists of amounts received directly from individuals, corporations, associations, foundations, and clubs or other organizations to be used specifically for the athletic program. Contributions include cash, marketable securities, and in-kind contributions, such as dealer provided cars, apparel, and drink products for team and staff use. Also, the revenue from preferential seating and the amount paid in excess of a ticket’s value are included in this revenue factor. Alumni and fans’ contributions can play a significant role in financial issues of colleges and universities. Matheson, O’Connor, and Herberger (2012) state that donations to the athletic departments averaged \$4.5 million for the schools in their sample. This study defines profit generated as revenues minus contributions minus total expenses. The study

gives evidence that major football and basketball programs at BCS schools are profitable, but overall total athletic programs are not.

Sigelman and Bookheimer (1983) analyze the implication of voluntary alumni funds toward the university based on the success or failure of the athletics. This study uses a multivariate model to determine what affects alumni giving, which may clarify the relationship between winning and giving. In addition to the winning percentage of the football and basketball programs, the study analyzes several variables that could affect contributions to the athletic department. These variables include the size of the university, public versus private schools, academic quality of the school, schools that are football or basketball crazy, schools that have a culture that tends to emphasize good works, and schools that are located close to professional sports teams. The study shows evidence that success in football is the best predictor of athletic contributions. Thus, the profitability of the athletic department should increase in relation to the success of football because the voluntary alumni donations should increase. This study will test these findings by including a contributions variable.

Rights and Licensing

The rights/licensing factor of revenues consists of revenue from radio and television broadcasts, Internet and ecommerce rights received from institution-negotiated contracts, the NCAA and conference revenue sharing arrangements, and revenue from corporate sponsorships, licensing, sales of advertisements, trademarks, and royalties. Also included is the value of in-kind products and services provided as part of the sponsorship (e.g., equipment, apparel, soft drinks, water and isotonic products). The rights/licensing factor of revenues has a significant influence on the profitability of the

athletic department. One of the main reasons this provides revenue to the athletic department is because of the wide range of exposure from merchandise, television contracts, and radio contracts. An article by Bachman and Futterman (2012) states that the current television contracts will provide \$25.5 billion in rights fees to college conferences and current members of those conferences over the next 15 years. In addition, BCS conference television contracts are significantly more than non-BCS television contracts. This suggests that, since BCS teams have a higher winning percentage than non-BCS teams, people would rather see BCS teams than non-BCS teams; therefore, the price of these television contracts would be greater. As such, the increase in media rights could have a significant influence on the revenues of a college athletic department. Because of this influence on profitability of the athletic department, the revenue factor of rights/licensing will be incorporated into the study.

Expense Factors

In addition, there are many different expense factors that are used to determine the profitability of intercollegiate athletics. These include a scholarship factor, coaching staff factor, buildings/grounds factor, and other expenses.

First, the scholarship factor of expenses consists of athletically related student aid, including summer school, tuition discounts, and waivers. Also included is aid given to student-athletes who have exhausted their eligibility, are inactive due to medical reasons, and aid for non-athletes such as student managers. The scholarship factor of expenses can influence expenses drastically, thus affecting profit. Scholarships may not have an effect on the winning percentage of football teams due to the fact that every athletic department in NCAA Division I athletics is allowed the same number of scholarships per

year. However, expense of athletic departments could be affected differently due to the fact that the cost of tuition is different for each school. For example, the cost of a scholarship at Duke University is different than the cost of a scholarship at the University of Southern Mississippi. Accordingly, there may be no relationship between scholarships and winning percentage.

Secondly, the coaching staff factor of expenses consists of all salaries, bonuses, and benefits reported on the university's tax forms for coaches and staff, as well as third-party contributions. An article by Steinberg (2012) states that the average salary for head coaches at major colleges is \$1.64 million, which is a 12% increase from the prior year. The expense of coaches is steadily increasing, thus increasing the expenses for the athletic departments as a whole and decreasing profits of the athletic departments. Since the main goal of a collegiate athletic coach is to win, it would be reasonable to assume that the best coaches would coach at schools that provide them the most money. Therefore, the schools with the highest coaching staff expense should have the greatest winning percentage. As such, there is a relationship between the winning percentage of college football and coaching staff expenses.

