# AN EXAMINATION OF THE RELATIONSHIP BETWEEN END OF SEASON CONFERENCE RANKINGS AND THE BOWL GAME SELECTION PROCESS IN THE ATLANTIC COAST CONFERENCE 

Sarah S. Humphries

A thesis submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Exercise and Sport Science (Sport Administration).

Chapel Hill
2009

Approved by:
Barbara Osborne, Esq.
Dr. Edgar Shields
John Brunner
(C) 2009

Sarah S. Humphries
ALL RIGHTS RESERVED


#### Abstract

SARAH S. HUMPHRIES: An Examination of the Relationship Between End of Season Conference Rankings and the Bowl Game Selection Process in the Atlantic Coast Conference (Under the direction of Barbara Osborne, Esq.)

The purpose of this study was to determine if there was a relationship between the end of season conference rankings of football teams in the Atlantic Coast Conference and the bowl selection process over a five year period from the 2004-2005 season through the 2008-2009 season. The study examined the relationship between the end of season conference ranking of each season and bowl game attendance as a percentage of stadium capacity, bowl game payout, and bowl game television ratings. A Spearman Rank Order Correlation, a non-parametric measure of correlation was used to examine the correlation between the end of season conference ranking and the additional variables. The results indicated that there was a pattern of significance in the correlation between the end of season conference ranking and bowl game payout. In the ACC, where participation in a bowl game can have a meaningful impact on a team, it would appear that there is a relationship between the end of season conference ranking and the examined variables. When based on bowl game payout, the conference has been successful over the last five years in their bowl selection process.


## TABLE OF CONTENTS

LIST OF TABLES ..... vi
Chapter
I. INTRODUCTION ..... 1
Purpose ..... 2
Limitations ..... 2
Delimitations ..... 3
Assumptions ..... 3
Definitions ..... 4
Research Questions ..... 5
Significance .....  6
II. REVIEW OF LITERATURE ..... 7
History of Intercollegiate Football ..... 7
History of the BCS ..... 10
Bowl Coalition ..... 10
Bowl Alliance ..... 11
BCS ..... 13
ACC ..... 14
ACC Football ..... 15
Bowl Game Tie-Ins with ACC ..... 17
Importance of Bowl Payout ..... 23
Importance of Television Ratings ..... 24
Stadium Capacity ..... 27
III. METHODOLOGY ..... 29
Purpose ..... 29
Sample ..... 29
Variables .....  30
Data Collection ..... 31
Data Analysis ..... 31
IV. RESULTS ..... 33
2004-2005 ..... 33
2005-2006 ..... 34
2006-2007 ..... 35
2007-2008 ..... 36
2008-2009 ..... 37
Conference Ranking and Bowl Game Attendance ..... 38
Conference Ranking and Payout. ..... 39
Conference Ranking and Bowl Game Television Ratings ..... 40
V. DISCUSSION ..... 42
2004-2005 Bowl Season ..... 42
2005-2006 Bowl Season ..... 44
2006-2007 Bowl Season ..... 47
2007-2008 Bowl Season ..... 50
2008-2009 Bowl Season ..... 52
Patterns from the 2004-2005 Season to the 2008-2009 Season ..... 54
Suggestions for Future Research ..... 55
Conclusion ..... 56
REFERENCES ..... 58

## LIST OF TABLES

Table
4.1 2004-2005 Bowl Breakdown ..... 34
4.2 2005-2006 Bowl Breakdown ..... 35
4.3 2006-2007 Bowl Breakdown ..... 36
4.4 2007-2008 Bowl Breakdown ..... 37
4.5 2008-2009 Bowl Breakdown ..... 38
4.6 Correlation between End of Season Conference Ranking and Bowl Game Attendance ..... 39
4.7 Correlation between End of Season Conference Ranking Bowl Game and Payout ..... 40
4.8 Correlation between End of Season Conference Ranking And Bowl Game Television Ratings ..... 41

## CHAPTER 1

## Introduction

The NCAA Division I Football Bowl Subdivision has reached a level of competition where success is defined by many factors other than the final score at the end of the game. Out of 117 Division I Bowl Subdivision athletic departments, 68\% reported an average gain of \$9.2 million from football programs alone in 2003 (Fulks, 2005). The average Division I Bowl Subdivision expenditure on football was $\$ 13$ million (Fulks, 2005). All football teams competing on the Division I Bowl Subdivision level have opportunity to qualify for a postseason bowl game invitation. Along with the invitation to continue their season in a post-season bowl game, comes a list of financial responsibilities the school must incur. It is possible for a school to spend between $\$ 450,000$ and $\$ 700,000$ to cover the cost of participating in a bowl game (Staley, 2007). At the conclusion of the 2008 NCAA Division I Football Bowl Subdivision season, a total of 34 bowl games were played, providing 68 teams with the opportunity to extend their season anywhere from four to six additional weeks. The Atlantic Coast Conference (ACC) had ten teams participating in bowl games, nine of which were a part of contractual agreements between the conference and the bowl game (Atlantic Coast Conference, 2008). These teams combined to generate $\$ 30.2$ million in bowl guarantees for the conference as a whole, which were then equally split to be shared among all twelve conference schools. Along with the revenue generated from the bowl payouts, participating teams have the opportunity to spend additional time in the public eye, as all nine bowl games contracted with the ACC have television contracts with various broadcasting companies in place (Atlantic Coast

Conference, 2008a). The exposure for a team presented by television is an additional benefit experienced by the participating schools. Of these nine bowl games in 2008, six of them were played in stadiums that serve as home to a professional sports team, creating an average stadium capacity larger than the average stadium capacity of the twelve ACC school stadiums (Atlantic Coast Conference, 2008).

The selection process to determine which team plays in which bowl game is structured such that each bowl game offers an invitation to the team that they would like to have competing in their bowl. The significance of factors such as bowl payout, television ratings and bowl game attendance as a percentage of overall stadium capacity along with the method of bowl selection raises the question whether post-season bowl selections accurately reflect the end-of-season conference standings.

## Purpose

1 The purpose of this exploratory study was to determine if there was a relationship between the end of season rankings of football teams in the Atlantic Coast Conference and the bowl selection process over a five year period from the 2004-2005 season through the 2008-2009 season. The study examines bowl game factors including bowl payout, television ratings and stadium capacity in an effort to determine the overall effectiveness of the current selection process for bowls contracted with the Atlantic Coast Conference.

## Limitations

1) The study analyzes bowl games that may have to invite more than one team, based on their first choice team declining their invitation.

## Delimitations

1) The study is focused on a five year period of bowl games with tie-ins with the ACC and does not look at years prior to that period.
2) The study examines the rankings of the ACC at the conclusion of each season and does not examine any other conference that may be participating in the bowl games.
3) The bowl game payouts were delimited to the 2004-2005, 2005-2006, 2006-2007, 2007-2008, and 2008-2009 bowl seasons.
4) The television ratings were delimited to the 2004-2005, 2005-2006, 2006-2007, 20072008 and 2008-2009 bowl seasons.
5) The stadium capacities were limited to the 2004-2005, 2005-2006, 2006-2007, 20072008 and 2008-2009 bowl seasons.
6) The bowl game attendance figures were limited to the 2004-2005, 2005-2006, 20062007, and 2008-2009 bowl seasons.

## Assumptions

1) Departmental and Program revenue and expenditures reported by member institutions provide an accurate representation of the programs' financial status.
2) Bowl game payouts, television ratings, stadium capacities and attendance figures have been accurately reported.
3) In a given year, the ACC will have an adequate number of teams to qualify for postseason bowl competition and send a member participant to all nine bowls with which the conference has a contract.

## Definitions

ACC (Atlantic Coast Conference): Comprised of 12 Division I Bowl Subdivision football teams: Boston College, Clemson University, Duke University, Florida State

University, Georgia Institute of Technology, University of Maryland, University of Miami, North Carolina State University, University of North Carolina, University of Virginia, Virginia Polytechnic Institute and State University, and Wake Forest University.

Big 10: comprised of 11 Division I Bowl Subdivision football teams: University of Illinois, Indiana University, University of Iowa, University of Michigan, Michigan State University, University of Minnesota, Northwestern University, The Ohio State University, Penn State University, Purdue University, and University of Wisconsin.

Big 12: comprised of 12 Division I Bowl Subdivision football teams: Baylor University, University of Colorado, Iowa State University, University of Kansas, Kansas State University, University of Missouri, University of Nebraska, University of Oklahoma, Oklahoma State University, University of Texas, Texas A\&M University, and Texas Tech University.

Big East: comprised of 8 Division I Bowl Subdivision football teams: University of Cincinnati, University of Connecticut, University of Louisville, University of Pittsburgh, Rutgers University, University of South Florida, Syracuse University and West Virginia University.

Bowl Championship Series: (BCS) The teams selected include the conference champion from each of the six BCS conferences plus two additional at large selections. The nationally top ranked and second ranked teams are placed in the BCS Championship game. The BCS conferences are: ACC, Big 10, Big 12, Big East, Pac10 and the SEC. The Bowl Championship Series includes the following four bowl games: the Fiesta Bowl, Orange Bowl, Rose Bowl and the Sugar Bowl and additionally the National Championship game.

Bowl Eligible: Refers to any NCAA football team that is able to play in one of the 34 bowl games that are a part of the Division I Football Bowl Subdivision season. In order to be bowl eligible, a team must have a record of .500 or better, including conference and out-of-conference games, and the team must not be on probation. The NCAA allows one victory per season over a Division I Football Championship Subdivision team to count toward an Football Bowl Subdivision team's bowl eligibility, as long as the Football Championship Subdivision team has provided financial aid for football averaging out to at least 56.7 full scholarships over the preceding two years.

NCAA Division I Bowl Subdivision: member institutions sponsor a minimum of 16 varsity sports, fund a minimum of 200 scholarships, average 15,000 minimum in home football attendance and play at least five home games against Division I Bowl Subdivision opponents. This division was formerly known as Division I-A.

Pac-10(Pacific-10 Conference): comprised of 10 Division I Bowl Subdivision football teams: University of Arizona, Arizona State University, University of

California, University of Oregon, Oregon State University, Stanford University, University of California-Los Angeles (UCLA), University of Southern California, University of Washington, and Washington State University.

SEC (Southeastern Conference): comprised of 12 Division I Bowl Subdivision football teams: University of Alabama, University of Arkansas, Auburn University, University of Florida, University of Kentucky, Louisiana State University, University of Mississippi, Mississippi State University, University of South Carolina, University of Tennessee, and Vanderbilt University.

## Research Questions

1) Is the bowl selection process of ACC teams successful in placing teams in the correct bowl game based on the given bowl game factors?
a. Is there a correlation between the end of season ACC rankings and bowl game payout in each of the examined five years?
b. Is there a correlation between the end of season ACC rankings and television ratings in each of the examined five years?
c. Is there a correlation between the end of season ACC rankings and bowl game attendance as a percentage of stadium capacity in each of the examined five years?
2) Is there a pattern of change over the examined five year period in the correlation between the variables?

## Significance

The significance of this study is the insight it provides for future researchers and athletic administrators in understanding the implications of participating in a bowl game as well as the perceived effectiveness of the current bowl selection process in the ACC. This study provides a greater understanding of how various bowl factors relate to the end of season conference rankings. It provides athletic administrators with means to further examine the
relationship between a team's conference rank and the rank of various factors of the bowl that team participates in. The study provides insight pertaining to the potential need for modification of the bowl selection process based on the current relationship between rankings and bowl game factors. This study serves a representation of the notion that success in Division I Bowl Subdivision football has become about much more than the final score at the end of the game.

