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Analytical Research Topics in Sport Management

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Analytical Research Topics in Sport Management

Analytical Research Topics in in Sport Management

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education in Recreation and Sport Management

By

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ABSTRACT

The field of sport management has grown tremendously as an academic discipline. Researchers have continuously discussed the scope and direction of research and the importance of the diversity of research design. There have been a significant number of studies examining the scope and direction of research over the past few decades such as: the lack of diversity in methodology; the lack of diversity in research focus; the lack of importance of power analysis; and the lack of diversity in topic areas. Embracing a variety of research designs is an absolutely necessary condition for the growth and credibility of sport management as an academic discipline. Therefore, the overarching goal of this dissertation was to provide sport management researchers with the diversity of research designs useful for helping them deal with different types of data. The purpose of three analytical studies outlined in this dissertation was as follows: (1) to examine the influence athletic performance has on the elements of source credibility and the causal relationships among consumers' brand attitude, attitude toward the advertisement, and purchase intentions; (2) to examine whether the hypothesized model, indicating the relationship between the dimensions of service quality and the assessment of service quality, fits the data adequately; (3) to examine whether the variation in athletic giving crowds out academic giving. Researchers in the field of sport management should have a comprehensive understanding of the various research methods to enhance scholarship in sport management as they rely heavily on empirical data based research. It is clear that experimental and longitudinal research is a formidable methodological challenge and which is why the current study addresses how scholars can integrate experimental and longitudinal research to examine relationships that have been elusive in past research efforts.

This dissertation is approved for recommendation
to the Graduate Council.

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DEDICATION

I would like to dedicate this dissertation to my mother, Soon-Raye, my mother-in-law, Soon-Ja, and my beloved wife, Sung-Lan.

TABLE OF CONTENTS

I.	CHAPETER ONE	1
	Introduction	1
	Study 1	5
	Study 2	7
	Study 3	9
II.	CHAPTER TWO	13
	Impact of Perceived On-Field Performance on Sport Celebrity Source Credibility	13
	Source Credibility	16
	Theoretical Understanding of Source Credibility	19
	Method	21
	Research Design	21
	Participants	25
	Data Collection Procedure	25
	Measures	26
	Data Analysis	27
	Results	28
	Manipulation Checks	28
	Differences in Source Credibility	28
	Tests of the Hypothesized Relationships	29
	Discussion and Conclusions	31
	Limitation and Future Studies	36
III.	CHAPTER THREE	40
	Effects of Service Dimensions on Service Assessment in Consumer Response: A Study of College Football Season Ticket Holders	40
	Research in Season Ticket Holders	42
	Dimensions and Assessment of Service Quality	46
	Method	52
	Sample	52
	Data Collection Procedure	52
	Measures	52
	Data Analysis	55
	Results	55
	Psychometric Evaluation of the Measures	55
	Test of the Measurement Model	57
	Tests of the SEM	59
	Discussion and Conclusions	62
	Implication for Marketing Practice	65
	Future Studies	68

IV.	CHAPTER FOUR	70
	Crowding Out Effects of Athletic Giving on Academic Giving	70
	Financial Benefits of the Successful Intercollegiate Athletics	72
	Method	75
	Data	75
	Empirical Model	77
	Data Analysis	78
	Results	79
	Descriptive Statistics	79
	Effects of Athletic Performance on Academic Giving	86
	Crowding Out Effects of Athletic Giving on Academic Giving	88
	Discussion and Conclusions	92
	Limitation and Future Studies	96
V.	CHAPTER FIVE	99
	Conclusions	99
	REFERENCES	107
	APPENDICES	121
	Appendix A	121
	Appendix B	123
	Appendix C	134
	Appendix D	139
	Appendix E	141
	Appendix F	145
	BIOGRAPHICAL SKETCH	147

LIST OF TABLES

3.1.	Descriptive Statistics of Each Item	56
3.2.	Summary of Fit Indices for the CFA and SEM Models	59
3.3.	Decomposition of Effects with Standardized Values	60
4.1.	Descriptive Statistic	80
4.2.	Effects of Athletic Performance on Athletic Giving	87
4.3.	Effects of Academic Variables on Academic Giving	89
4.4.	Effects of Academic and Athletic Variables on Academic Giving	90

LIST OF FIGURES

1.1.	The major skeletons of the three analytical studies	12
2.1.	The SEM model labeled with the standardized effects	31
3.1.	The final CFA model	58
3.2.	The full SEM model labeled with the standardized effects	61

CHAPTER ONE

The chapter begins with the importance of diversity of research designs in the field of sport management and provides the justification for implementing the three different research papers outlined in this dissertation. In addition, a brief description of each study with related research questions or hypotheses is likewise addressed.

INTRODUCTION

The field of sport management as an academic discipline has grown tremendously since the creation of the program at Ohio University in 1966 (Brassie, 1989; Parkhouse & Pitts, 2005). A significant amount of growth in the amount of universities offering sport management programs occurred from 1978 -1988 (Brassie, 1989), as the number of undergraduate sport management programs went from two in 1978 to 75 in 1988 (Parks, 1991). In 1988, a total of 109 institutions offered a sport management program at either the undergraduate level, graduate level, or both (Brassie, 1989). The number of institutions offering the sport management program continued to grow, as Weese (2002) indicated that 178 institutions offered the sport management major at either the undergraduate level, graduate level, or both. Recently, the official Web site of the North American Society for Sport Management (NASSM) identified that 273 universities in the United States offer a sport management program on either the undergraduate level, graduate level, or both (NASSM, 2012).

In addition to the growth of sport management, there have been a significant number of studies examining the scope and direction of research in the field of sport management over the

past few decades. These studies usually addressed the lack of diversity in methodology (e.g., Barber, Parkhouse, & Tedrick, 2001; Olafson, 1990); the lack of diversity in research focus (e.g. Paton. 1987); the lack of importance of power analysis (e.g., Parks, Shewokis, & Costa, 1999); and the lack of diversity in topic areas (e.g. Dittmore, Mahony, Andrew, & Phelps, 2007).

Paton (1987) discussed the nature of administrative and management research in sport and physical education reviewing selected textbooks, master's theses, and doctoral dissertations. He identified the need for more theoretical constructs in sport management research and suggested two major challenges for sport management scholars. The first challenge was related to the type of research indicating that researchers should conduct a study addressing the real concerns and suggesting directions for practitioners (e.g., administrators and managers). In addition, the second challenge was about the focus of the research in the field of sport management. He emphasized that researchers should pay more attention to the diversity of sport organizations such as professional, amateur, and private sport organizations. Studies to that point were heavily focused on education and college sports.

Olafson (1990) also suggested the theoretical frameworks, scientific hypotheses, and methodological delicacy were important elements to increase scientific rigor in sport management research. He found that there was a significant gap between sport management research and organizational research (e.g., organizational behavior and theory studies) in the business literature regarding research methods and analyses. Findings revealed that the quality or level of sport management research was not equivalent to organizational research. For example, organizational studies utilized diverse research settings such as "field, survey, archival, and laboratory" (p. 116) while sport management research primarily employed survey settings.

Based upon the findings, he suggested that scholars in the field of sport management should consider various and advanced research designs incorporating with rigorous statistical analysis in order to improve the quality for sport management research. Thus, it is a necessary condition for sport management scholars to understand advances in design, methodology, and analysis as “the heavy reliance on the use of the survey questionnaire in SM research is lamentable” (p.116).

Parks, Shewokis, and Costa (1999) suggested that sport management researchers needed to improve the quality of research by employing statistical power analysis, based on Olafson’s recommendation specifying the selection of more appropriate statistical treatments. They indicated that the application of power analysis could expand “the body of sport management knowledge in a systematic, coherent fashion” (p.139) because the effect size derived from power analysis facilitated the practical importance of significant findings. They also advised that scholars in the field of sport management should be open to methodological techniques that refine the precision of our knowledge in order to increase the quality of sport management research.

Barber, Parkhouse, and Tedrick (2001) scrutinized the methodology of research published in the *Journal of Sport Management*, the most renowned publication outlet for empirical research in the field of sport management, since there had been a lack of self-examination of the research published in this area. Findings indicated that two-thirds of all published studies in the *Journal of Sport Management* were categorized into the four content areas (e.g., personal management, organizational structure, academic curriculum, and social issues). They also concluded that a rigorous methodical approach to research is indispensable for the growth and improvement of sport management as an emerging field in the academic community.