Thirdly, the building/grounds factor of expenses consists of costs of facilities charged to the athletic department, including debt service, maintenance, utilities, and rental fees.

Lastly, the other expenses factor consists of guarantees paid to other schools, severance payments to past coaches and staff, recruiting, team travel, equipment and uniforms, game day and camp expenses, fundraising and marketing costs, spirit group support, medical expense/insurance, and conference dues.

Research Question

As shown, there are many factors of revenues and expenses that influence the winning percentages of NCAA Division I college football teams. Based on previous literature, the biggest revenue factors that will influence winning percentage are ticket sales and contributions. Studies indicate that the biggest expense factor that will affect winning percentage is coaching staff expense. Numerous studies have given evidence of the impact various revenue and expense variables have on producing a winning season. There are, however, few studies that test these variables directly to the winning percentages of teams.

This study investigates numerous revenue and expense variables to detect a relationship with the ability to be a winning team. Revenues are broken to categories including ticket sales, student fees, school funds, contributions, rights/licensing, and other revenues. Expense categories include scholarships, coaching staff, building/grounds, and other expenses. The purpose of this study is to give evidence which variables have a significant (.05) impact on producing winning seasons for collegiate football teams as defined in this study.

Research Data and Design

Data

Dependent Variable. The study selects 15 BCS teams and 15 non-BCS teams as representative of each of the conferences. Team selection for analysis is made using a random number generator. For each of these teams, the winning percentage for each season of the football team from July 1, 2007 (2006 season) until June 30, 2012 (2011

season) is obtained. Winning percentage is calculated from the win/loss record of each team.

Independent Variables. Also, for each of the teams selected, the revenues and expenses for each individual category from July 1, 2007 until June 30, 2012 are recorded from the *USA Today's* NCAA College Athletics Department Finances Database. For each year, each category of revenues is added to find the total revenue. Additionally, for each year, each category of expenses is added to find the total expenses. Total revenue less total expenses derives the net profit/loss for each season. Each category under the revenues and expenses is averaged to ensure that the data are normalized, in order that one unusual year does not affect the results. Variables for revenue are ticket sales, student fees, school funds, contributions, rights/licensing, other revenues; variables for expense are scholarships, coaching staff costs, building/grounds, and other expenses.

Analysis

The analysis of variance (ANOVA) is used to analyze the profitability of the colleges and universities. This analysis observes the mean content of variables chosen for the BCS schools and non-BCS schools. A multiple linear regression model is used to analyze the dependent variable of winning percentage to the independent variables. The regression is a parametric analytical method that is used on data that meet four assumptions. The first assumption states that the regression needs to be linear in the explanatory variables. Testing this assumption, a regression is run and the residual plots are checked visually to determine linearity. The second assumption states that the variance around the regression line must be constant. To test this assumption, a regression is run and the residual plot is analyzed to see if the residuals are scattered

randomly with little differences in the amount of variation in the residuals. If the residuals are more spread out for large values of x rather than for small values, the assumption of constant is be violated. The third assumption states that the disturbances must be normally distributed. Testing this assumption, a regression is run and, from the residual plots of the standardized residuals versus the fitted values, is assessed to determine if the sample residuals have come from a normally distributed population. The last assumption states that the disturbances must be independent. In order to test this assumption, a regression is run; the autocorrelation coefficient is computed to determine if the disturbances are independent. An autocorrelation coefficient value closer to zero means the disturbances are more independent. If the data do not meet all the assumptions, the ANOVA model and other nonparametric models are used to analyze the relationship of independent variables to dependent variable among BCS and non-BCS.

Results

Determining that the assumptions are met, the multiple regressions are run on the data incorporated into this study

Table 2 shows all the p-values for each category of revenues and expenses for all the universities, the BCS universities, and the Non-BCS universities. Any variable with a p-value that less than .05 will is a significant determinant of the dependent variable.

Regression results give evidence that the variable SCHOOL FUNDS in the All Schools category and the variable CONTRIBUTIONS in the Non-BCS category are significant.