## CHAPTER 2

## Review of Literature

In this chapter, relevant literature to the topic of intercollegiate football is examined. The first section provides the history of intercollegiate football. The second section examines the history of the Bowl Championship Series while the third section examines the history of the Atlantic Coast Conference and its' bowl history. The fourth section details the history of the bowl games that the Atlantic Coast Conference has current tie-ins with and the fifth section addresses the importance of the examined factors to the college football culture.

## History of Intercollegiate Football

Since the first intercollegiate football game was held toward the end of the $19^{\text {th }}$ century, intercollegiate athletics and their football programs have rapidly grown into a multimillion dollar entertainment industry as well as a national pastime (Conlin, 1986 \& Dunnavant, 2004). The first mention of athletic contests among United States college students is found in the records of a Princeton faculty meeting in May 1761 with cross country running and gymnastics the most popular sports. Intramural games of football were believed to have taken place within a college, often between courses at West Point, Harvard, Yale, Princeton, Amherst and Bowdoin in the early and mid 1800s (Lawrence, 1987). The first intercollegiate athletic event was a rowing contest in 1852 between Harvard and Yale and the first intercollegiate football game was held on November 6, 1869 between Princeton and Rutgers in New Brunswick, New Jersey (Murphy and Trandel, 1994). The first set of intercollegiate football rules were established on October 19, 1873 by a group of representatives from Harvard, Yale, Columbia, Princeton, and Rutgers. In

1876, representatives from Harvard, Yale, Princeton, and Columbia met in Springfield, Massachusetts to discuss the formation of a governing body and the Intercollegiate Football Association (IFA) was the result (Lawrence, 1987).

The IFA met at least once a year to update and modify the rules, until it disbanded in 1894 due to lack of membership. During these early years, student-athletes were exclusively in control (Conlin, 1986). The violent nature of the game in its early years prompted many schools to eliminate their football programs and on December 5, 1905 representatives from 62 colleges met and formed the Intercollegiate Athletic Association of the United States (IAAUS). The IAAUS was much more durable than previous football organizations because they enforced changes in the rules, and colleges had to deal with the problem of mass injuries in collegiate football. One of the committee's primary goals was to eliminate rough and brutal play (Lawrence, 1987).

Another reason for the success of the IAAUS was the shift in representation (Lawrence, 1987). Students were no longer serving as members; it was predominantly faculty members and official representatives which created a more stable environment (Conlin, 1986). In 1910, the IAAUS changed its name to the National Collegiate Athletic Association (NCAA) and among the NCAA's first official acts was the establishment of the Football Rules Committee, which monitored the sport and recommended changes that would be voted on at each annual convention. The rules changes overall reduced the number of deaths in college football, never again reaching the rates of pre-1905. Rule changes included banning dangerous tactics such as the flying wedge, hurdling, clipping, and spearing (Smith, 1981).

Over the years, the NCAA made changes to retool the specifications of the organization. Unlike the other eighty eight NCAA sports, there is no championship for Division I-A college
football, but teams have the opportunity to compete in postseason bowl games (Conlin, 1986). The NCAA created a Committee on Extra Events in 1950 to establish and enforce regulations regarding postseason games. The regulations limited a school to one postseason appearance, regulated revenue sharing and originally required that sponsors of a postseason game invite NCAA representatives to serve on the event's board (Lawrence, 1987). In 1976 there was a proposal to establish a Division I-A football championship based on the recommendation of a special committee that studied feasibility of a playoff but the proposal was withdrawn. In 1977, the College Football Association (CFA) was formed by 61 schools who considered themselves to have major football programs and felt there was too great a disparity between Division I programs (Lawrence, 1987). CFA members pushed for reorganization of NCAA Division I and at the 1978 NCAA convention, it was decided through a majority vote to restructure Division I football. The NCAA reorganized Division I into Division I-A and Division I-AA with Division I-A consisting of larger schools that sponsored nationally competitive football teams and Division I-AA consisting of schools that played major, but not big-time football (Lawrence, 1987).

The NCAA established four original criteria for Division I-A membership in 1978. The priorities included the institution had to sponsor at least eight varsity programs, schedule at least 60 percent of football games against Division I-A opponents, average a minimum of 17,000 in paid attendance at home football games from 1974-1977 and had to use a stadium for home games that had a 30,000 permanent seat minimum (Lawrence, 1987).

Proposals regarding the establishment of a Division I-A football championship resurfaced at the 1988 NCAA convention as well as in 1994, when a panel was formed to gather information regarding the viability of establishing a Division I-A football championship. The

NCAA decided not to pursue it further at that time (Dunnavant, 2004). During the 2005 season, there were 117 Division I-A schools and 28 bowl bids were available during the 2005-2006 postseason (Bowl Championship Series, 2009).

## History of the BCS

The first bowl game played was the East-West Football game in 1902 that was played in effort to enhance the festivities of the Tournament of Roses in Pasadena, California. This game featured Stanford and Michigan and the result was a Michigan victory with a final score of 49-0. The Tournament of Roses post-season game resumed in 1916 when Washington State defeated Brown 14-0. In 1923, the Rose Bowl was played for the first time in the newly-constructed Rose Bowl Stadium. This game was played in front of 52,000 spectators and resulted in a University of Southern California 14-3 victory over Penn State University. By 1940 there were four major college bowl games including the Cotton Bowl, Orange Bowl, Sugar Bowl and the Rose Bowl and the total number of post-season bowl games continued to grow each decade and at the conclusion of the 2008 season there were 34 bowl games played (Bowl Championship Series, 2009b).

## Bowl Coalition

In 1992, the Bowl Coalition agreement was created by commissioners of several conferences, representatives of four bowl committees and representatives from Notre Dame. The Coalition was structured such that the champions of the Big East Conference and the Atlantic Coast Conference and Notre Dame would meet either the champion of the Big Eight conference in the Orange Bowl, Southeastern conference in the Sugar Bowl or Southwest conference in the Cotton Bowl. The Coalition was structured such that if the champions of the Big East or ACC or Notre Dame had been ranked number one or two at the end of the regular season they would
have met in the Fiesta Bowl for the national championship. The spots that then became available pool of the number two teams in the Atlantic Coast, Big East, Big Eight, Pacific-10 and Southwest conferences. In effort to guarantee these at-large teams a post-season opportunity, the conferences contracted with the Gator Bowl and the John Hancock Bowl to create three additional spaces for number two teams. The Coalition was in place following the 1992, 1993 and 1994 seasons (Bowl Championship Series, 2009b).

While the Coalition was successful in pairing the top two teams in the country in the national championship game two of the three years it existed, it had limitations. It could not pair the champions of the Big Eight and Southeastern conferences in any bowl game and because neither the champion of the Big Ten or Pacific-10, it could not pair either of those champions with an opponent from another conference. The Coalition was a nine year agreement, subject to review after three years. After the first three years, in January 1995, the parties agreed to end the agreement, moving to a new system-the Bowl Alliance (Bowl Championship Series, 2009b). Bowl Alliance

In 1995, the bowl structure between the conferences, with the exception of the Big Ten and the Pacific-10, was modified to try and retain historic bowl venues and also increasing the likelihood of pairing the number one and two teams in the country. The Alliance was set-up to allow the champions of the ACC, Big East, Big Eight, SEC and Southwest Conferences along with an at-large team to be matched in the three alliance bowls. These bowl games included the Fiesta, Sugar and Orange Bowl. A second at-large team was added beginning in 1996 when the Big 12 Conference took the place of the Big Eight and Southwest Conferences. The Alliance made two significant changes in effort to enhance the opportunity to produce a national championship game (Bowl Championship Series, 2009b). First, it eliminated conference-
champion tie-ins in the three bowls, which gave those bowls the flexibility to choose the best match-ups. Second, it included two at-large spots which were open to all Division I-A teams that won at least eight regular season games or ranked in the top twelve or no lower than the lowestranked conference champion participating in the Alliance (Bowl Championship Series, 2009b).

The major difference from the Bowl Coalition was that none of the participating conference champions would be committed to playing in any bowl game as they had in the past. This procedure allowed the Alliance bowls to match conference champions in games that would not have been played under the previous conference bowl affiliation arrangements. In 1995, under the Bowl Alliance, a national championship game in the Fiesta Bowl matched the only two undefeated teams in the nation in Florida and Nebraska. The Bowl Alliance continued for three seasons from 1995 to 1997 (Bowl Championship Series, 2009b).

Despite the success of the Bowl Alliance, the conference commissioners decided to incorporate the Big Ten and Pac-10 champions into a bowl arrangement. These two conferences reached an agreement with the Rose Bowl, that the Rose Bowl would host a national championship game in rotation with the other bowls, and that if the conference champions from the Big Ten and Pac-10 were ranked number one and two in the country, they would not play their traditional game in Pasadena (Bowl Championship Series, 2009b). The Rose Bowl, along with the Fiesta, Orange, and Sugar Bowls were informally referred to as the "Super Alliance" and later these bowls became the Bowl Championship Series (Bowl Championship Series, 2009b).

BCS
From the time of inception in 1997, the BCS was designed to feature the top two ranked teams in the national championship game and to create competitive matchups in the three other
games that were a party of the system. It was not the intention of the BCS to have the next six ranked teams automatically fill the remaining three BCS games. These bowls would be provided flexibility to exercise freedom of selection that would create locally attractive games and ultimately increase ticket sales.

The conference champions of the six founding conferences, ACC, Big East, Big Ten, Big 12, Pac-10 and SEC, were awarded automatic qualification each year. Any Division I-A independent team or champion of the Western Athletic Conference, Conference USA or any other Division I-A conference, qualified for a berth if it ranked sixth or higher in the BCS standings. If such a team did qualify by finishing sixth or higher, Notre Dame would also qualify if it was ranked in the top 10 in the final BCS standings or had won at least nine games (Bowl Championship Series, 2009b). If there were spots still available after all the automatic qualifiers were identified, the bowls would then select their participants from a group of eligible at-large teams. This group was made by all Division I-A teams that won at least eight games and were ranked among the top twelve teams in the BCS standings (Bowl Championship Series, 2009b).

A new mathematical formula was created to determine the participants, the BCS standings. The standings consisted of four elements: subjective polls of writers and coaches, the average of three computer rankings, the teams' records, and a strength-of-schedule index based on the records of a team's opponents and its opponents' opponents. Currently, the formula consists of three parts: (1) The USA Today Coaches Poll, (2) the Harris Poll, and (3) an average of six computer poll rankings (Bowl Championship Series, 2009c).

The system brought back regional consideration regarding team selection. Unless the bowl was hosting the national championship, or the teams qualified to play in the national
championship in another bowl, the conference champions were assigned to set BCS bowl games. The champion of the Big Ten conference would play in the Rose Bowl against the champion of the Pac-10 conference. The winner of the Big 12 conference would participate in the Fiesta Bowl while the winner of the SEC would participate in the Sugar Bowl. The Orange Bowl had the choice between the winner of the ACC or the Big East (Bowl Championship Series, 2009b).

While there have been changes made to the BCS system each year since its inception in 1997, the basic framework remains the same today. Some of the changes that have been made include modifications to the computer ranking system, changes in the criteria of eligibility for atlarge consideration and requirements of automatic qualifiers (Bowl Championship Series, 2009b). In 2004, a fifth BCS bowl game, the National Championship game, was to be implemented beginning at the conclusion of the 2006 season. The game would rotate and be held at the site of one of the other BCS bowl games each year, one week after the other four bowl games.