Barber, et al (2001)'s contention was also consistent with the perspective derived from Costa (2005)' study. She interviewed with a panel of 17 expert sport management researchers to discuss growth and direction of sport management research. Panelists agreed on the importance of the quality of research design and analysis although there was a lack of consensus among the panelists as to their criteria for defining quality research. Thus, researchers in the field of sport management should make every effort to build sophisticated and rigorous research.

Quarterman et al (2006) reviewed the frequency of ways of measuring data for the studies published in the Journal of Sport Management during the first 18 years. They classified statistical data analyses into three categories according to level of complexity (e.g., basic, intermediate, and advanced statistics). Findings revealed that a total of 408 statistical techniques were used to examine the purpose or main effects of the studies published in the Journal of Sport Management while basic statistical techniques (67.7%) were the most frequent statistical analysis followed by advanced (18.6%) and intermediate (15.7%) statistical analysis. They suggested that researchers in the field of sport management should be familiar with a broad range of statistical analyses and research designs (e.g., excremental and non-experimental design).

Dittmore et al. (2007) conducted a study to investigate the diversity of doctoral dissertation subject areas in sport management. They concluded that sport management dissertation subject areas tended to place a disproportionate emphasis on a few areas while sport marketing was the leading content area. The findings of this study clearly demonstrated that "the growth in sport management as a discipline may only be increasing the literature in a few of the areas, while others are not growing" (p.27). In conjunction with these findings, they recommended that an examination of research samples and methodology of the dissertations is another critical approach to understand the diversity of sport management research.

As shown in the previous literature, researchers in the field of sport management have continuously discussed the scope and direction of research and the importance of the diversity of research design and analysis. Mahony (2008) in his Zeigler lecture noted that an issue sport management researchers continue to face is “how to best build a distinct body of knowledge in sport management” (p.4). Embracing a variety of research designs is an absolutely necessary condition for the growth and credibility of sport management as an academic discipline. Sport management academics should have a comprehensive understanding of the various research methods to enhance scholarship in sport management (Costa, 2005; Olafson, 1990; Parks, 1992; Parkhouse, 2005; Pitts, 2001).

Based on the recommendations and suggestions derived from the previous literature, this dissertation was intended to implement three different research designs considering characteristics of data, an important aspect of research. As sport management studies rely heavily on empirical data based research, cross-sectional survey designs have been mostly employed in the field of sport management. There has been relatively little attention given to experimental designs and longitudinal designs. Therefore, the overarching goal of this dissertation was to provide sport management researchers with the diversity of research designs useful for helping them deal with different types of data. In particular, the three analytical studies outlined in this dissertation were as follows:

(1) Study 1

The study concerned impact of perceived on-field performance on sport celebrity source credibility. The purpose of this study was two-fold: (1) to examine the influence athletic performance has on the elements of source credibility and (2) to investigate its impact on the

causal relationships among consumers' brand attitude, attitude toward the advertisement, and purchase intentions. An experimental design was employed to examine the influence athletic performance has on the elements of source credibility and to investigate its impact on advertising and endorsed brands. This design involved two different fictional scenarios to manipulate an athletic endorser's on-field performance.

It is necessary to recognize what impact sport celebrity endorsers have in advertising and on endorsed brands based on their current performance given that the issue of whether or not the sport celebrity's on-field success affects individual dimensions of source credibility is scarcely addressed in athlete endorsement literature. The current study seeks to add to existing research by examining the influence athletic performance has on source credibility along with its impact on consumers' brand attitude, attitude toward the advertisement, and purchase intentions. The following research questions (RQs) and hypotheses (RHs) were therefore scrutinized.

- RQ₁: Does athletic performance cause a significant difference in each element of source credibility?
- RQ₂: Does athletic performance have a significant influence on source credibility?
- RQ₃: What are the causal relationships among consumers' brand attitude, attitude toward the advertisement, and purchase intentions associated with source credibility?
 - RH₁: Source credibility will have an effect on brand attitude.
 - RH₂: Brand attitude will have an effect on attitude toward the advertisement.
 - RH₃: Brand attitude and attitude toward the advertisement will have effects on behavioral intentions.

As the study has been conducted with an exploratory nature, the study could provide a better understanding of the impact that an athletic endorser's performance has on his or her

overall source credibility. This study could serve as groundwork for sport marketers to make strategic decisions as to how to leverage their relationships with sport celebrities.

(2) **Study 2**

The study dealt with effects of service dimensions on service assessment in consumer response using college football season ticket holders. The purpose of this study was two-fold: (1) to examine whether the hypothesized model fits the data adequately and (2) to investigate the relationship between the dimensions of service quality and the assessment of service quality in consumer response. A cross-sectional survey design was conducted to investigate the causal relationship between the dimensions of service quality and the assessment of service quality. In particular, a two-stage modeling strategy including an evaluation of both the measurement model and the structural equation model (SEM) was utilized to examine the hypothesized model.

Season-ticket holders are a major income resource for college sports, associating with about one-third or more of the total revenue (Fulks, 2010). However, there has been relatively little research examining a theoretical model that explains season ticket holders' behaviors formed by the relationships among service attributes, perceived service quality, service quality, and behavioral intentions in the context of college sports. Two of the goals of intercollegiate athletics are to increase fan attendance at an event and to increase fan enjoyment once at the event. Accordingly, it is a necessary condition to fully reflect the mediated effects in explaining the relationship between the dimensions of service quality and the assessment of service quality. The following research hypotheses (RHs) were employed to examine the decomposition of effects derived from the Structure Equation Model.

- RH₁: Functional quality has a direct positive effect on perceived service quality.

- RH₂: Environmental quality has a direct positive effect on perceived service quality.
- RH₃: Technical quality has a direct positive effect on fan satisfaction.
- RH₄: Perceived service quality has a direct positive effect on fan satisfaction.
- RH₅: Functional quality has an indirect positive effect on satisfaction mediated by perceived service quality.
- RH₆: Environmental quality has an indirect positive effect on satisfaction mediated by perceived service quality.
- RH₇: Fan satisfaction has a direct positive effect on behavioral intentions.
- RH₈: Technical quality has an indirect positive effect on behavioral intentions mediated by fan satisfaction.
- RH₉: Perceived service quality has an indirect positive effect on behavioral intentions mediated by fan satisfaction.

The delivery of quality service is continuously recognized as an important factor for intercollegiate athletics to position themselves more successfully in the competitive field. The current study is intended to develop a comprehensive set of measures of the service aspects and its relationship with the assessment of service quality. The current study could serve as a cornerstone to minimize the discrepancies between season-ticket holders' desires to attend college football and their perceptions regarding the service quality delivered by college football. These efforts will provide the quality of service as well as lead to additional ticket sales and repeat consumers in college sports.

(3) Study 3

The study addressed crowding out effects of athletic giving on academic giving. The purpose of this study was two-fold: to examine how the current dollars of voluntary support restricted to athletics (e.g., athletic giving) are associated with success in intercollegiate athletic programs; and to explore whether athletic giving crowds out the current dollars of voluntary support restricted to academic purposes (e.g., academic giving). A longitudinal design with panel data was employed to explore whether the success of intercollegiate athletics creates crowding out effects on the relationship between academic and athletic giving. This dataset were from 155 universities that have competed in Division I, II, and III and have fielded both football and basketball teams over a 10 year period from 2002 to 2011.

There still exists an ongoing controversy in higher education regarding financial benefits of intercollegiate athletics. Previous research focused primarily on the role of successful athletic programs in either alumni giving or total giving, rather than examining the relationship between academic and athletic giving. Although several studies suspected the indirect relationship between academic and athletic giving (Shulman & Bowen, 2001; Stinson & Howard, 2008), relatively scant research clearly provided empirical evidence and properly considered it in their econometric models. There is a need for research taking the direct association between athletic success and athletic giving into account when explaining the relationship between athletic giving and academic giving.

In conjunction with the aforementioned debate, a number of researchers and administrators in higher education have suspected crowding out effects of athletic giving on academic giving, as many donors directly restrict their giving to certain areas. Crowding out effects are considered to be any decrease in academic contributions that occurs due to an increase

in athletic contributions. In other words, if athletic giving is accompanied by the success of athletic programs, giving to athletics would be increased, which would lead to a decrease in academic giving. Therefore, it would be worthwhile to explore how athletic giving affects academic giving. Based on the foregoing discussion, the following research questions (RQ) were developed.

- RQ₁: Are the current dollars of voluntary support restricted to athletics influenced by the one-year lag in football winning, basketball winning, and athletic giving?
- RQ₂: Are intercollegiate athletic success and athletic giving associated with a significant decrease in the current dollars of voluntary support restricted to academic purposes?