TABLE 2			
Variable P-values by Groupings			
Variable	All Schools	BCS Schools	Non-BCS Schools
Ticket Sales	0.42137	0.43975	0.96689
Student Fees	0.14983	0.37992	0.26544
School funds	0.03414	0.08202	0.34656
Contributions	0.21771	0.21237	0.04198
Rights/Licensing	-	0.76041	0.51574
Other Revenues	-	-	-
Scholarships	0.28373	0.21433	-
Coaching Staff	0.23428	0.17078	-
Building/Grounds	0.18995	0.12121	0.82342
Other Expenses	0.24148	0.14443	0.08937

Table 3 shows all the p-values for the BCS universities from years 2006 through 2011. Therefore, in 2008 the TICKET SALES, STUDENT FEES, and SCHOLARSHIPS are all significant. In the 2009, SCHOLARSHIPS are significant. For the seasons 2006, 2007, 2010, and 2011 no variables show significant p-values.

TABLE 3						
Variable p-values						
BCS Teams For Years 2006-2011						
Variable	2006	2007	2008	2009	2010	2011
Ticket Sales	0.44469	0.38954	0.02062	0.32953	0.20159	-
Student Fees	0.66562	0.37325	0.02818	0.46475	0.13563	-
School funds	0.41175	0.38988	-	0.68268	-	0.27648
Contributions	-	-	-	0.33839	-	0.64457
Rights/Licensing	-	-	0.16174	-	0.29964	0.59292
Other Revenues	0.38352	0.98785	0.06717	-	0.07909	0.32712
Scholarships	-	0.73620	0.03244	0.03991	0.06797	0.43002
Coaching Staff	-	-	-	-	0.07803	0.18132
Building/Grounds	0.08600	-	-	-	0.06542	0.10218
Other Expenses	0.08417	0.92083	0.12422	0.31542	0.06861	-

Table 4 shows all the p-values for the Non-BCS universities from years 2006 through 2011. In 2008 TICKET SALES is significant. In 2011, SCHOOL FUNDS and CONTRIBUTIONS are significant. In years 2006, 2007, 2009, and 2010 no significant p-values are present.

TABLE 4						
Variable p-values						
Non-BCS Teams For Years 2006-2011						
Variable	2006	2007	2008	2009	2010	2011
Ticket Sales	0.38231	-	0.04714	0.72940	0.43771	-
Student Fees	0.40913	-	0.24338	0.98467	0.18983	-
School funds	0.58177	0.20379	0.19002	0.90779	0.21270	0.03943
Contributions	-	0.15767	0.37393	0.93917	0.29866	0.02613
Rights/Licensing	-	0.35809	0.05618	0.86489	0.16650	0.47610
Other Revenues	0.30554	0.20045	0.70042	-	-	0.18032
Scholarships	0.81573	-	-	0.46224	0.33599	-
Coaching Staff	-	0.18123	-	0.86011	0.84760	0.84132
Building/Grounds	-	-	0.07646	0.21492	0.86814	-
Other Expenses	0.56023	-	0.15996	0.72251	0.21258	-

Discussion

After running regression analyses of the data collected, the p-values of the independent variables show very little consistency in the data; the p-values for most variables are inconsistent through all regression models. For the most part, the BCS universities, when significant, show significant p-values toward the internal sources of revenues relative to winning seasons, such as student fees and school funds. This finding is contrary to the evidence given in Berkowitz, Upton, McCarthy, and Gillum (2010) where student fees were not significant to winning season. For Non-BCS teams, the significant p-values are related to the external sources of revenues, such as contributions and ticket sales. While not consistently significant, this result supports both Price and

Sen (2003) and Padgett and that show a correlation between winning seasons and ticket sales. Additionally, this study gives evidence supporting Sigelman and Brookheimer (1983) findings that contributions significantly affect winning percentages.

Limitations and Future Research

Having used a sample of 15 teams, increasing the number in the sample could increase the consistency of the findings for the significant variables. While very few independent variables in the study consistently contribute significantly towards winning seasons, future research should investigate synergies created as a byproduct or interactions of these variables that could work as a catalyst to producing such seasons. Additional details of revenue and expenses and non-monetary relationships offer future opportunities to continue research in order to further define determinants of successful athletic seasons.

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