## ACC

The Atlantic Coast Conference was founded on May 8, 1953 near Greensboro, North Carolina with seven charter members. These schools included Clemson University, Duke University, University of Maryland, University of North Carolina, North Carolina State University, University of South Carolina and Wake Forest University. On June 14, 1953, the seven members met in Raleigh, North Carolina and created a set of bylaws and officially named the conference the Atlantic Coast Conference. At this same meeting, each member institution was assessed $\$ 200.00$ to pay for conference expenses (Atlantic Coast Conference, 2009). On December 4, 1953, conference officials met again and admitted the University of Virginia as the league's eighth member. The first and only withdrawal of a school from the ACC came on June

30, 1971 when the University of South Carolina submitted its request for withdrawal. The ACC operated with seven members until April 1978, when the Georgia Tech Institute of Technology was admitted after they had withdrawn from the Southeastern Conference in January 1964 (Atlantic Coast Conference, 2009). The ACC added a ninth member institution on July 1, 1991 when Florida State University joined the conference. The conference expanded to 11 members on July 1, 2004 with the addition of the University of Miami and Virginia Polytechnic Institute and State University. On October 17, 2003, Boston College accepted an invitation to become the league's twelfth member starting on July 1, 2005 (Atlantic Coast Conference, 2009).

The 2008-2009 season marked the $56^{\text {th }}$ year of competition, and since the league's inception in 1953, ACC schools have captured 109 national championships, including 57 in women's competition and 52 in men's. In addition, NCAA individual titles have been won by ACC student-athletes 145 times in men's competition and 92 times in women's action (Atlantic Coast Conference, 2009b).

## ACC Football

The ACC had an immediate impact on the national college football scene in the fall of 1953 when the University of Maryland captured the first national football championship for the conference. Clemson captured the league’s second national title in 1981 and Georgia Tech won the national championship in 1990. After joining the league in 1991, Florida State won the national title in 1993 and again 1999 (Atlantic Coast Conference, 2008b). The University of Miami has won five national championships over the last twenty-two seasons including 1983, 1987, 1989 and 2001 when they were unanimous national champions and in 1991 they shared the national title with University of Washington. Following the 2007-2008 season, ten ACC players earned first team All-America honors, while nine others received second or third team honors.

The twelve member institutions of the ACC have produced 533 first of second team AllAmericans and 73 first team academic All-Americans (Atlantic Coast Conference, 2008c).

Over the past three years, the ACC has had more players selected in the National Football League (NFL) draft at 115, than any other conference and, in that time has had more players taken in the first round of the NFL Draft at 25, than any other league. In 2006, the ACC set NFL draft records with 12 first-round selections and 51 players drafted overall. In 2008, University of Virginia defensive end Chris Long became the third straight ACC player to achieve the feat of being the first defensive player chosen in the draft. The twelve current ACC schools have had 2 , 157 players selected in the annual professional football draft, including 217 first round selections (Atlantic Coast Conference, 2008d).

The ACC is the nation's winningest bowl conference as the twelve current league teams are a combined 145-129-5, with a winning percentage of .529 in post season play through the completion of the 2007-2008 season (Atlantic Coast Conference, 2008e). The ACC set an NCAA record in 2002 when seven of the nine teams received bowl bids. In each of the past three years, the ACC has had eight teams earn bowl invitations, a figure reached only by one other conference. The ACC features four of the top twelve winningest bowl programs in the nation. Boston College have a nation-best eight-game winning streak in the bowl games, are 136 with a .684 winning percentage. In 2007, the ACC exceeded 4.1 million fans at football games for the second straight year and recorded its second highest per game average in its history and highest since 2004, drawing an average of 53,786 fans. In 2006, the conference recorded an alltime high in attendance, as ACC teams drew 4, 485,625 fans, breaking the existing record of 3,835,260 that was set in 2005 (Atlantic Coast Conference, 2008b).

## Bowl Game Tie-Ins with ACC

The Atlantic Coast Conference currently has agreements with nine bowl games, one of which is a BCS Bowl, the Orange Bowl. The winner of the ACC Football Championship game will earn the right to represent the ACC in the Orange Bowl. A second ACC team may be chosen for participation in a BCS game either as an at-large team to compete in the Fiesta, Sugar or Rose Bowls or if the at-large team is ranked number one or two in the final BCS standings, it would play in the BCS National Championship game (Bowl Championship Series, 2009c).

The Orange Bowl is the nation's third oldest bowl game. The first Orange Bowl game was played on January 1, 1935 between Bucknell University and University of Miami. In 1929, a group of Miami businessmen formed an organization that had a goal of helping to re-vitalize the University of Miami football program and it was from this group that the Orange Bowl Committee was formed. By 1930, the leaders of the committee were convinced that Miami could do what Pasadena had been able to do with the Rose Bowl and that spectators would come to Miami for "Football in the Tropics" (Orange Bowl Championship, 2009). In 1932, Miami hosted the Palm Festival, which encouraged people to "Have a green Christmas" and the event featured a football game that featured University of Miami and Manhattan College in front of 1,800 spectators. Miami won the game with a final score of 7-0. In 1934, the second Palm Festival was held featuring a football game between University of Miami and Duquesne with Duquesne winning 33-7. When Bucknell University and University of Miami met for the first Orange Bowl in 1935, there were 5,135 spectators in attendance and each team was awarded $\$ 12,500$ for participating. The Orange Bowl game the following year featured two teams, neither of which was University of Miami and it was played before a crowd of 6,568 . Those in
attendance at this game sat on wooden bleachers at the present Orange Bowl Stadium location (Orange Bowl Championship, 2009).

It was during the 1960s that the Orange Bowl Classic was first compared to Pasadena’s Tournament of Roses as an equal as the Bowl had hosted its first two national championships during the 1950s. In 1965, the Orange Bowl was televised by the National Broadcasting Corporation (NBC) and was moved to 8:00pm, New Year's Day. The Orange Bowl hosted four national championships during the 1980s. In 1989, Fed Ex became the title sponsor of the Orange Bowl Classic beginning with the game on January 1, 1990. The benefit of adding Fed Ex was seen in that it helped the Bowl to raise the payout to over four million dollars to each participating school. It was in 1998 that conference affiliations with bowl games were reestablished and the Orange Bowl was partnered with the champion of the ACC or the Big East conference and beginning in 2006 the Orange Bowl began its exclusive agreement with the ACC (Orange Bowl Championship, 2009).

The Gator Bowl is the sixth oldest college bowl game and has been played since 1946. It was the first game to ever be televised nationally from coast-to-coast. Charles Hilty, Ray McCarthy, Maurice Cherry, and W.C. Ivey each put up $\$ 10,000$ to underwrite the first game. The bowl game was not solidified until 1949 with the game between Clemson and Missouri with 39,939 in attendance and by the 1970s attendance at the Gator Bowl was regularly reaching 60,000 to 70,000 . From 1946 to 1952 the bowl game featured a team from the Southern Conference and an at-large opponent. Beginning in 1953, the game no longer featured a team from the Southern Conference, but the Southeastern Conference while the second team remained an at-large team. From 1953 to 1975, at least one SEC team appeared in 20 of 24 games (Gator Bowl Association, 2009). From 1996 to 2006, the Gator Bowl traditionally hosted the second
place ACC team along with the second place Big East team. Beginning with the 2007 game, the Gator Bowl began hosting the third place ACC team along with a team from the Big East, Big 12 or Notre Dame. The Gator Bowl has a current contract with these conferences that requires them to take a team from the Big East and Big 12 two times each over the course of the four year contract. The Gator Bowl has seen a series of different title sponsors over the course of the history of the bowl. Mazda was the first title sponsor of the game beginning in 1986, followed by Outback in 1992. Toyota became the title sponsor in 1996. Toyota remained the title sponsor until 2007 when Konica Minolta signed an agreement with the Gator Bowl for this right (Gator Bowl Association, 2009).

The Chick-fil-A Bowl was originally named the Peach Bowl in 1968. The Peach Bowl was created as a fundraiser by the Lions Club of Georgia and was taken over by the Chamber of Commerce after one year. From 1968 through 1991, the bowl featured two at large teams. Beginning in 1992, the game featured teams from the ACC as well as the SEC. In 1996, Chick-fil-A became the title sponsor of the Peach Bowl. Following the 2004 season, it became the Chick-fil-A bowl game beginning in 2005. The result in this title sponsor change was an increase in total team payout as well as an upgrade in its broadcast agreement with ESPN. Over the previous ten years, the bowl has ranked first in attendance among all non-BCS bowl games with an average 71,986 per game (Chick-fil-A Bowl, 2009). The Chick-fil-A Bowl also ranks first in giving among all bowl games. Approximately $\$ 3.47$ million in charitable and scholarship contributions have been made over the last six years by the bowl in addition to the endowment of a $\$ 100,000$ scholarship to each participating school each year.

In early 1997, the Nashville Sports Council and Nashville Area Chamber of Commerce began discussion with the SEC about hosting a post-season college bowl game. The group's
justification for bringing a bowl game to Nashville included that Nashville's reputation as a destination city, its accessibility and the ability to use a newly constructed NFL stadium for the Tennessee Titans. After considering all these points, the Nashville Sports Council, Nashville Area Chamber of Commerce, Nashville Convention and Visitors Bureau and the City of Nashville formed the Music City Bowl, Inc. in 1997. The bowl signed a broadcasting contract with ESPN to broadcast the Music City Bowl through 2013 and also signed with the SEC as one of the representing teams in 1998. Gaylord Hotels, a division of Gaylord Entertainment Company agreed to serve as the title sponsor of the game in 1998, which helped to solidify the bowl as one of Nashville's most important events. Beginning in 1999, the bowl game would feature teams from the SEC as well as the Big East conferences. Starting in 2002, the Big 10 signed on to replace the Big East and beginning in 2006, the two teams came from the SEC and the ACC (Gaylord Hotels Music City Bowl, 2009). Since the inception of the Music City Bowl, close to 46 million viewers have watched and the bowl has contributed close to $\$ 20$ million in financial payouts to participating schools. The bowl has helped to produce nearly $\$ 142$ million in economic impact for the city of Nashville (Gaylord Hotels Music City Bowl, 2009).

The Roady’s Humanitarian Bowl was founded in 1997 and is played in Bronco Stadium on the campus of Boise State University. From 1997-1999, the bowl did not have a title sponsor, however, beginning in 1999 the bowl gained a title sponsor in Micron Technology and the official bowl name became the Crucial.com Humanitarian Bowl. There was no title sponsor for the 2004 game, but beginning again with the 2005 game and continuing through 2006, it was the MPC Computers Bowl. In 2007, Roady’s Truck Stops became the title sponsor and the bowl earned the current name of the Roady's Humanitarian Bowl. The first year that the ACC was tied in with the bowl game was 2003 and it has not renewed its contract for the 2009 season so
the 2009 Humanitarian Bowl will feature teams from the Mountain West Conference and the Western Athletic Conference (Roady's Humanitarian Bowl, 2009).

One of the most recently founded bowl games that the ACC is connected to is the Emerald Bowl which was first held in 2002 in San Francisco at AT\&T Park. In 1999, a new group, Giants Enterprises, was created to generate non-baseball uses for the team's facility in AT\&T park. An initial partnership was formed with the Big East and Mountain West Conferences who committed early to joining the bowl's efforts along with a broadcasting agreement with ESPN. The San Francisco Bowl Game Association was formed to promote and oversee the game while Giants Enterprises was maintained to provide game operations and management services. In November 2002, Diamond Foods of California agreed to become the title sponsor of the game. Currently Diamond Foods/Emerald of California serves as the title sponsor of the game (Emerald Bowl, 2009)

The Champs Sports Bowl is held by Florida Citrus Sports (FCSports) which is a not for profit membership organization that is dedicated to the promotion and development of central Florida through its four signature events including the Capital One Bowl and the Champs Sports Bowl. The inaugural game was played in 1990 and was called the Blockbuster Bowl. Originally the bowl was organized by Raycom Sports in an effort to supplement the Orange Bowl in Miami. The game was originally played in Miami before being moved to a central Florida location for each of the past eight years (Florida Citrus Sports, 2009). The title sponsor changed prior to the 1994 bowl game, changing the bowl name to the Carquest Bowl. The name changed again in 1998, when it became the MicronPC Bowl and the Micronpc.com Bowl in 2000. The bowl has experienced three name changes in the last decade as it became the Visit Florida Tangerine Bowl in 2001; it was the Mazda Tangerine Bowl in 2002 and became the Champs Sports Bowl in
2004. It is currently the only bowl game that automatically places a team from the Big 10 conference against a team from the ACC (Florida Citrus Sports, 2009).