The success of intercollegiate athletics is a successful communication tool to increase good publicity and the university reputation. This phenomenon could produce favorable alumni/non-alumni contributions for institutions in higher education. Findings from the current study could assist administrators in both academics and athletics to build an optimal sharing structure of their financial resources. As private giving is becoming one of the most critical financial resources in higher education, it is important for college and university administrators to better scrutinize empirical data regarding the financial role of successful intercollegiate athletic programs.

A greater understanding of various research designs can function as a blueprint for sport management scholars to conduct their research projects that will be beneficial to the growth of sport management academia. While there will always be a need for new and innovative research designs, the use of the survey design has been known as the most popular method in the field of sport management over the past few decades. Researchers must be familiar with other data gathering methods as the wide range of data collection procedures becomes more available in

sport management (Olafson, 1990). The use of the appropriate research method should always be a significant issue but it is also challenging for sport management researchers to embrace diverse methods. Therefore, sport researchers should make continuous efforts to keep up with the advances and expectations in research design, methodology, and analysis (Olafson, 1990). Figure 1 demonstrated the major skeletons of the three analytical studies outlined in this dissertation by mapping an overarching theme, a primary investigation, a selected sport event, sample, research design, and data analysis.

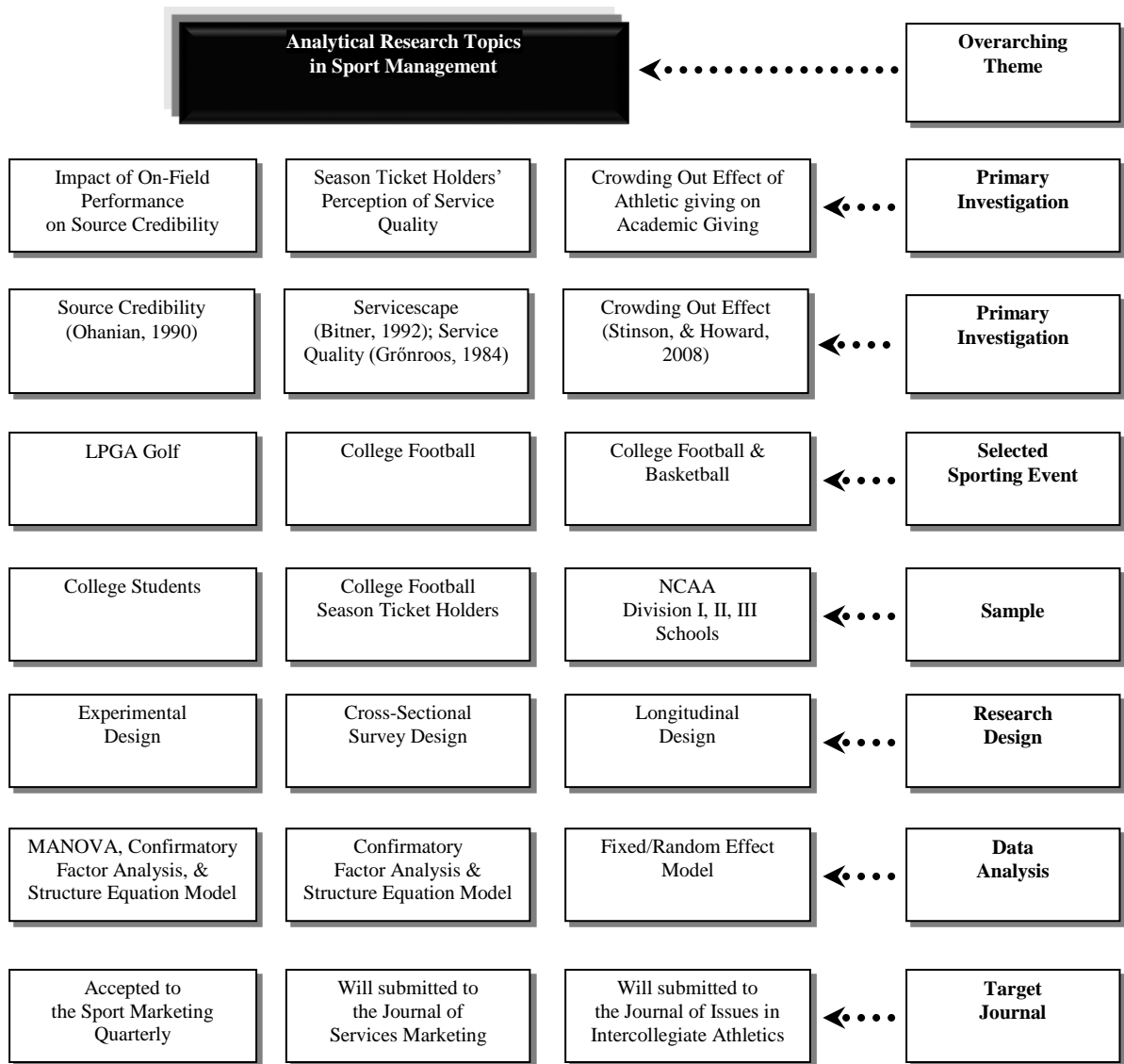


Figure 1.1. The major skeletons of the three analytical studies.

CHAPTER TWO

This chapter concerns impact of perceived on-field performance on sport celebrity source credibility. An experimental design is employed to examine the influence athletic performance has on the elements of source credibility and to investigate its impact on advertising and endorsed brands. Therefore, the current study contributes to the emerging body of research by understanding the relationship between source credibility and on-the-field performance. This study has been recently published in *Sport Marketing Quarterly*.

Koo, G. Y., Ruihley, R., & Dittmore, S. (2012). Impact of perceived on-field performance on sport celebrity source credibility. *Sports Marketing Quarterly*, 21(3), 147-158.

IMPACT OF PERCEIVED ON-FIELD PERFORMAMCE ON SPORT CELEBRITY SOURCE CREDIBILITY

In the past decade, sport celebrities have been collectively earning millions of dollars, annually, from their endorsement contracts. In 2010, U.S companies paid nearly \$17.2 billion to leagues, teams, athletes, coaches, and sports personalities to endorse their goods and services, while worldwide spending on sponsorships continued to grow 5.2 percent to \$46.3 billion (IEG, 2011). According to the company's 2010 annual report, Nike was projected to spend about \$712 million dollars for endorsements using celebrity athletes. This figure calculated base endorsement compensation and minimum royalty fees paid to athletes and teams excluding the cost of the products supplied to the endorsers (Nike, Inc., 2010). When athletes sign heavily financed endorsement deals, they receive compensation for endorsing a certain product or

organization. The assumption is the company will be able to reap major rewards from this financial commitment to an athlete via increased sales and use of athlete's image.

The underlying principle of paying millions of dollars to celebrity athlete endorsers is that the source of the message will add credibility to an advertisement (Yoon, Kim, & Kim, 1998). The advertisers then consider source credibility as a significant basis for selecting a celebrity spokesperson. Ohanian (1990) provides a model of source credibility utilizing dimensions of perceived attractiveness, trustworthiness, and expertise as the primary characteristics in defining an endorser's source credibility. The more credible and attractive a spokesperson is, the more persuasive he or she will be as an endorser in order to generate favorable attitudes toward an endorsed brand or product (Miciak & Shanklin, 1994). Thus, a well-constructed endorsement can do much to enhance the attitude toward the brand and the purchase intentions; conversely, a poorly planned endorsement can have no effect or even an adverse effect.

Research indicates that as negative information is circulating about an athlete, a negative impact can be directed toward the endorsed brand or organization. With "a strong associative link between the celebrity and the brand, negative information about the celebrity will lower brand evaluations" (Till & Shimp, 1998, p. 72). In particular, off-the-field issues, outside of the physical realm of sport, have been considered as the source of negative information about an athlete (e.g., a scandal, an issue with the law, a crime, a fight, or some other negative situation outside of their athletic career). The negative behavior of sport celebrities receives more attention, is better encoded, and is more simply evoked than positive information (Money, Shimp, Sakano, 2006). This phenomenon tends to result in a negative perception about an endorsed brand or product. With the recent cases of Tiger Woods and Michael Phelps, there is evidence supporting

this circumstance. For instance, Gatorade immediately dropped its endorsement of Tiger Woods when his sex scandal became known to the general public while a sponsor, Kellogg, using athletes' wholesome image to sell cereal products severed its ties from Michael Phelps because of his indictment on illegal drug use (Macur, 2009).