Charlotte, North Carolina hosted its first bowl game in 2002. Raycom Sports was responsible for bringing a bowl game to Charlotte and they received approval from the NCAA to do so in May of 2002. From 2002-2004 the name of the bowl game was the Queen City Bowl and beginning in 2005, Continental Tire signed on as the title sponsor and it became the Continental Tire Bowl and the title sponsor then became Meineke Car Care Center beginning in 2006 and the bowl name became the Meineke Car Care Bowl. In its inaugural game, held in Bank of America Stadium, Charlotte hosted the largest non-BCS crowd of the 2002 bowl season and the second most attended inaugural bowl game. Over the past six years, the bowl has averaged over 62,000 fans with two sellouts (Meineke Car Care Bowl, 2009). The bowl game has been named one of the five best start-ups in sports over the last five years according to the Sports Business Journal in 2003. The 2002 bowl game had a $\$ 46$ million economic impact on the city of Charlotte and has continued to have an estimated economic impact of over \$20 million each year since (Meineke Car Care Bowl, 2009). Since 2002, the game has featured a team from the Atlantic Coast Conference and the Big East, with the exception of 2006, when the Naval Academy signed a one year contract with the bowl.

The newest bowl game to partner with the ACC for the 2008-2009 season was the EagleBank Bowl, which held its first game at the conclusion of the 2008 season in Washington, D.C. The DC Bowl Committee, Inc. was formed with the goal of bringing together three of the largest forces in the economy: government, military, and private enterprise (EagleBank Bowl, 2009). In addition, the DC Bowl Committee, Inc. was formed as a community and charitable organization to host the first ever NCAA-sanctioned bowl game in Washington, D.C. In addition
to the DC Bowl Committee, Inc. another key partner from the beginning was the DC Sports and Entertainment Commission, which works to secure and promote all sporting, entertainment and special events in the Washington, D.C. area. Prior to signing EagleBank as a title sponsor, the bowl was to be called the Congressional Bowl. In 2008 EagleBank signed on as the first title sponsor of the bowl game and according to the DC Sports and Entertainment Commission the signing of EagleBank gave the bowl game instant credibility, specifically in the local business community (EagleBank Bowl, 2009). The game itself was designed to place one of the country's military academies, rotating the Naval Academy and the U.S. Military Academy each year, contingent upon each team earning enough wins to become bowl-eligible, against a team from the Atlantic Coast Conference (EagleBank Bowl, 2009). The 2008 EagleBank Bowl featured the Naval Academy against Wake Forest University.

## Importance of Bowl Payout

In 2006 among the Division I Football Bowl Subdivision, the department-wide median generated revenues increased by $9 \%$ from 2005 and increased by $16 \%$ since 2004. The median total expenses increased 15\% from 2005 and $23 \%$ since 2004 (Fulks, 2008). Although revenues continue to increase across all three Division I subdivisions, the expenses continue to increase at a faster pace (Fulks, 2008). In 2006, the average generated revenue for a Division I Football Bowl Subdivision football program was $\$ 10,617,000$ and the highest generated revenue reported from any Bowl Subdivision program was $\$ 63,717,000$. The average reported expense for a Division I Football Bowl Subdivision program was $\$ 8,535,000$ while the highest reported expense was $\$ 32,289,000$ (Fulks, 2008). $56 \%$ of football programs in this subdivision reported that revenue generated exceeded expense while the remaining $46 \%$ reported expense to be greater than revenue. The median Football Bowl Subdivision school spends an additional \$1.46
million on salaries and benefits for assistant coaches, which marks a $23 \%$ increase since 2004 (Fulks, 2008). The two sources that constitute the majority of revenue generated are ticket sales and contributions from alumni thus bowl game payouts are one way for these schools to combat the expanding gap between revenue and expense.

In the 2002-2003 season, the total revenue generated by the BCS, including all five bowl games as well as revenue generated from television and title sponsors was $\$ 114,724,842$. The Pac 10 conference received $\$ 21,477,977$ and the Big Ten received $\$ 21,062,222$. The SEC, ACC and Big East conferences all received $\$ 16,562,222$ in revenue and the Big 12 received \$16,977,977 (NCAA, 2006).

The lowest payout among the 34 bowl games at conclusion of the 2008-2009 season was $\$ 300,000$ while the highest payout was $\$ 17$ million. In 2007, there were 22 bowls that paid between $\$ 750,000$ and $\$ 1.65$ million, five bowls that paid between $\$ 2$ and $\$ 6$ million and the five BCS bowls paid anywhere from $\$ 14-\$ 17$ million (Reid, 2007). One reason teams are looking to receive a high payout is the high expense that comes with participating in a bowl game. Close to half of the teams competing in the 2006 bowl games lost money, and the 64 teams participating had combined bowl expenses of $\$ 69.7$ million, a $\$ 16,8$ million increase from four years earlier (Reid, 2007). In 2006, the schools from BCS conferences had a bowl expense allowance of $\$ 1.4$ million dollars and total average expense of $\$ 1.9$ million.

## Importance of Television Ratings

"Television is a powerful weapon in an athletic department's arsenal. As a recruiting tool, its power is unmatched. Even in the days before cable, recruits knew about a school and its sporting program through television. Being part of the TV aristocracy gave a program unmistakable cachet. (Dunnavant, 2004)." On a more specific level, college football is
microcosm of this. According to Robert Ours, although college football did not know it at the time, it was most likely created just for television.

The history of the relationship between college football and television is not new. The NCAA made the decision to regulate television coverage of college football in 1952 with the goal of maximizing the number of institutions appearing on television while minimizing the effects television could have on game attendance (Pacey, 1985). It became clear that if college football and television would work together a large source of revenue for the institutions would result (Mejia, Kulander, \& Ljungman, 2005). In 1983 a lawsuit was filed by the University of Oklahoma and the University of Georgia claimed that the NCAA controls over broadcasting rights were outdated and in violation of the Sherman Antitrust Act (Dunnavant, 2004). On June 27, 1984 the United States Supreme Court ruled in favor of the University of Oklahoma and the University of Georgia in the National Collegiate Athletic Association v. Board of Regents of the University of Oklahoma and University of Georgia Athletic Association (NCAA v. Board of Regents of the University of Oklahoma and University of Georgia Athletic Association, 1984), deciding the 1982-1985 NCAA Football Television Plan violated the Sherman Antitrust Act (Bennett \& Fizel, 1995). This gave individual schools control over broadcasting rights to their institution's football games, and these rights could be sold at the discretion of each individual school or conference the school belonged to (Bennet \& Fizel, 1995). As schools and conferences started their own negotiations, an increase in the number of televised college football games resulted (Bennet \& Fizel, 1995).

Television provided an opportunity to bring college football, as well as the colleges themselves into homes across America (Dunnavant, 2004). According to the Neilson ratings, over 69 million households in the United States watched the five BCS games during the 2006-

2007 season. By receiving an invitation to a bowl game, it can help programs maintain or improve their program by impressing recruits and collecting as much as two million dollars (Cohen, 2008). Television ratings have always been one of the most important tools used by bowl executives as an evaluation method and the influence of ratings is growing. School and BCS administrators can look at the current BCS television contract and see that college football is more popular than ever. The latest BCS contract was signed in November 2008. The contract increased the payout by Fox from $\$ 82$ million annually to $\$ 125$ million annually, which will be paid by ESPN beginning in 2010 (Cohen, 2008). This money is then distributed among the 63 BCS members (Cohen, 2008). In recent years, the NCAA has instituted guidelines that require bowls to set aside a high percentage of revenue of the participating teams. Since ticket sales are tough to predict, bowls are beholden to the money they can bring in from sponsors and television networks, both of which care deeply about the viewership of the game. The final television rating for the 2007 National Championship game was 17.40 and the Rose Bowl saw a 11.11 rating while the other three BCS bowl games, including the Fiesta Bowl, Orange Bowl and Sugar Bowl, all had ratings between 7.0 and 8.0 (Bowl Championship Series, 2009d). The final rating for the 2008 National Championship game was 17.40 and the Rose Bowl had a rating of 13.94, almost a three point increase from the year before. The remaining three bowls also saw a slight increase in their ratings from an average of 7.34 in 2007 to 8.22 in 2008 (Bowl Championship Series, 2009d).

## Stadium Capacity

Stadium capacity is a constant issue in college football, as many believe it to be one of the main contributors in the arms race taking place in college football (Orszag, 2005). There were 34 bowl games played as a part of the 2008-2009 bowl season and all but four were played
in a stadium with a capacity over 40,000. These four included the MagicJack bowl, played at Tropicana Field, the Las Vegas bowl, played at Sam Boyd Stadium, the New Mexico bowl, played at Albuquerque University Stadium and the Humanitarian Bowl, played at Bronco Stadium (Bowl Championship Series, 2009). Of the nine bowl games that the ACC has a tie-in with, eight of the games were held in stadiums with capacities greater than 40,000 and the average capacity of all nine stadiums was 63,442 . Many of the bowl games are played in stadiums that also serve as home to professional sporting teams, which is the case with five of the bowl games the ACC has contracts with.

The Orange bowl has averaged 76,101 in attendance since 2005, which equates to $101.5 \%$ of the reported maximum capacity of Dolphin Stadium (Orange Bowl Championship, 2009). The Chick-fil-A bowl has sold out for 11 consecutive years with an average attendance of 70,151 from 1992 through 2007, which indicates during this time period the bowl has averaged a 98\% of capacity crowd (Chick-fil-A Bowl, 2009). The Gator Bowl has had an average attendance of 65,462 since 2005, $78 \%$ of its maximum capacity. The Music City Bowl has averaged 57,864 in attendance since 2005, which is approximately $84 \%$ of the capacity of LP Field ( Gaylord Hotels Music City Bowl, 2009). The Champs Sports Bowl has had an average attendance of 42,721 over the last four years, which is $60 \%$ of stadium capacity. The Meineke Car Care Bowl has had three sellouts in its seven year existence, with an average attendance of 59,270 since 2005, 81\% of the stadium capacity (Meineke Car Care Bowl, 2009). The Emerald Bowl has averaged 35,178 in attendance since 2005, which is $84.8 \%$ of the stadium’s capacity (Emerald Bowl, 2009). Over the last two years, the Roady’s Humanitarian Bowl has averaged 26,922 in attendance which is approximately $84 \%$ of the maximum capacity of Bronco Stadium (Roady's Humanitarian Bowl, 2009). The EagleBank Bowl had a first year attendance of 28,777
in 2008, which is $52 \%$ of the maximum capacity of RFK Stadium (EagleBank Bowl, 2009). Stadium capacity as well as the attendance at the bowl games each year are componetns of evaluating a bowl game that are considered by all parties involved (Football Bowl Association, 2009).

## CHAPTER 3

## Methodology

The data collection method and statistical analyses conducted are presented in this chapter. The first section re-examines the purpose of the study. The second section describes the sample used for the study. The third section presents the independent and dependent variables that were examined in the study. The fourth section explains the means by which the data was obtained and the final section presents the statistical analyses that were conducted with the data.