Many athletes sign tremendously financed endorsement deals based on their performance ability and potential, even though they have not proven their ability to compete at the professional level. A teenage golf star, Michelle Wie was signing major endorsement contracts (e.g., Sony, Nike) without having played her first professional match. At the age of 17, Wie was a target for sports marketers because of her blossoming talent, personality, and desire to compete with male golfers (Story, 2005). Marketers felt that Wie could do things for women's golf comparable to what Tiger Woods has done for men's golf. However, for sport marketers, as in any endorsement situation, this could be a financial risk because off-the-field issues aside, there might be some possibility of reducing the ability of the athlete caused by an unexpected injury or simply poor performance during game play. Although previous research has examined how off-the-field issues related to the celebrity athlete (e.g., scandal) affect the endorsing brand, the majority of studies have not scrutinized the impact of on-field issues (e.g., performance) on an athletic endorser's source credibility and the potential impact on the endorsed brand (i.e., Louie, Kulik, & Jacobson, 2001; Money, Shimp, Sakano, 2006; Till, & Shimp, 1998).

Therefore, the purpose of this study is two-fold: (1) to examine the influence athletic performance has on the elements of source credibility and (2) to investigate its impact on the causal relationships among consumers' brand attitude, attitude toward the advertisement, and purchase intentions. As the study has been conducted with an exploratory nature, the study could provide a better understanding of the impact that an athletic endorser's performance has on his or

her overall source credibility. Thus, this study could serve as groundwork for sport marketers to make strategic decisions as to how to leverage their relationships with sport celebrities. It is necessary to recognize what impact sport celebrity endorsers have in advertising and on endorsed brands based on their current performance given that the issue of whether or not the sport celebrity's on-field success affects individual dimensions of source credibility.

Source Credibility

According to Ohanian (1990), source credibility is “a term commonly used to imply a communicator's positive characteristics that affect the receiver's acceptance of a message” (p.41). Ohanian (1990 & 1991) identified and defined three dimensions of a credible source while the landmark study by Hovland, Janis, and Kelley (1953) employed two of the three dimensions in their initial work. Expertise was the first dimension and it was defined as “the extent to which a communicator is perceived to be a source of valid assertions” (Hovland, Janis, & Kelley, 1953, p.21). Essentially it reflects the amount of knowledge the source (e.g., the endorser) has about the particular topic/product he/she is endorsing. In the field of sports, expertise is often determined by the athletic performance of the source. For example, when a professional golfer endorses a titanium driver, through his detailed description of the features and the benefits of the driver, consumers may feel that he is an expert not only because he knows about this driver, but also because he wins a major tournament using this endorsed titanium driver. Accordingly, athletic performance will drastically alter a consumer's view of his/her expertise. The perception of an athlete as an expert may significantly increase when the athlete wins consistently at his/her sport.

The second dimension of source credibility is trustworthiness. Trustworthiness “refers to the consumer’s confidence in the source for providing information in an objective and honest manner” (Ohanian, 1991, p. 47). When an endorser is perceived to be highly trustworthy, a message delivered by him/her is more effective in changing attitude than those who have low source trustworthiness (Ohanian, 1990; Stevens, Lathrop, & Bradish, 2003). McGinnies and Ward (1980) indicated that source trustworthiness was correlated with source expertise. They found that an endorser who had both expertise and trustworthiness was most influential on the level of attitude change. A large number of sport fans regard Tiger Woods as being a talented golfer and an expert in the sport of golf; however because of his indiscretions with regards to his marriage, they may not trust him. Tiger Woods' trustworthiness could have been sustained to a higher degree, had he continued to experience success in the PGA. Trustworthiness is an important construct in persuasion and attitude change (Ohanian, 1990). Thus, with an elevated importance on trustworthiness, a need exists to examine whether perceived athletic performance has an impact on an endorser’s source credibility.

The last dimension of source credibility is attractiveness. Physical attractiveness is the perceived familiarity, likability, and similarity of the source to the receiver (Yoon, Kim, & Kim, 1998). Joseph (1982) indicated the attractiveness of an endorser resulted in a positive image and a positive evaluation of products with which they were associated. This phenomenon was consistent with the study conducted by Ohanian (1991) indicating that “physically attractive communicators are more successful in changing beliefs than are unattractive communicators” (p.47). The current study has employed attractiveness as an important aspect to explain source credibility and has considered the relationships of three components (e.g., expertise,

trustworthiness, and attractiveness) defining the latent construct, source credibility (Ferle & Choi, 2005).

For the last few decades, while certain dimensions of source credibility were widely agreed upon, a considerable amount of source credibility research found that a highly credible source effectively influences attitude changes and purchase intentions. For instance, Sternthal, Phillips, and Dholakia (1978) indicated that consumer attitudes and behavioral intentions were more influenced by a highly credible person than a less credible person. Atkin and Block (1983) also specified that celebrities were more effective in forming positive responses derived from consumers than non-celebrities. Findings were consistent with the study conducted by Ohanian (1991) indicating that a highly credible person was likely to make more positive attitude changes toward the endorsed product than a person who was considered as a less credible source.

Priester and Petty (2003) also indicated that information delivered by trustworthy endorsers was likely to be taken at face value which, in turn, could create more favorable attitudes and a higher probability of the consumer purchasing the endorsed product and service. Lafferty and Goldsmith (1999) presented that both corporate credibility and endorser credibility had a strong impact on attitude toward the advertisement, the brand attitude, and purchase intentions while Lafferty, Goldsmith, and Newell (2002)'s dual credibility model added the weight of evidence that credible endorsers led to positive attitude toward the advertisement, the brand attitude, and purchase intentions. Therefore, the widely dispersed recognition and popularity of an athletic endorser is expected to have a greater impact on attitudes toward services (Priester & Petty, 2003), attitudes toward the advertisement (Lafferty, Goldsmith, & Newell, 2002), the brand (Lafferty & Goldsmith, 1999), and purchase intentions (Lafferty & Goldsmith, 1999; Ohanian, 1991).

Theoretical Understanding of Source Credibility

The primary motivation for the development of cognitive structure theories was to look at the way people think. Wright's (1973) cognitive structure model (CSM) derived from Lavidge and Steiner's (1961) original hierarchy of effects model has been used comprehensively in celebrity endorsement and spokesperson advertising research. This model aims to elucidate the way people process information. A concept that is closely related to the CSM is the fundamental role of the belief (cognitive) component (Olson, Toy, & Dover, 1982). The belief component is also known to produce a series of "primary thoughts" often mediating a message of acceptance as well as consecutively affecting consumer attitude and behavioral intentions (Fishbein & Ajzen, 1975; Wright, 1973).

Wright (1973) introduced four different types of primary thoughts containing counterarguments, support arguments, source derogations, and curiosity statements. For instance, the source derogating response may be used in circumstances where an athletic endorser is easily viewed as having poor or unstable performance. In this context, the athlete endorser may spontaneously derogate the sponsoring brand, product, or advertising in general. In addition, Wright (1973) designated that the impact of the source derogation process on message acceptance in advertising may be as devastating as those of counter-arguing effects. Accordingly, understanding the primary thoughts (i.e., source derogations, curiosity statements, etc.) is as significant as measuring the relationships among the cognitive structure components (i.e., beliefs, attitudes, and purchase intentions) if one is to fully evaluate and understand the consumer's information process (Smith & Swinyard, 1988).

With regard to the CSM, Fishbein and Ajzen (1975) and Wright (1973) argued that a person evaluates incoming information with his or her existing knowledge called schema. Also, a

schema is defined as “an active organization of past experiences, which must always be supposed to be operating in any well-adapted organic response” (Fiske, 1982, p.60). Since the primary motivation for the development of the CSM was to offer an alternative explanation for human information processing, the present study employed the CSM and its related concepts to explain how people process an athlete endorser’s on-field performance and, in turn, to illustrate how their belief components might lead to favorable attitudes toward the endorsing brand.

This systematic information process is also consistent with the theoretical position derived from Fishbein and Ajzen (1975, p. 222) indicating that “a person’s attitude is a function of his salient beliefs at a given point in time”. For instance, an athlete endorser’s on-field performance information can influence beliefs, opinions, attitudes, and/or behavior through an internalized process that occurs when people perceive a source influence in terms of their personal attitude and value structures (Kelman, 1961). In other words, the CSM posits a hierarchy of consumer responses of: belief – attitude – intentions – behavior.

In the field of sports, athletes acquire most of their credibility through their on-field performances taking place in real time. Athletes are regularly in the headlines, talked about on radio, displayed on the Internet, and viewed on television. For many athletes, this exposure is what helps define them as a celebrity. In particular, athletes differ from other celebrities in the fashion in which their performance affects credibility because the athletic competition is not staged but a volatile and live production. Often times other celebrities build their credibility through pre-existing conditions such as rehearsed and written speeches, digitally recorded music, and scripted shows or movies. This is why it is worthwhile to examine how unstable/stable performance affects the credibility of an athlete endorser.

Consequently, in the current study, performance has been examined as to its influence on source credibility, especially the source trustworthiness and expertise. Meaning, the better an athlete performs, the stronger the consumers' perception of that athlete's trustworthiness and expertise becomes. It is speculated that poor athletic performances by athlete endorsers will signal a negative shift in consumers' perceptions of this individual's level of expertise; thereby detrimentally affecting his or her overall source credibility. In addition, successful athletic performances signified by winning or consistent successful finishes fabricating overall source credibility would foster the endorser's effectiveness to positively influence consumers' brand attitude, attitude toward the advertisement, and purchase intentions. This study seeks to add to existing research by examining the influence athletic performance has on source credibility as well as its impact on consumers' brand attitude, attitude toward the advertisement, and purchase intentions. The following research questions (RQs) were scrutinized.

- RQ₁: Does athletic performance cause a significant difference in each element of source credibility?
- RQ₂: Does athletic performance have a significant influence on source credibility?
- RQ₃: What are the causal relationships among consumers' brand attitude, attitude toward the advertisement, and purchase intentions associated with source credibility?

Method

Research Design

A between-group experimental design was chosen to assess differences in the source credibility based on an athletic endorser's on-field performance. This design involved two treatments and each participant was randomly assigned to only one treatment: either good or bad

performance scenario about a sport athlete (e.g., endorser). Prior to the experiment, a pretest was conducted to create the profile of a fictitious endorser, stimuli (e.g., good and bad on-field performance scenarios), and a fictitious product for the advertisement. Students involved in the pretest did not participate in the main experiment.

Creation of a credible sport athlete. In the line of source credibility and advertising research, the use of a fictitious person as an endorser minimizes prior exposure to and perceptions about him or her because “with the use of familiar endorsers, such as well-known celebrities, there can be a significant amount of variation in subjects’ knowledge and attitude toward that familiar individual” (Till & Busler, 2000, p.4). In addition, it was a necessary condition that a selected fictitious endorser should be a credible source in terms of attractiveness, trustworthiness, and expertise to solely examine overall source credibility of the endorser. Thus, based on these premises the pretests were intended to formulate a fictitious endorser as follows.

First, the endorser should be attractive to the respondents in order to manipulate source attractiveness. Ten headshot pictures of women found to be attractive were chosen by the researchers. The pictures were laid out on a single piece of paper and fifty undergraduate students were asked to indicate their level of agreement on this person being an attractive female golfer. The respondents indicated their view on a 5-point Likert type scale ranging from “strongly disagree” to “strongly agree.” The picture with the highest mean ($M = 3.92$, $SD = .80$) was chosen as the picture of the fictitious endorser for the experiment. After choosing the fictitious endorser, the next step was to select a name for the fictitious endorser. The researchers also created ten fictional names (first and last names) and then all the names were laid out on a single piece of paper underneath the picture of the person. Fifty undergraduate students were asked to indicate their level of agreement on this name being an appropriate fit for the picture

above. The students indicated their view on a 5-point Likert type scale ranging from “strongly disagree” to “strongly agree.” The name with the highest mean ($M = 3.50$, $SD = 1.24$) was chosen as the name of the fictitious endorser. From the results of the above pretests, LPGA golfer Morgan Mitchell was created as the sport celebrity for the experiment but participants were not aware of that fact.

Second, in order to manipulate trustworthiness and expertise, a biographical sketch of the created endorser, Morgan Mitchell, was developed. Since Giffin (1967) considered “favorable disposition” and “perceived supportive climate” as favorable consequences of trust, the following statement was used to manipulate trustworthiness of Morgan Mitchell.

“Mitchell is the co-founder of an organization designed to raise awareness and donations for breast cancer research. An annual golf tournament is held to raise money for this cause”.

Also, as expertise was referred to as “qualification” (Berlo, Lemert, & Mertz, 1969) in this study, LPGA membership and years as a LPGA professional golfer were used to manipulate expertise of the created endorser. As a result, the fictitious endorser used for the experiment was considered to possess all elements of source credibility addressed by Ohanian (1990, 1991).

Stimuli. Two different fictional scenarios were developed to manipulate an athletic endorser’s on-field performance since this study was designed to examine the differences in source credibility based on an athletic endorser’s recent performance. Prior research has shown the use of fictional scenarios to be effective. For example, Till and Shimp (1998) presented negative information about a fictional cyclist to measure brand evaluations after negative information had been released about an athlete. Priester and Petty (2003) used a fictional scenario to present contrasting information about a fictitious endorser in order to manipulate

endorser trustworthiness. As a result, using a fictional scenario for the fictitious endorser is based on similar reasoning that differences will arise with two different scenario types (negative and positive).

A creation of brand. The use of a fictitious brand name with a predetermined product category could control preexisting cognitive and affective reactions caused by prior exposure and experience (Till & Shimp, 1998). This study used a fictitious brand for a product category selected through a two-step pretest as follows.

First, the product category screening test was used to select a popular product category and was administered to fifty undergraduate students in order to learn about students' interest in product categories. In the product category screening test, the respondents ($N = 50$) were instructed to write down the top three product categories based on their interest and involvement. The product category with the highest frequency was cellular phones (16%). Therefore, the endorsed product used for the experiment was a cellular phone.

Second, after selecting the product categories, the next step was given to find a name for the product category. The researchers chose a picture of a cellular phone, which appeared to be a generic flip phone without any brand name on it, and created 10 fictional brand names. All the names were laid out on a single piece of paper underneath the picture of the cellular phone and fifty undergraduate students were asked to indicate their level of agreement for the names being used as the brand name for the picture of the cellular phone. They responded on a 5-point Likert-type scale ranging from "strongly disagree" to "strongly agree." The brand name, Axon Max, with the highest mean score was chosen for the experiment ($M = 3.24$, $SD = 1.26$).

Participants

The experiment was administered to 208 undergraduate students enrolled in sport management and communication courses at a large, public university in the southeastern region of the United States. Although the use of a convenience sample of student participants is certainly limited with regard to the issue of external validity, a student was deemed acceptable for the study because students are representative of the target market for the product category and are familiar with the product (Ferber, 1977). Of the total 208 participants in this study the majority ($N=140$, 67.3%) were males with 32.7% females ($N=68$), and participants had a mean age of 21.87 ($SD = 3.34$). Sample sizes of 200 or more have been considered acceptable for use of Structure Equation Model (SEM) (Garver & Mentzer, 1999; Hoelter, 1983).

Data Collection Procedure

The experiment given to participants was to respond to a series of questions (i.e., a total of 18 questions) during and after viewing a packet of information. For example, the respondents first viewed a brief biography of the fictitious endorser accompanied by a picture and then viewed a fictional news article outlying a positive or negative performance scenario. Source credibility and perceived on-field performance of the endorser were then evaluated using 7-point semantic differential scales. An advertisement featuring a picture of the cellular phone with its product name and an endorsement of the product from the fictitious endorser also continued to be viewed in the next page. After viewing the advertisement, the respondents were then asked to evaluate brand attitude, attitude-toward-the-advertisement, and purchase intentions of the endorsed product via answering seven-point semantic differential scales and seven point Likert scales.

Measures

All latent constructs included in the study were measured using multi-item scales. The initial reliability of each latent construct ranged from .702 for source credibility to .942 for brand attitude. Therefore, all scales were found to be internally consistent as reliability coefficients exceeded the .70 threshold suggested by Nunnally (1978).

First, source credibility was examined by using three 7-point semantic differential scales anchored by unattractive/attractive, not an expert/expert, and untrustworthy/trustworthy derived from the 9-item scale in Ferle and Choi (2005). In particular, Ferle and Choi examined a high-order measurement model and found that three components of source credibility developed by Ohanian (1990) could converge into one latent construct. Consequently, the current study followed the recommendations of Ferle and Choi and considered source credibility as an overall construct, featuring the three common characteristics (e.g., expertise, trustworthiness, and attractiveness) which previous research discussed.

Second, a four-item measure conducted using seven-point semantic differential scales was developed to evaluate the fictitious endorser's on-field performance. For example, statements used to measure on-field performance after viewing the fictional news articles were "Morgan Mitchell's performance has been: (1) unreliable/reliable; (2) bad/good; (3) inconsistent/consistent; (4) undependable/dependable."