## Purpose

The purpose of this study was to determine if there was a relationship in the Atlantic Coast Conference between the end of season rankings and the bowl selection process over a five year period from 2004 to 2009. The study was designed to determine if there was a relationship between the end of season conference rankings and bowl game factors including bowl payout, television ratings and stadium capacity in an effort to determine the overall effectiveness of the current selection process for bowls contracted with the Atlantic Coast Conference.

## Population

The population utilized for this study are the member institutions of the Atlantic Coast Conference. These twelve schools are: Boston College, Clemson University, Duke University, Florida State University, Georgia Institute of Technology, University of Maryland, University of Miami, North Carolina State University, University of North Carolina, University of Virginia, Virginia Polytechnic Institute and State University, and Wake Forest University. The
participants for each of the five years examined varied depending on the specific member institutions that played in post-season bowl games along with variation based on the number of bowl games that the conference has a contract agreement with.

## Variables

There were multiple variables examined as a part of this study. One variable was the end-of-season conference ranking for each team that participated in a bowl game. This variable was used as the basis for measuring the on-field success of the team for the given year. Other variables used in this study included a)the bowl game payout each year examined, b)the television ratings for the bowl game during each year examined and c)bowl game attendance as a percentage of the stadium capacity of the facility at which each bowl game is played. The bowl game payout was measured by the dollar amounts that each participating team would receive reported by each bowl game to the ACC. This is an important variable as it serves as an indicator of a major source of revenue from the bowl to the school. The television ratings were reported by the ACC at the conclusion of each bowl season. The television ratings came from Nielsen Media Research Ratings, the Associated Press and USA Today. The ratings reflect the percentage of all television sets that are tuned in to a given broadcast. This variable is important to examine due to the large impact that national exposure can have on a participating school. The bowl game attendance was found by determining the percentage of attendance compared to overall stadium capacity. These figures were reported by each individual bowl game and are important because it reflects not only the interest in the bowl game but another stream of revenue for the participating schools in the form of receiving a portion of their allotment of tickets sold.

## Data Collection

Information regarding the final, end of season conference rankings was obtained from the Atlantic Coast Conference website as well as from the individual member institution athletic websites. The figures for the annual bowl game payouts were obtained from the Atlantic Coast Conference Football Operations manual from each year. Within this publication, there was a specific section dedicated to post-season bowl games that provided a detailed payout description from each bowl game that the conference was aligned with. The television ratings for each examined bowl game were obtained from the Atlantic Coast Conference and the office of the Associate Commissioner for Football, Mr. Michael Kelly. The ACC receives television ratings from each of the bowl games it has agreements with and then produces a spreadsheet outlining the television ratings for each bowl in a given season, as well as the percent change in the ratings from the previous year. The figures that detailed the bowl game attendance and stadium capacities were obtained from the ACC Football Operations manual as well as from each individual bowl game's facility information. This information was also obtained from the website of the team that uses the given stadium as their home stadium.

## Data Analysis

In order to analyze the data collected for the study, several statistical analysis procedures were used to determine the significance difference among the variables. The statistical program that was utilized for this process was Statistical Package for the Social Sciences (SPSS). The statistical procedure used to examine the correlation between the variables was the Spearman Rank Order Correlation, a non-parametric measure of correlation. When working with data at the ordinal level, a measure of correlation that is designed to handle ordinal data must be used. The Spearman Rank Order Correlation Coefficient was developed to use with this type of data
(Sheskin, 2004). The study examined the correlation between the end of season conference standings and bowl game payout, end of season conference standings and television ratings and end of season conference standings and the bowl game attendance as a percentage of stadium capacity. The correlation coefficient was examined after the test was run comparing the variables. After determining the correlation between the variables, an analysis was conducted to identify any patterns of the correlations over the examined five year period. The variables were also examined descriptively, to identify any patterns and changes in the data.

## CHAPTER 4

Results
The overall purpose of the study was to determine if there was a relationship between the end of season rankings of football teams in the Atlantic Coast Conference and the bowl selection process over a five year period from the 2004-2005 season through the 2008-2009 season. The study was designed to determine if there was a relationship between the end of season conference rankings and bowl game factors including bowl payout, television ratings, and attendance in an effort to determine the overall effectiveness of the current selection process for bowls contracted with the Atlantic Coast Conference. The results of the statistical procedures were broken down based on each research question.
2004-2005

At the conclusion of the 2004-2005 year, there were six teams from the ACC that participated in a bowl game. As indicated in Table 4.1 the results indicated the highest payout, attendance percentage as it relates stadium capacity and television ratings were all at the Sugar Bowl, one of the five BCS bowls. The lowest payout of the year came from the MPC Computer Bowl and Continental Tire Bowl who both provided a payout of $\$ 750,000$. The lowest attendance percentage came from the Champs Sports Bowl at 40.34 percent. The lowest television rating that was reported came from the MPC Computer Bowl at 1.7.

Table 4.1: 2004-2005 Bowl Breakdown

| Bowl Game | Team | Payout | Attendance (\%) | TV Rating |
| :--- | :--- | :--- | :--- | :--- |
| Sugar Bowl | Virginia Tech | $\$ 14,000,000$ | 107.43 | 9.5 |
| Peach Bowl | Miami | $\$ 2,200,000$ | 97.32 | 5.0 |
| Gator Bowl | Florida State | $\$ 1,600,000$ | 83.47 | 4.0 |
| Champs Sports Bowl | Georgia Tech | $\$ 850,000$ | 40.34 | 1.9 |
| MPC Computer Bowl | Virginia | $\$ 750,000$ | 89.11 | 1.7 |
| Continental Tire Bowl | North Carolina | $\$ 750,000$ | 99.23 | 7.8 |

2005-2006
The ACC had eight teams participate in a post-season bowl game. Table 4.2 shows that the highest payout at $\$ 14$ million, attendance percentage at 10.67 percent as well as television rating of 12.3 was found at the Orange Bowl, a BCS bowl game. The lowest bowl payout came from the Continental Tire Bowl, Emerald Bowl and Meineke Car Care Bowl with a payout of $\$ 750,000$. The lowest attendance percentage came from the Champs Sports Bowl at 44.96 percent and the lowest television rating came from the Meineke Car Care Bowl at 1.52.

Table 4.2: 2005-2006 Bowl Breakdown

| Bowl Game | Team | Payout | Attendance (\%) | TV Rating |
| :--- | :--- | :--- | :--- | :--- |
| Orange Bowl | Florida State | $\$ 14,000,000$ | 107.67 | 12.3 |
| Gator Bowl | Virginia Tech | $\$ 1,600,000$ | 75.93 | 3.93 |
| Peach Bowl | Miami | $\$ 2,350,000$ | 92.13 | 5.22 |
| MPC Computer Bowl | Boston College | $\$ 750,000$ | 95.30 | 2.33 |
| Emerald Bowl | Georgia Tech | $\$ 750,000$ | 62.06 | 2.16 |
| Champs Sports Bowl | Clemson | $\$ 862,500$ | 44.96 | 2.20 |
| Meineke Car Care Bowl | NC State | $\$ 750,000$ | 78.53 | 1.52 |
| Music City Bowl | Virginia | $\$ 780,000$ | 58.90 | 2.13 |

2006-2007
There were eight teams that participated in bowl games from the ACC at the conclusion of the 2007-2008 season. According to Table 4.3, the highest bowl game payout came from the Orange Bowl at $\$ 17$ million. The highest attendance percentage came from the Chick-Fil-A Bowl at 105.87 while the highest television rating came from the Orange Bowl with a rating of 6.98. The lowest payout was $\$ 750,000$ at the Meineke Car Care Bowl, Emerald Bowl and the MPC Computer Bowl. The lowest attendance percentage was at the Champs Sports Bowl at $57.39 \%$ while the lowest television rating was with the MPC Computer Bowl at 1.63.

Table 4.3: 2006-2007 Bowl Breakdown

| Bowl Game | Team | Payout | Attendance (\%) | TV Rating |
| :--- | :--- | :--- | :--- | :--- |
| Orange Bowl | Wake Forest | $\$ 17,000,000$ | $103.10 \%$ | 6.98 |
| Gator Bowl | Georgia Tech | $\$ 2,125,000$ | $80.62 \%$ | 3.87 |
| Chick-Fil-A Bowl | Virginia Tech | $\$ 2,825,000$ | $105.87 \%$ | 4.78 |
| MPC Computer Bowl | Miami | $\$ 750,000$ | $89.54 \%$ | 1.63 |
| Emerald Bowl | Florida State | $\$ 750,000$ | $97.18 \%$ | 4.48 |
| Champs Sports Bowl | Maryland | $\$ 2,250,000$ | $57.38 \%$ | 2.99 |
| Meineke Car Care Bowl | Boston College | $\$ 750,000$ | $70.89 \%$ | 3.87 |
| Music City Bowl | Clemson | $\$ 1,600,000$ | $98.87 \%$ | 2.23 |

2007-2008
The ACC had eight teams participate in bowl games at the conclusion of the 2007-2008 season. Based on the results from Table 4.4, the bowl game with the highest payout at $\$ 17$ million and the highest television rating of 7.4 was the Orange Bowl, while the bowl game with the highest attendance percentage was the Chick-Fil-A Bowl at 104.47\%. The lowest bowl game payout was $\$ 750,000$ at the Meineke Car Care Bowl, Humanitarian Bowl, and the Emerald Bowl. The lowest attendance percentage was found at the Champs Sports Bowl at 66.51\%, while the lowest television rating came from the Humanitarian Bowl at 0.77 .

Table 4.4: 2007-2008 Bowl Breakdown

| Bowl Game | Team | Payout | Attendance (\%) | TV Rating |
| :--- | :--- | :--- | :--- | :--- |
| Orange Bowl | Virginia Tech | $\$ 17,000,000$ | $102.6 \%$ | 7.4 |
| Gator Bowl | Virginia | $\$ 4,250,000$ | $71.17 \%$ | 2.62 |
| Chick-Fil-A Bowl | Clemson | $\$ 5,560,000$ | $104.47 \%$ | 5.09 |
| Humanitarian Bowl | Georgia Tech | $\$ 750,000$ | $84.46 \%$ | 0.77 |
| Emerald Bowl | Maryland | $\$ 750,000$ | $78.35 \%$ | 3.59 |
| Champs Sports Bowl | Boston College | $\$ 2,250,000$ | $66.51 \%$ | 3.69 |
| Meineke Car Care Bowl | Wake Forest | $\$ 750,000$ | $72.01 \%$ | 3.74 |
| Music City Bowl | Florida State | $\$ 1,600,000$ | $99.80 \%$ | 4.02 |

2008-2009
There were ten teams from the ACC that participated in post-season bowl games at the conclusion of the 2008-2009 season. The bowl game with the highest payout of $\$ 17$ million, highest attendance percentage at $101.99 \%$, and the highest television rating of 5.41 was the Orange Bowl. The lowest payout was from the PapaJohns.com Bowl at $\$ 300,000$. The lowest attendance percentage of $51.69 \%$ came from the EagleBank Bowl and the lowest television rating of 1.97 was from the PapaJohns.com Bowl.