Third, brand attitude was examined by using three 7-point semantic differential scales anchored by unfavorable/favorable, bad/good and negative/positive used by McDaniel and Kinney (1996). Fourth, in order to measure attitude toward the advertisement, the four-item scale developed by Lee (2000) was employed. These items were measured using seven-point Likert scales ranging from 1 as "strongly disagree to 7 as "strongly agree". For example,

statements were: (1) I like the advertisement that I saw; (2) the advertisement that I saw is attractive to me; (3) the advertisement that I saw is appealing to me; (4) the advertisement that I saw is interesting to me.

Finally, a 3-item measure conducted using seven-point semantic differential scales was developed to evaluate purchase intentions of the fictitious brand / product. For example, statements used to measure purchase intentions were “The next time I consider purchasing a cellular phone, I will consider Axon Max: (1) impossible/possible; (2) unlikely/likely; (3) improbable/probable.”

Data Analysis

The analysis of data from the experiment was performed using the SPSS 19.0 and EQS 6.1 programs. Independent sample t-tests and multivariate analysis of variance (MANOVA) were used to examine differences in perceived on-field performance and overall source credibility as well as differences in each element of source credibility. For this analysis, two different performance scenarios (e.g., experiments) were considered as the independent variable while perceived performance and source credibility were considered as the dependent variables. In addition, a two-stage modeling strategy, examining the measurement model and the structural equation model (SEM), recommended by Anderson and Gerbing (1988) was employed to evaluate the model fit as well as the direct and indirect relationships among the hypothesized latent constructs.

Results

Manipulation Checks

The manipulation checks specified whether the experimental manipulations worked or not as the current study employed a between-group experimental design to examine differences in the source credibility based on an athletic endorser's performance. Levene's test was used to assess the assumption of variance homogeneity in the groups exposed to two different scenarios and resulted in failure to reject decisions indicating that the variances were equal over the groups: $F(1, 206) = .019, p = .890$.

Findings from an independent sample t-test ($t = 17.93, p < .000$) revealed that participants exposed to the positive performance scenario (PPS) had a higher perceived value ($m = 1.78$) of an athletic endorser's on-field performance as compared to the value of students ($m = -1.21$) exposed to the negative performance scenario (NPS). These findings supported the further use of manipulations to examine differences in source credibility.

Differences in Source Credibility

In order to examine differences in the source credibility of the endorser, participants were assigned to either PPS or NPS groups. Levene's test revealed that the assumption of variance homogeneity in the two scenario groups resulted in failure to reject decisions indicating that the variances were equal over the groups: $F(1, 206) = .136, p = .713$. Findings from the t-test indicated that students exposed to the PPS reported a higher value ($m=1.22$) on overall source credibility as compared to the value reported by students ($m=.61$) exposed to the NPS.

MANOVA was also used to examine differences in respective elements of source credibility. The test of the assumption of homogeneity of covariance matrices in the two scenario groups resulted in a reject decision: Box's $M = 19.59$, $F(6, 307460.8) = 3.21$, $p = .004$, indicating a likely violation of the assumption. However, a follow-up analysis with Levene's test for respective elements of source credibility resulted in failure to reject decisions for all elements, indicating that the variances were equal across the two scenario groups: expertise, $F(1, 206) = 3.09$, $p = .080$; attractiveness, $F(1, 206) = 1.00$, $p = .318$; trustworthiness, $F(1, 206) = .081$, $p = .776$.

Results of the MANOVA indicated that the equality of the means over the PPS and NPS groups as to the elements of source credibility was rejected at the .05 level: Wilk's $\Lambda = .824$, $F(3, 204) = 3.33$, $p < .000$. Univariate F -tests provided additional support indicating the differences in expertise and trustworthiness were statistically significant between positive and negative scenario groups: $F(1, 206) = 31.92$, $p < .000$; $F(1, 206) = 15.56$, $p < .000$, while a non-statistical difference in attractiveness was found between those two groups: $F(1, 206) = .163$, $p = .687$.

Tests of the Hypothesized Relationships

A two-stage structural equation modeling strategy recommended by Anderson and Gerbing (1988) was employed to examine the effects of perceived on-field performance on source credibility and to investigate the relationship between source credibility and other related properties such as brand attitude, attitude toward the advertisement, and purchase intentions. In particular, tests of all measurement and structural models were based on the covariance matrix and used maximum likelihood estimation as implemented in EQS 6.1 (Bentler & Hu, 2005).

First, the values of selected fit indices indicated a favorable model fit for the initial measurement model while the results of chi-square estimated that the hypothesis of exact fit was rejected ($\chi^2(109)=214.33, p < .000$). For example, the Standardized Root Mean Squared Residual (SRMR), one of the absolute fit indices, was .05; the Root Mean Square Error of Approximation (RMSEA), one of the parsimonious fit indices, was .06; the Comparative Fit Index (CFI), one of the incremental fit indices, was .964. Although the results of the LM test recommended model modifications, providing a slightly better fit to the data, the recommended modifications were not theoretically justifiable. As a result, the initial measurement model was deemed acceptable for the further use of the final measurement model as part of a SEM hypothesizing causal paths among latent constructs.

Second, the SEM provided a good fit to the data, $\chi^2(114) = 223.256, p < .001$, SRMR = .063, RMSEA = .068, CFI = .962, and all estimated parameters were statistically significant. The results of the LM test did not recommend any model modifications which would provide a slightly better fit to the data. Therefore, no further consideration was given to the inclusion of additional paths.

Decomposition of effects derived from the SEM indicated that perceived on-field performance had a significant influence on source credibility ($t = 7.70, p < .01$), which explained approximately 44% of the variance in source credibility. In particular, this path had the strongest relationship, where a one standard deviation increase in perceived on-field performance led to a .662 standard deviation increase in source credibility, holding all else constant. Also, brand attitude was predicted by source credibility ($t = 5.27, p < .01$) while brand attitude had a significant influence on attitude toward the advertisement ($t = 6.23, p < .01$). The model

explained approximately 20 % of the variance in brand attitude and 24% of the variance in attitude toward the advertisement.

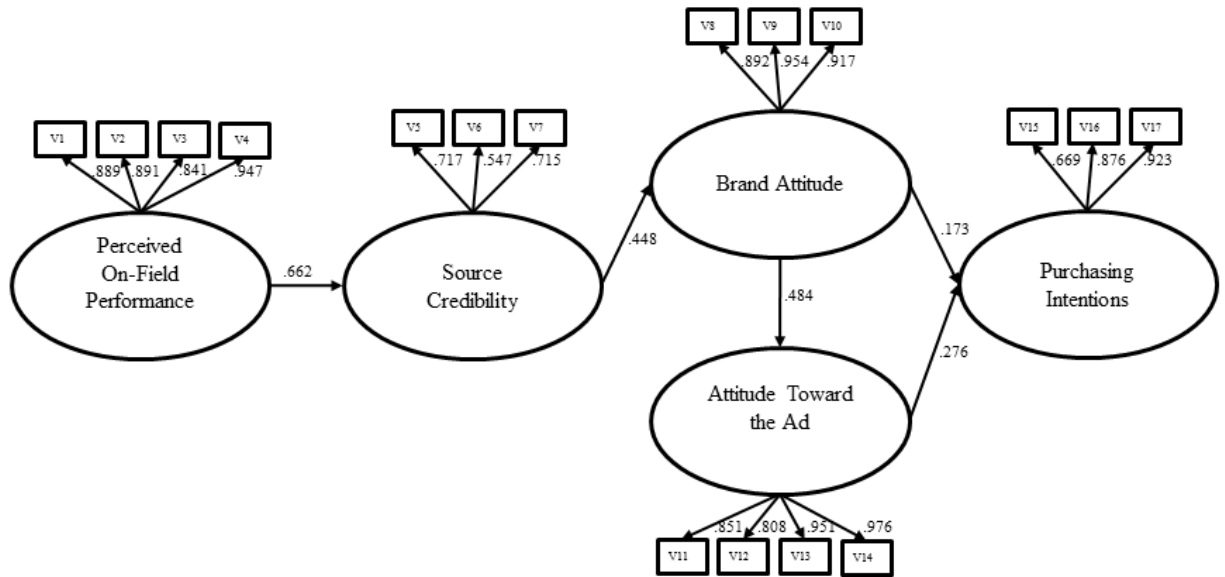


Figure 2.1. The SEM model labeled with the standardized effects.

Finally, brand attitude ($t = 2.19, p < .01$) and attitude toward the advertisement ($t = 3.31, p < .01$) were found to be significant determinants of purchase intentions, respectively.

Approximately 15% of the variance for purchase intentions was explained by brand attitude and attitude toward the advertisement. The standardized parameter estimates for measurement and structure components were presented in Figure 2.1.

Discussion and Conclusions

Many advertisers and marketers have spent a substantial amount of money for athlete endorsement as various benefits emerge from using athlete endorsers in product or brand

advertising (Ferle & Choi, 2005). However, little is known about the impact of an athlete's on-field performance on source credibility. Accordingly, the primary purpose of this study was to gain a better understanding of the impact of athletic performance on source credibility that facilitates the relationship between the associated attitudes (e.g., brand, advertisements) and purchase intentions. Results of the study have provided several marketing implications for advertisers to consider and researchers to pursue.

First, the results of the present study identified differences in the elements of source credibility based on an athlete endorser's on-field performance. In particular, the perceived on-field performance was found to have a significant influence on source trustworthiness and expertise while a non-statistical difference was found in source attractiveness. These findings imply that overall source credibility of an athlete endorser could be affected by his/her on-field athletic performance. Sport marketers or advertisers make strategic decisions as to how to maintain their relationships with sport celebrities. This study emphasizes the importance of recognizing the impact of current athlete performance in advertising and on endorsed brands.

Moreover, the decomposition of the effects derived from the SEM revealed the positive relationship between perceived on-field performance and source credibility. This suggests that when a consumer perceives positive information about an athlete endorser's on-field performance, he/she is likely to consider the athlete endorser as a more credible source. However, if that individual is exposed to negative on-field performance, his/her perception of the endorser's credibility is likely to decrease. Findings are consistent with the notion derived from Wright's CSM (1973) and Fishbein's attitude theory (Fishbein & Ajzen, 1975). They believed that one's attitude is generated from his/her salient beliefs. In this context, source credibility

formed by on-field performance (e.g., cognition) could function as salient beliefs which affect subsequent attitude change.

In relation to the formation of beliefs, another considerable implication is that on-field performance might be closely associated with off-field issues. For example, Tiger Woods' highly publicized off-field issues appear to have negatively impacted his on-field performance. This in turn has affected his source credibility. However, what if Tiger Woods had performed better in tournaments following his difficulties off of the course? His diminished credibility might have recovered more rapidly with a good/satisfactory performance on the course resulting in renewed endorsement contacts. Findings from the current study indicated that an athlete's on-field performance improves a consumer's belief in their endorsement-related expertise and trustworthiness.

Second, the results from the decomposition of the effects indicated that source credibility had a positive influence on brand attitude while the effect of source credibility on attitude toward the advertisement was mediated by brand attitude. Findings were consistent with the results from previous research (e.g., Anderson, 1976; Collins & Loftus, 1975; Rumelhart, Hinton, & McClelland, 1986) demonstrating that consumers' beliefs toward an endorser are expected to transfer to the endorsed brand based upon their cognitive association. In other words, as a person's evaluation of an endorser has an opportunity to link to an endorsed brand, poor on-field performance can deteriorate evaluation of the endorser which will directly influence a consumer's attitude toward the associated brand (Till & Shimp, 1998). Our findings clearly indicate that source credibility has a positive effect on brand attitude.

Till and Shimp (1998) also argued that the association between beliefs and attitudes in the context of advertisements is relatively stronger when new or unfamiliar brands have the

association with a celebrity endorser who is essentially the primary cause for evaluation. Since the current study was designed to manipulate the effects of a fictional endorser rather than those of an advertisement, source credibility was directly related to brand attitude while attitude toward the advertisement was indirectly influenced by source credibility via brand attitude. However, considering that there are also direct effects of attitude toward the advertisement on brand attitude, the relationships between brand attitude and attitude toward the advertisement may have more variability than can be explained by a single hierarchy like the previous studies (Ferle & Choi, 2005; Gardner 1985; Mitchell & Olson, 1981; Shimp, 1981). Therefore, it seems reasonable to expect that the relationship between brand attitude and attitude toward the advertisement may be diverse in accordance with the levels of endorser equity and brand equity in advertisements as well as the effects of advertisements.

Finally, brand attitude and attitude toward the advertisement were found to be significant determinants of purchase intentions, respectively. Findings were consistent with the theoretical perspectives suggested by Deogun and Beatty (1998) and Mitchell and Olson (1981) indicating that the consumers' affective reactions (i.e., attitudes) lead to purchase intentions. In the field of sport marketing and communication, consumers' affective reactions to endorsement activities have important implications in terms of measuring the effectiveness of a particular communication message. This is because the relationship between beliefs and consumers' affective reactions in the cognitive information process presents diagnostic information about the effectiveness of a message strategy (Mitchell & Olson, 1981). Thus, findings in support of a consistent pattern among beliefs, attitudes, and purchase intentions verify the notion that purchase intentions are a function of the consumers' affective reactions to endorsement activities that could have an effect on actual sales and consumption of endorsed-brand products.

In relation to a mediating effect of the consumers' affective reactions, the current study revealed that brand attitude has a direct, positive influence as well as an indirect influence on purchase intentions mediated by attitude toward the advertisement. In addition, a direct causal relationship was found between attitude toward the advertisement and purchase intentions. In particular, the direct causal relationship from brand attitude to purchase intentions was consistent with the authoritative direction of the extended Fishbein's attitude theory while Mehta and Purvis (1997) explicitly revealed the direct causal link between attitude toward the advertisement and purchase intentions in their Advertising Response Model, which was also found to support our findings.

However, a number of studies have proposed that an affective construct representing consumers' favorable feelings toward the advertisement (i.e., attitude toward the advertisement) has a mediating effect on brand attitude and purchase intention (Ferle & Choi, 2005; Mitchell & Olson 1981; Shimp 1981) whereas the current study showed a mediating role of brand attitude in a path between attitude toward the advertisement and purchase intentions. The discrepancy might occur since the primary focus of the manipulation employed in this study was intended to examine differences in the source credibility based on an athlete endorser's performance rather than evaluating the effectiveness of an advertisement. In addition, an athlete endorser's credibility devolved by his/her athletic performance seems to have a direct association with brand attitude which is then linked to attitude toward the advertisement and purchase intentions. Thus, it would be interesting to compare the effect of source credibility constituted by a particular type of stimuli (e.g., performance, scandal, campaign, etc.) on the causal sequence of consumers' affective and purchase reactions. It seems reasonable to hypothesize that the causal

sequence could be different depending on the way athlete endorsers reduce and also attempt to restore their credibility.

In summary, athletes are considered more credible when they maintain their athletic performance. Consumer perception of athlete credibility is one of the critical factors mediating the relationships among perceived on-field performance, attitude toward the advertisement /brand, and purchase intentions. Since the issue of whether or not an athlete celebrity's on-field success affects the dimensions of source credibility is scarcely addressed in athlete endorsement literature, the present study will provide valuable information for sport marketers to consider when implementing athlete endorsement strategies. In particular, the current study allows sport marketers as well as advertisers to make knowledgeable decisions about who will endorse their product, and for how long they will endorse it. It is always necessary for sport marketers to realize the practical implications, due to their substantial financial commitment, regarding athlete endorsements and the athletes they choose to endorse their brand.

Limitation and Future Studies

This study provides important insights regarding how source credibility founded on perceived on-field performance mediates the relationship between consumers' affective reactions and purchase intentions. The results of the study should be interpreted within certain constraints. The current study was confined to a convenient sample of undergraduate students at a major public university in the southeastern region of the United States. Therefore, the findings cannot be generalized to any specific populations or geographical areas. Future studies would gain external validity by employing probability samples of consumers.

Another constraint that should be considered is that the experiments utilized manipulated levels of an athlete endorser's on-field performance rather than measuring naturally occurring perceptions of his/her athletic performance. For instance, the study employed a between-group experimental design and participants were asked to view one of the experiments including the fictitious endorser's on-field performance. These manipulations were artificially extreme in order to fabricate large differences in source credibility. Utilizing this, we can examine the effects of on-field performance on source credibility in a consumer's cognitive structure. However, this procedure could result in a lack of realism (Goldsmith, Lafferty, & Newell, 2000). Future studies could incorporate real athlete endorsers to gain the generalizability of the findings.