Table 4.5: 2008-2009 Bowl Breakdown

| Bowl Game | Team | Payout | Attendance (\%) | TV Rating |
| :--- | :--- | :--- | :--- | :--- |
| Orange Bowl | Virginia Tech | $\$ 17,000,000$ | $101.99 \%$ | 5.41 |
| Gator Bowl | Clemson | $\$ 2,500,000$ | $80.09 \%$ | 4.09 |
| Chick-Fil-A Bowl | Georgia Tech | $\$ 3,250,000$ | $100.27 \%$ | 3.93 |
| Humanitarian Bowl | Maryland | $\$ 750,000$ | $83.69 \%$ | 2.44 |
| Emerald Bowl | Miami | $\$ 850,000$ | $101.84 \%$ | 4.63 |
| Champs Sports Bowl | Florida State | $\$ 2,250,000$ | $75.53 \%$ | 5.20 |
| Meineke Car Care Bowl | North Carolina | $\$ 1,000,000$ | $99.91 \%$ | 4.51 |
| Music City Bowl | Boston College | $\$ 1,600,000$ | $78.85 \%$ | 2.78 |
| EagleBank Bowl | Wake Forest | $\$ 1,000,000$ | $51.69 \%$ | 2.24 |
| PapaJohns.com Bowl | NC State | $\$ 300,000$ | 53.89 | 1.97 |

## Conference Ranking and Bowl Game Attendance

The Spearman Rank Order Correlation, a non-parametric measure of correlation was conducted to determine if there was a significance in the relationship between the end of season conference ranking and bowl game attendance. As seen in Table 4.8, the correlation coefficient and the level of significance for each examined year are presented. There were no significant findings in the correlation between the end of season conference ranking and bowl game attendance for any of the examined years.

Table 4.6: Correlation between End of Season Conference Ranking and Bowl Game Attendance

| Year | Correlation Coefficient | Level of Significance (p-value) |
| :--- | :--- | :--- |
| $2004-2005$ | -0.486 | 0.329 |
| $2005-2006$ | -0.635 | 0.091 |
| $2006-2007$ | -0.222 | 0.597 |
| $2007-2008$ | -0.133 | 0.753 |
| $2008-2009$ | -0.245 | 0.494 |

*Correlation is significant when p. $<05$

## Conference Ranking and Bowl Game Payout

The Spearman Rank Order Correlation, a non-parametric measure of correlation was conducted to determine if there was a significance in the relationship between the end of season conference ranking and bowl game payout. Based on the results shown in Table 4.7, the correlation coefficient and level of significance are presented for each examined year. There was no significance in the correlation between end of season ranking and bowl game payout in 20042005 or 2005-2006. There was a significance in the correlation between end of season ranking and bowl game payout in 2006-2007 with a p-value of .033 , as well as in 2007-2008 at .025 and 2008-2009 at . 037 .

Table 4.7: Correlation between End of Season Conference Ranking and Bowl Game Payout

| Year | Correlation Coefficient | Level of Significance (p-value) |
| :--- | :--- | :--- |
| $2004-2005$ | -0.754 | 0.084 |
| $2005-2006$ | -0.687 | 0.060 |
| $2006-2007$ | -0.747 | $0.033^{*}$ |
| $2007-2008$ | -0.770 | $0.025^{*}$ |
| $2008-2009$ | -0.663 | $0.037^{*}$ |

*Correlation is significant when $\mathrm{p}<.05$

## Conference Ranking and Bowl Game Television Ratings

The Spearman Rank Order Correlation, a non-parametric measure of correlation was conducted to determine if there was a significance in the relationship between the end of season conference ranking and bowl game television ratings. As seen in Table 4.8, the correlation coefficient and level of significance are listed. There was no significance in the correlation between end of season conference ranking and bowl game television rating in any of the examined seasons, with the exception of the 2005-2006 season, where the p-value was .000 , indicating there was a significance in the correlation that year.

Table 4.8: Correlation between End of Season Conference Ranking and Bowl Game Television Ratings

| Year | Correlation Coefficient | Level of Significance (p-value) |
| :--- | :--- | :--- |
| $2004-2005$ | -0.486 | 0.329 |
| $2005-2006$ | -0.946 | $0.000^{*}$ |
| $2006-2007$ | -0.497 | 0.210 |
| $2007-2008$ | -0.376 | 0.359 |
| $2008-2009$ | -0.397 | 0.257 |

*Correlation is significant when $\mathrm{p}<.05$
The results indicated that there was significance in the correlation between the end of season conference ranking and other factors examined in the years examined. Potential explanations for the results that were found and important concepts to be examined in the future based on the results will be discussed in the next chapter.

## CHAPTER 5

## Discussion

The following chapter will present a discussion of the results that were identified in Chapter 4. This chapter will be broken down based on each season examined and each research question that was asked in Chapter 1. The results dealing with each research question will be examined including potential explanations for the results. The chapter will conclude with possible recommendations for future research and a final overall analysis of the study.

## 2004-2005 Bowl Season

According to the results, there was no significance in the correlation between the end of season conference ranking and attendance as a percentage of the stadium capacity as the p-value was .329. The correlation coefficient was -.486 indicating that there was a negative correlation despite the lack of a significant finding. One potential factor in the lack of significance with the correlation between these two variables is the low number of bowl games that were examined. At the conclusion of the 2004-2005 season, the ACC had only six teams participating in a bowl game, the lowest number of bowl games of any season examined in the study. Of the six bowl games that had ACC participants, all but one had an attendance percentage of 80 percent or higher relative to stadium capacity. The exception to this was the Champs Sports Bowl, whose participants included Georgia Tech and Syracuse University. The distance for Syracuse fans to travel to Orlando, Florida for the game could have impacted the attendance. It is interesting to note that the bowl game with the second highest attendance percentage was the bowl that featured the team with the lowest end of season conference ranking, North Carolina. The 2004-

2005 season was the inaugural year for the Continental Tire Bowl, which was held in Charlotte, North Carolina. Both the fact that this was a new bowl game and that one of the participating teams was from the same state could provide explanation for the attendance.

The results showed that there was no significance in the correlation between the end of season conference ranking and bow game payout, although the p-value of .084 was approaching the .05 significance level. The correlation coefficient of -.754 indicated that there was a negative correlation between the two variables, the strongest negative correlation of any of the examined variables for the 2004-2005 season. Similar to the correlation between the end of season conference ranking and bowl game attendance, one explanation for the lack of significance may be the number of bowl games with an ACC participant. Another important factor worth noting is that while there was the substantial difference between the payout for the Sugar Bowl, \$14 million, and the Continental Tire Bowl, $\$ 750,000$, there is not as a great a financial difference between the bowl with the second highest payout and the bowl with the lowest payout, which could have contributed to the lack of significance in the correlation. The Peach Bowl offered the second highest payout of $\$ 2.2$ million while the Continental Tire Bowl and the MPC Computer Bowl offered the lowest payout of $\$ 750,000$. While this is a $\$ 1.45$ million difference it was not a great enough difference to produce a significant finding in the correlation between the end of season conference ranking and bowl payout.

Based on the results, there was no significance in the correlation between the end of season conference ranking and bowl game television rating as the p-value was .329. The correlation coefficient of -.486 indicated that there was a negative correlation between the two variables. While the Sugar Bowl, which featured the highest ranked team in the ACC, had the highest television rating of the season with a rating of 9.5, the bowl game with the second
highest television rating was the Continental Tire Bowl with a rating of 7.8, which featured the lowest ranked team in the ACC to participate in a bowl game. Another potential factor was the scheduled date and time of each bowl game. Of the six bowl games that featured ACC participants, only two of those games were played after 7:00pm, with the Sugar Bowl being played on January 3, 2005 at 8:00pm and the Peach Bowl being played on December 31 at 7:30pm. The Sugar Bowl was the only college football game scheduled for that date as there were only two bowl games remaining to be played which may have contributed to its rating. Another possible contributor to this rating is the quality of the participating teams, as both Virginia Tech and Auburn had finished first in their respective conferences. There were three bowl games of the six examined that had a rating below 2.0. The Champs Sports Bowl, MPC Computer Bowl and the Continental Tire Bowl were all played on weekdays and did not have a kickoff time of later than 2:00pm in the afternoon. While there was a negative correlation between the two variables, it did not produce a significant finding as it was not always the case that the higher ranked team participated in a bowl game with the higher television rating.

## 2005-2006 Bowl Season

One factor to note with the results of the 2005-2006 season was the increase in the number of teams in the conference as well as the number of teams from the ACC that participated in a bowl game. After the addition of Virginia Tech and University of Miami for the 2004-2005 season, the conference completed its expansion to twelve teams with the addition of Boston College. As a result of expanding to twelve teams, the conference was split into two divisions and the winner of each division competed in a conference championship game to determine which team would represent the conference with the BCS bowl berth. In addition to the increase in the number of teams in the ACC, there was an increase in the number of teams
from the conference that participated in bowl games. The number increased from six the previous season to eight for the 2005-2006 season.

According to the results, there was no significance found in the correlation between the end of season conference ranking and the bowl game attendance as a percentage of the stadium capacity as the p-value was .091 . The correlation coefficient was -.635 indicating that there was a negative correlation between the two variables. With the increase in the number of teams participating in bowl games came an increase in the variability in the attendance percentages. Florida State won the ACC Championship game, earning the BCS bid and the right to represent the ACC in the Orange Bowl. For the second consecutive year, the BCS bowl game featuring an ACC team had an attendance percentage well above 100 percent, with a 107.67 percent attendance relative to stadium capacity. The Orange Bowl is played in Miami, Florida which could have been a factor in the attendance due to its proximity to the Florida State University campus as well as the quality of the participants, both Florida State and Penn State University. The Champs Sports Bowl reported the lowest attendance percentage of those examined with a percentage of 44.96 percent. One interesting fact to note was that the Meineke Car Care Bowl, formerly the Continental Tire Bowl, did not maintain its second highest attendance percentage from the previous year, despite the fact that for the second year in the row, the participating ACC team was from the state of North Carolina. This could have been attributed to the novelty of the bowl's inaugural year having worn off. While there was a considerable difference between the attendance percentage of the highest bowl and lowest bowl, the gap between each of the bowls was not enough to generate a significant finding in the correlation between the end of season conference ranking and bowl game attendance.

Based on the results, there was no significance in the correlation between the end of season conference ranking and the bowl game payout as the p-value was .060 , despite approaching the .05 level of significance. There was a negative correlation between the two variables as the correlation coefficient was -.687. With the addition of two bowl games, it added two additional bowl payouts to be examined for the 2005-2006 season. While the highest bowl payout of $\$ 14$ million by the BCS Orange Bowl and the lowest bowl payout of $\$ 750,000$ by the Meineke Car Care Bowl, MPC Computer Bowl, and the Emerald Bowl, remained the same value as the previous year, the payouts in between these two values increased. It is also interesting to note that all three of the teams that had been brought in as a part of the conference expansion qualified for a bowl game and accounted for $\$ 4.7$ million of the total bowl payout earned by the eight ACC teams that year.

The results indicated that there was significance at the .01 level in the correlation between the end of season conference ranking and television rating as the p-value was .000 and there was a negative correlation between these two variables as the correlation coefficient was -.946. This indicated that in general, as the end of season ranking got higher in number, the television rating for the bowl game participated in got lower. The television rating of the highest rated game was 12.3 and that belonged to the Orange Bowl, which featured Florida State from the ACC and Penn State University from the Big Ten Conference. This game was not only the second to last bowl game of the season, played on Monday, January 3 2006, at 8:00pm but it was also a game that featured two of college football's most storied coaches in Bobby Bowden of Florida State and Joe Paterno of Penn State. In addition to these factors, the bowl game went into triple overtime with Penn State winning 26-23 in what would go down as one of the greatest bowl games of all time (ESPN.com 2006). These are all factors that may have contributed to the
television rating earned by this game. The second highest television rating for the 2005-2006 season came from the Peach Bowl with a rating of 5.22 , followed by the Gator Bowl with a rating of 3.93. The lowest television rating came from the Meineke Car Care Bowl at 1.52. One potential explanation for this may be that many of the fans who had interest in this game were in attendance as the game was in the home state of NC State, making it such that they did not need to watch the game on television. The overall significance in the correlation between these two variables may be attributed to the vast difference between the rating from the Orange Bowl and the ratings of the remaining bowl games.

## 2006-2007 Bowl Season

At the conclusion of the 2006-2007 season, the ACC had eight teams that participated in bowl games. According to the results, there was no significance in the correlation between the end of season conference ranking and bowl game attendance as a percentage of stadium capacity with a p-value of .597. There was a negative correlation between the variables as the correlation coefficient was -.222. This was the lowest correlation coefficient found for this season across all examined variables. There was not a substantial amount of variability in the attendance percentages across all eight examined bowls. For the first time in three years, the BCS bowl game did not have the highest attendance percentage; instead it was the Chick-Fil-A bowl that had the highest attendance percentage of 105.87 percent. The Orange Bowl had the second highest attendance percentage with 103.10 percent. It is important to note that Wake Forest won the ACC Championship game and was the team representing the conference in the Orange Bowl, while Virginia Tech was the ACC representative in the Chick-Fil-A Bowl. When examining the size of the institution as well as the football tradition of the schools, these two factors may have played a role in the fact that the bowl game featuring the larger, public institution with a richer
football tradition like Virginia Tech outdrew the bowl game featuring the smaller, private institution of Wake Forest. It is also important to note that the MPC Computer bowl had an attendance percentage of 89.54 percent, significantly higher than the previous two years. While the ACC representative in this game was Miami and may not have had a large contingent of fans present, their opponent was the University of Nevada, which may have been a factor in the increase in attendance due to proximity. The Emerald Bowl, in its second year with an affiliation with the ACC, featured Florida State and UCLA. In a similar situation as the MPC Computer Bowl, while this would have been a cross-country trip for Florida State supporters, it would have been a much easier trip for UCLA supporters. In general the 2006-2007 bowl games were well attended and numerous bowls saw increases in their attendance percentages from the previously examined two years.

The results indicated that there was a significance in the correlation between the end of season conference ranking and bowl game payout as the p-value was .033 , below the .05 level of significance. The correlation coefficient was -.747 , indicating a negative correlation between the two variables. Bowl game payout is an important benefit to participating teams when evaluating the success of reaching a bowl game. It would be expected that the team with the best record would receive the greatest payout and this would continue in order down the rankings. The significant finding with the correlation between these two variables reflects that this notion held true for bowl games examined in the 2006-2007 bowl season. The Orange Bowl saw an increase of $\$ 3$ million in its payout as it increased to $\$ 17$ million. There were three bowls that provided a bowl game payout of $\$ 750,000$, which was the lowest payout of those examined. It is interesting to note that when examining the bowl game payout, the net payout may be significant lower depending on the travel required by the team. The Emerald Bowl is played in San

Francisco, California and the ACC participating school in this bowl was Florida State. The total distance from Tallahassee, Florida to San Francisco, California is 2,634 miles (Google, 2009), while the bowl payout was $\$ 750,000$. This is a substantial amount of revenue on its own, but it must be offset against the expenses of traveling with the necessary travel party members. Comparatively, Boston College participated in the Meineke Car Care Bowl in Charlotte, North Carolina, which is a total distance of 859 miles from Boston, Massachusetts and received a payout of $\$ 750,000$ (Google, 2009). While both teams earned the same payout, their net revenue would in all likelihood vary. At the conclusion of the 2006-2007 bowl season there was significance in the correlation between these two variables.

According to the results, there was no significance in the correlation between the end of season conference ranking and television ratings as the p-value was .210 . There was a negative correlation between these two variables and while not significant, the correlation coefficient was -.497. There was not the substantial difference in the television rating for the BCS bowl and the other seven examined bowls as there was in the previous year. The Orange Bowl did have the highest rating of 6.98 while the lowest rating of 1.63 came from the MPC Computer Bowl. One possible explanation for the decrease in the Orange Bowl rating may have been the participating teams. Wake Forest and the University of Louisville do not have the football tradition and history that often times comes with BCS bowl game participants and this may have resulted in a lack of interest from the general public and resulted in a decrease in viewership. The disparity in the television ratings among the examined bowl games was less than previously examined years as there was only one bowl with a rating below 2.0. There was no obvious outlier and the ratings were more consistent as there was not a bowl game that had a rating above 7.0. This was
reflected in the lack of a significant finding in the correlation between the end of season conference rankings and bowl game television rating.

2007-2008 Bowl Season
At the conclusion of the 2007-2008 season there were eight teams from the ACC that participated in bowl games. Again the ACC Championship game determined who would represent the ACC in the Orange Bowl. Virginia Tech won the ACC Championship and earned the right to represent the conference in the BCS bowl.

According to the results, there was no significance in the correlation between the end of season conference ranking and bowl game attendance as a percentage of stadium capacity with a p-value of .753 , well above the .05 level of significance. There was a positive correlation between the two variables as the correlation coefficient was .133 . This is the only positive correlation that was found in any of the relationships examined over the five year period. There were two bowl games that had an attendance percentage over 100 percent, with the Chick-Fil-A Bowl at 104.47 percent and the Orange Bowl at 102.6 percent. This was the second year in a row that the Chick-Fil-A Bowl had the highest attendance percentage. It is interesting to note that the Roady's Humanitarian Bowl, Emerald Bowl, Meineke Car Care Bowl and the Music City Bowl all had higher attendance percentages than the Gator Bowl, which hosted a University of Virginia team that finished third in the end of season conference rankings, above the participating ACC teams in the other four bowls. It is also interesting to note that the Music City Bowl came within .20 percent of reaching an attendance percentage of 100 percent. The ACC participant in this bowl was Florida State which may have been a big draw for spectators.

The results indicated that there was significance in the correlation between the end of season conference ranking and bowl game payout with a p-value of .025 , below the .05 level of
significance. There was a strong negative correlation between the two variables as the correlation coefficient was -.770. With the importance of the bowl game payout to the participating teams, it was not surprising that for the second year in a row there was a significant finding with the correlation between these two variables. The Orange Bowl for the second year provided a payout of $\$ 17$ million while both the Gator Bowl and Chick-Fil-A Bowl offered a increased payout from the previous year, with the Gator Bowl providing a $\$ 4.25$ million payout and the Chick-Fil-A Bowl offering a $\$ 5.56$ million payout. While the Gator Bowl doubled its payout from the previous season, it saw a drop in two other variables examined: attendance percentage and the television rating. For the fourth consecutive year, the lowest bowl game payout offered by any bowl was $\$ 750,000$ from the Roady's Humanitarian Bowl, Emerald Bowl and the Meineke Car Care Bowl. This supports the significant finding in the correlation between the two variables as the teams that participated in these four bowls were the teams with the four lowest conference rankings.

According to the results, there was no significance in the correlation between the end of season conference ranking and television ratings as the p-value was .359 . There was a negative correlation between the two variables as the correlation coefficient was -.376. The Orange Bowl reported the highest television rating of 7.4 while the second highest rating came from the Chick-Fil-A Bowl with a rating of 5.09. Behind the Chick-Fil-A Bowl, the Music City Bowl had the third highest rating of 4.02, an increase from the previous year. The two teams participating in this bowl were Florida State and University of Kentucky. One factor that may have influenced this was the large following of Florida State football and a second factor may have been the quality of the game, which was decided by a seven point difference, indicating it could have been a quality game to watch. The Roady's Humanitarian Bowl, formerly the MPC Computer Bowl
saw a decrease as it dropped to a rating of .77, the lowest of any bowl that season. It should be noted that this game was played on December 31, 2007 at 2:00pm and it could have potentially overlapped with four other bowl games, all being televised which may have impacted the low rating it earned.

## 2008-2009 Bowl Season

At the conclusion of the 2008-2009 season, there were ten teams from the ACC that participated in a bowl game. The two additional bowl games were the EagleBank Bowl and the PapaJohns.com Bowl. The ACC Championship game was won by Virginia Tech for the second year in a row and they represented the conference in the Orange Bowl with the number one record from the ACC.

According to the results, there was no significance in the correlation between the end of season conference ranking and bowl game attendance as a percentage of stadium capacity as the p-value was .494. There was a negative correlation between the two variables as the correlation coefficient was -.245. For the first time in the five year examined period, there were three bowl games that had an attendance percentage over 100 percent. The Orange Bowl had the highest attendance percentage at 101.99 percent, followed by the Emerald Bowl at 101.87 percent and then the Chick-Fil-A Bowl with 100.27 percent. This was the first time in the five year period that a bowl game other than the BCS bowl or the Chick-Fil-A Bowl had an attendance percentage greater than 100 percent. It is interesting to note that one potential explanation for this could have been the participating teams in the 2008 Emerald Bowl. The representative from the ACC was Miami while their opponent was the University of California-Berkeley, who would have been playing practically a home game in nearby San Francisco, California, making it highly accessible to their fan base. The game was also played on a weekend following the Christmas
holiday which may have made it more conducive for people to attend. The Meineke Car Care Bowl saw an increase in attendance, back up to 99.91 percent, back up over 90 percent for the first time since the inaugural game in 2004.

The results showed that there was significance in the correlation between the end of season conference ranking and bowl game payout as the p-value was .037 , below the .05 level of significance. There was a negative correlation between the two variables as the correlation coefficient was -.663. The 2008-2009 season in the ACC was one filled with parity as at the conclusion of the regular season, of the ten teams that participated in a bowl game, four teams had a conference record of 5-3 and the other six teams finished with a conference record of 4-4. Despite this parity, there was still a significant finding in the negative correlation between the bowl games that a team went to depending on their end of season conference ranking. It is also interesting to note that while the lowest bowl payout for an ACC contracted bowl was $\$ 750,000$ at the Roady's Humanitarian Bowl, the PapaJohns.com Bowl offered the lowest payout of any bowl that had an ACC team participating at $\$ 300,000$. This was the lowest payout of any bowl in the 2008-2009 line up. The PapaJohns.com Bowl was not contracted with the ACC, but because the ACC had a number of bowl eligible teams that exceeded the number of bowls they had contracts with, NC State was able to participate in the conference's tenth bowl bid. Both the Emerald Bowl and the Meineke Car Care Bowl saw increases in payout as the Emerald Bowl increased its payout to $\$ 850,000$ while the Meineke Car Care Bowl increased its payout to $\$ 1$ million.

According to the results, there was not significance in the correlation between the end of season conference ranking and bowl game television ratings. There was a negative correlation between the two variables as the correlation coefficient was -.397. The bowl game that earned
the highest television rating was the Orange Bowl with a rating of 5.41 , followed by the Champs Sports Bowl which had a rating of 5.20. The participating teams in the Champs Sports Bowl included Florida State from the ACC and the University of Wisconsin. Over the five year period that was examined as a part of the study, Florida State had the second highest average television rating among teams that participated in a bowl game all five years. This would indicate that the increase in the television rating for the Champs Sports Bowl from previous years may have been a result of the participating teams as Florida State consistently drew one of the largest television audiences of any ACC team participating in a bowl game. The bowl game that had the lowest television rating was the PapaJohns.com Bowl at 1.97, which again was not one of the nine contracted with the conference. It is interesting to note that while the Chick-Fil-A Bowl had one of the top three highest attendance percentages, it had sixth highest television rating. One contributing factor to this may have been the quality of the game. The final score was 38 to 3 in favor of Louisiana State University, which did not make for the dramatic, entertaining game that may have attracted greater viewership.

Patterns from the 2004-2005 Season to the 2008-2009 Season
There was not a noticeable pattern formed in the correlations between the end of season conference ranking and attendance percentages across the five year period of the study. While all the correlations between the two variables were negative with the exception of one year, that proved to be the only consistency over the course of the five years.

When examining the correlation between the end of season conference ranking and bowl game payout over the five year period, one pattern that developed was a decrease in the p-value, or an increase in the level of significance with the exception of the 2008-2009 season. The pvalue at the end of the 2004-2005 season was .084 and was .025 by the 2007-2008. This pattern
indicated that over the course of the study the significance level increased which supports the notion that the ACC was successful in placing the correct teams in the correct bowl game.

There was not a noticeable pattern formed by the correlation between the end of season conference ranking and bowl game television ratings. There was a significant finding in only one of the five examined years, as in the 2005-2006 season, the p-value equaled .000 . This was clearly the outlier as the next lowest p-value was .210 in the 2006-2007 season. While the correlation was negative each of the years examined, there was no distinct pattern that was formed.

While the relationship between the end of season conference ranking and bowl game payout was the only one over the course of the study to show any type of consistent pattern in addition to strong negative correlations, this supports the notion that from a financial standpoint, the ACC has been successful in placing the correct team in its deserving bowl game. While the other factors are important to consider, when speaking strictly from a financial standpoint, the conference seems to be accurate in their bowl placements.

## Suggestions for Future Research

One potential suggestion for future research would be to examine the variables over a longer period of time. In doing this it would allow for comparison of the results from both before and after the conference expansion took place. This would present the opportunity to examine the impact of the expansion process as well as the addition of the ACC Championship game on the placement of conference teams in bowl games. While the first year of this study was before the ACC Championship game, it was after the initial expansion and a greater time frame would allow for a more in depth examination of how these relationships have developed over time and across the expansion process.

A second suggestion for future research includes examining additional variables that may affect the financial takeaway for the participating teams. One such variable would include program bowl expenditure, or the amount that an ACC football team spends on all costs related to bowl game participation. A second variable that could be examined in future research includes bowl game location. This could be a variable worth examining as the farther distance a team must travel will equate to greater expenditure on the part of that team as well decreasing the likelihood of that school being able to sell their entire allotment of tickets. The cost of a school's unsold ticket allotment is often times left to be covered by the school, thereby again potentially decreasing the overall financial benefit of participation for a team.

A third suggestion for future research would be to examine non-numeric factors. Often the importance of participating in a bowl game for a coaching staff may not be solely based on the financial implications as they are considering factors such as benefits for recruiting. It would be interesting to survey coaches and athletic administrators in the conference to gain their perspective on the conference's effectiveness in placing teams in the correct bowl game. This would allow for the opportunity to compare objective and subjective data in order to gain a more holistic understanding.

## Conclusion

The purpose of this study was to determine if there was a relationship between the end of season rankings of football teams in the ACC and the bowl selection process over a five year period from the 2004-2005 season through the 2008-2009 season. The study was designed to determine if there was a relationship between the end of season conference rankings and bowl game factors including bowl payout, television ratings and attendance as a percentage of stadium capacity in an effort to determine the overall effectiveness of the current selection process for
bowls contracted with the ACC. The results yielded that while some variables resulted in stronger relationships than others, all of these variables are related to one another. There is the possibility for future research to review in more detail any one of the variables included in this study. In the ACC, where participation in a bowl game can have a meaningful impact on a team, it would appear that there is a relationship between the end of season conference ranking and the examined variables and that when based on bowl game payout, the conference has been successful over the last five years in their bowl selection process.

## REFERENCES

Atlantic Coast Conference. (2008). BCS Selection Process. ACC Football Operations Manual for Participating Institutions-Bowl Information, Section F, 1-34.

Atlantic Coast Conference. (2008a). 2008-2009 ACC Bowl Lineup. 2008 ACC Football Media Guide, Introduction, Section 2, 9-10. Retrieved March 17, 2009, from http://www.theacc.com/sports/m-footbl/08accfbguide.html

Atlantic Coast Conference. (2008b). ACC Year-by-Year, 1953-2007. 2008 ACC Football Media Guide, ACC Record Book, Section 1, 95-122. Retrieved March 17, 2009, from http://www.theacc.com/sports/m-footbl/08accfbguide.html

Atlantic Coast Conference. (2008c). Academic Awards. 2008 ACC Football Media Guide, ACC Record Book, Section 10, 207. Retrieved March 17, 2009, from http://www.theacc.com/sports/m-footbl/08accfbguide.html

Atlantic Coast Conference. (2008d). ACC Players in the Pros. 2008 ACC Football Media Guide, ACC Record Book, Section 9 183-191. Retrieved March 17, 2009, from http://www.theacc.com/sports/m-footbl/08accfbguide.html

Atlantic Coast Conference. (2008e). ACC Bowl Records. 2008 ACC Football Media Guide, ACC Record Book, Section 8, 177-180. Retrieved March 17, 2009, from http://www.theacc.com/sports/m-footbl/08accfbguide.html

Atlantic Coast Conference. (2009). About the ACC. Retrieved March 4, 2009, from http://www.theacc.com/this-is/acc-this-is.html

Atlantic Coast Conference. (2009b). This is the ACC-The Tradition. Retrieved March 4, 2009, from http://www.theacc.com/this-is/tradition.html

Bennett, R. W., \& Fizel, J. L. (1995, April). Telecast deregulation and competitive balance: Regarding NCAA Division I football. American Journal of Economics and Sociology, 54, 183-199.

Bowl Championship Series. (2009). BCS, Alliance, and Coalition Games Year-by-Year. Retreived March 17, 2009 from http://www.bcsfootball.org/bcsfb/timeline

Bowl Championship Series. (2009b). BCS Chronology. Retrieved March 16, 2009, from http://www.bcsfootball.org/bcsfb/history

Bowl Championship Series. (2009c). BCS Standings Methodology. Retrieved March 17, 2009, from http://www.bcsfootball.org/bcsfb/standings

Bowl Championship Series. (2009d). TV Ratings. Retrieved April 2, 2009, from http://www.bcsfootball.org/bcsfb/tvratings

Chick-fil-A Bowl. (2009). History of the Chick-fil-A Bowl: Chick-fil-A "Nuggets". Retrieved April 3, 2009, from http://www.chick-filabowl.com/PressBox/BowlNuggets/tabid/123/Default.aspx

Cohen, R. (2008) BCS, ESPN reach deal to air games from 2011-14. USA Today. Retrieved March 19, 2009, from http://www.usatoday.com/sports/college/football/2008-11-181603663775_x.htm

Conlin, D. W. (1986). Intercollegiate football, winning and finance. Unpublished doctoral dissertation, Brigham Young University.

Dimarco, A.C. (1974). The Big Bowl Football Guide. California: Sports America Publications.
Dunnavant, K. (2004) The Fifty-Year Seduction: How television manipulated college football. New York: St. Martin’s Press

EagleBank Bowl. (2009). About the Eagle Bank Bowl. Retrieved April 3, 2009, from http://www.eaglebankbowl.com/about/index.html

Emerald Bowl. (2009) Emerald Bowl: The Game. Retrieved April 3, 2009, from http://emeraldbowl.cstv.com/the-game/embl-game-facts.html

Florida Citrus Sports. (2009). Champs Sports Bowl: Game Information. Retrieved April 3, 2009, from http://www.fcsports.com/SportSelect.dbml?\&DB_OEM_ID=11300\&SPID=6636

Football Bowl Association. (2009). Overview. Retrieved Aprili 13, 2009, from http://www.footballbowlassociation.com/overview.html

Frechette, G., Roth, A., \& Unver, M. (2004, September). Unraveling Yield Inefficient Matchings: Evidence from Post-Season College Football Bowls. Rand Journal of Economics. 38(4): 967-982.

Fulks, D. L. (2005). 2002-03 NCAA Revenues and Expenses of Division I and II intercollegiate athletics programs report. Indianapolis, IN: The National Collegiate Athletic Association.

Fulks, D.L. (2008). 2004-2006 NCAA Revenues and Expenses of Division I Intercollegiate Athletics Programs Report. Indianapolis, IN: The National Collegiate Athletic Association.

Gator Bowl Association. (2009). History of the Konica Minolta Gator Bowl. Retrieved April 2, 2009, from http://www.gatorbowl.com/media_history.html

Gaylord Hotels Music City Bowl. (2009). Gaylord Hotels Music City Bowl History and Overview. Retrieved April 2, 2009, from http://www.musiccitybowl.com/about_us/history.php

Google. (2009). Google Maps. Retrieved July 30, 2009, from http://maps.google.com/maps?hl=en\&tab=wl

Lawrence, P. (1987). Unsportsmanlike Conduct: The NCAA and business of college football. New York: Proeger Publishers.

Mandello, M. (2008). The College Football Postseason Mess: Economic Perspectives. Journal for the Study of Sports and Athletes in Education. Left Coast Press, Inc. Vol. 2 (2).

Meineke Car Care Bowl. (2009). History of the Bowl. Retrieved April 2, 2009, from http://www.meinekecarcarebowl.com/game/history.html

Mejia, D. J., Kulander, D., \& Ljungman, H. (2005, January). The frontlines of university athletics, where winning means everything. Unpublished bachelor's thesis, Lund University.

Murphy, R. G., \& Trandel, G. A. (1994, September). The relation between a university’s football record and the size of its applicant pool. Economics of Education Review, 13, 265-270

NCAA v. Board of Regents of the University of Oklahoma and University of Georgia Athletic Assocation, 468 U.S. 85(1984) No. 83-271.

NCAA On-line. (2006, April). Financial Review of 2005-2006 Postseason Bowls, Summary of Bowl Revenues and Expenses by Conference. Indianapolis, IN: The National Collegiate Athletic Assocation. Retrieved October 3, 2006, from http://www1.ncaa.org/membership/postseason_football/200506/summary_bowl_rev_exp.pdf

Oliver, D. (2008). Win or lose, no one will go home empty-handed. Sporting News. Retrieved April 2, 2009 from http://www.trackyoursports.com/blog/wp-content/uploads/2008/12/bowl-gifts.pdf

Orange Bowl Championship. (2009). History of the Orange Bowl. Retrieved April 2, 2009, from http://www.orangebowl.org/ViewArticle.dbml?DB_OEM_ID=11800\&KEY=\&ATCLID $=695751$

Orszag, J. M., \& Orszag, P. R. (2005, April). The physical capital stock used in collegiate athletics. Indianapolis, IN: The National Collegiate Athletic Association.

O’Toole, T. (2006). \$17M BCS payout sounds great, but.... USA Today. Retrieved March 17, 2009, from http://www.usatoday.com/sports/college/football/2006-12-06-bowlpayouts_x.htm

Pacey, P. L. (1985). The courts and college football: New playing rules off the field? American Journal of Economics and Sociology, 1(1), 117-121.

Reid, S. (2007). SPECIAL REPORT: Price of Success. The Orange County Register. Retrieved on April 15, 2009, from http://www.ocregister.com/articles/bowl-schools-last-1949560-bcs-games

Roady's Humanitarian Bowl. (2009). Roady's Humanitarian Bowl History and Quick Facts. Retrieved April 3, 2009, from http://www.humanitarianbowl.org/about_facts.asp

Sheskin, D. (2004). Handbook of Parametric and Nonparametric Statistical Procedures. New York: Chapman and Hall.

Staley, J. (2007). New Mexico Bowl: Team expenses chip away payout profits. Albuquerque Tribune. Retrieved April 27, 2009, from http://www.abqtrib.com/news/2007/dec/20/new-mexico-bowl-team-expenses-chip-away-payout-pro/

Smith, R. A. (1981). Harvard and Columbia and a reconsideration of the 1905-06 football crisis. Journal of Sport History, 8(3), 1-19.