Ohanian (1991) found that male and female endorsers were perceived as being significantly different regarding their source credibility in the eyes of respondents while a respondent's age and gender did not affect the evaluations of the endorser's source credibility. These findings were consistent with the study conducted by Boyd and Shank (2004). They indicated that although a respondent's gender had no effect on the three dimensions of source credibility, there was a significant interaction effect between a respondent's gender and an endorser's gender on the dimensions of source credibility.

However, the current study only employed a female golfer as the athletic endorser to examine differences on her source credibility when exposed to negative or positive performance. Therefore, future research might employ a similar experimental design including a male athletic endorser to examine the effect of endorser's gender on the endorsement information process as role differentiation between men and women athletes perceived by individuals might lead to variations of endorser effectiveness (Ferle & Choi, 2005).

One should also consider that featuring other types of sports and products would extend the scope of the findings. An athlete endorser may have a different association with a sponsoring brand due to the characteristics/preferences of that athlete's fans. For example, a professional golfer's endorsement of a luxury golf club brand will have more value than those of a NASCAR driver. Also, sport related products endorsed by an athlete may reveal a stronger relationship between brand attitude and purchase intentions than those of non-sport related products. A concept related closely to this phenomenon is the match-up hypothesis. A successful match-up is one in which "... the highly relevant characteristics of the spokesperson are consistent with the highly relevant attributes of the brand" (Misra & Beatty, 1990, p. 161). Consumer reactions to endorsees (e.g., a brand, product, or service) are expected to be more positive if the endorser has a good match-up with them (Misra & Beatty, 1990). As sport marketers and advertisers are likely to choose an endorser according to their promotional and advertising emphasis, future studies would extend a similar research design to other sports settings as well as to different product categories accompanied by focusing on the issue of the match-up hypothesis.

The finding that an athlete's on-field performance improves a consumer's belief in the athlete's endorsement-related expertise and trustworthiness might function as a partial solution for off-field issues in order to maintain the endorser's credibility. Future studies should consider whether athletes with positive on-field performance are able to maintain endorser credibility in the face of off-field issues better than those athletes who have low levels of on-field performance.

Finally, the current study was confined to "non-natural" exposure of the advertisement (Mitchell & Olson, 1981). The advertisement exposure used in this study was obligatory and timed while frequent exposures to an advertisement might naturally affect changes in beliefs and attitude toward the advertisement. Future studies will be required to have rigorous controls in

advertising stimuli (e.g., advertisement exposure intervals, the format of advertisement, etc.) in order to obtain natural advertisement effects. In addition, they should be performed to understand the time frame associated with negative performance and its effect on source credibility. For instance, if an athlete endorser has one year of bad performance, does that in turn result in negative consumer perceptions of the sponsoring brand? How much negative performance does it take to impact consumer-based brand equity?

The current study clearly demonstrates how an athlete endorser's on-field performance changes his/her overall credibility mediating brand attitude, attitude toward the advertisement, and purchase intentions. By examining the role of athletic performance in endorsement activities, sport marketers and advertising practitioners may be able to develop more effective communication strategies as our findings justify the consideration of athlete endorser's on-field performance to evaluate source credibility as well as advertising effects.

CHAPTER THREE

This chapter concerns effects of service dimensions on service assessment in consumer response. A cross-sectional survey design is employed to examine the causal relationship between the dimensions of service quality and the assessment of service quality. Therefore, the current study is intended to provide a conceptual framework of the service attributes and their associations with perceived service quality, satisfaction, and behavioral intentions.

EFFECTS OF SERVICE DIMENSIONS ON SERVICE ASSESSMENT IN CONSUMER RESPONSE: A STUDY OF COLLEGE FOOTBALL SEASON TICKET HOLDERS

The number of spectators attending college sporting events has grown tremendously during the past 20 years (Hightower, Brady, & Baker, 2002; Koo, Andrew, & Kim, 2008). It is necessary for all collegiate athletic departments to continuously evaluate the fan experience if they would like to preserve and boost the number of people attending their games. Particularly, an understanding of season-ticket holders' perception of service quality and its influence on perceived service quality, satisfaction, and behavioral intentions are crucial to the success of college sports as they are a considerable direct income resource for college sports, often associating with about one-third or more of the total revenue (Fulks, 2010).

During the past few decades, research in the field of service marketing has focused on consumers' perceptions of service quality (e.g., Grönroos, 1982; Kang & James, 2004; Parasuraman, Zeithaml, & Berry, 1985, 1988; Rust & Oliver, 1994; Zeithaml, Berry, &

Parasuraman, 1996) and has examined how perceived service quality can be determined by functional (Grönroos, 1982; Lehtinen & Lehtinen, 1982), technical (Grönroos, 1982; Lehtinen & Lehtinen, 1982), and environmental (Bitner, 1992) aspects of service quality.

In addition, another major area that researchers in service marketing have scrutinized is how service quality is assessed. This includes the evaluation of consumer satisfaction (Cronin & Taylor, 1992; Kang & James, 2004; Lentell, 2000; Parasuraman, Zeithaml, & Berry, 1985, 1988) and behavioral intentions (Anderson & Fornell, 1994; Bitner, 1990; Sivadas & Baker-Prewitt, 2000). In the field of sport and leisure, service marketing is an enormously growing area and a number of studies have been conducted to investigate how service quality could affect cognitive, affective, and behavioral responses of sport consumers (Howat, Absher, Grilley, & Milne, 1996; Kim & Kim, 1995; McDonald, Sutton, & Milne, 1995; Koo et al., 2008; Koo et al., 2009; Papadimitriou & Karteroliotis, 2000 ; Theodorakis & Kambitsis, 1998; Theodorakis, Kambitsis, Laios, & Koustelios, 2001).

Despite sustained interests of service marketing in sport and leisure research, there have been relatively little amounts of research testing a theoretical model in order to explain season ticket holders' behaviors indicated by the relationships among service attributes, perceived service quality, service quality, and behavioral intentions in college sport settings. Therefore, the purpose of this study was two-fold: (1) to examine whether the hypothesized model fits the data adequately, and (2) to investigate the relationship between the dimensions of service quality and the assessment of service quality in consumer response.

The delivery of quality service is continuously recognized as an important factor for Football Bowl Subdivision (FBS) institutions to position themselves more successfully in the competitive field of entertainment options. Two of the goals of sport marketing in college sports

are to increase fan attendance at an event and to increase fan enjoyment once at the event (Mullin, Hardy, & Sutton, 2000). As a result, college sport administrators must understand how to make their season-ticket holders have a positive experience at a sporting event. Examining the different dimensions of service quality will enable college sport administrators to determine what aspects of service quality are important to the overall experience of the fans. The current study is intended to develop a comprehensive set of measures of the service aspects and its relationship with the assessment of service quality. Monitoring the level of season-ticket holders' perception of service quality is an important role for sporting organizations. Thus, the findings from this study could serve as a cornerstone to minimize the discrepancies between season-ticket holders' desires to attend college football and their perceptions regarding the service quality delivered by college football. These efforts will provide the quality of service as well as lead to additional ticket sales and repeat consumers in college sports.

Research in Season Ticket Holders

Understanding season tickets holders is critical in collegiate athletics. Revenue sources for members of NCAA – Football Bowl Division (formerly Division I-A) are derived from three primary sources: 1) NCAA and conference distributions, 2) donations, and 3) ticket sales (Fulks, 2010). The median of total generated revenues for these institutions was \$35.3 million in 2010 with 26% of that being derived from tickets sales. That is the highest percentage of any category (Fulks, 2010). Another sobering facet of intercollegiate athletics is that only 22 of the 120 members actually had generated revenues exceed expenses. The other universities relied on student fees and institutional support to balance their budget (Berkowitz, Upton, McCarthy, & Gillium, 2010). Football itself is not a guaranteed source of revenue either as only 68 athletic

departments had revenues for football that outpaced expenses (Fulks, 2010). Season-ticket holders help fund the core activities of a sports organization and attract outside funding through sponsorships who want to reach those people (McDonald & Stavros, 2007).

Research on season-ticket holders can fall into basically two broad categories: season-ticket holders as stakeholders and motivations of season-ticket holders. Zagnoli and Radicchi (2010) examined the role of season-ticket holders as stakeholders for a professional soccer team in Florence, Italy. They used stakeholder theory to identify the place where season-ticket holders fell within the sport system. The season-ticket holder and other fans are in essence the destination for the product that is being produced by the sport organization (Zagnoli & Radicchi, 2010). Season-ticket holders and fans were identified as a primary stakeholder in the team and are fundamentally what causes the demand for the product. The importance of season-ticket holders is reinforced by the finds of McDonald and Stavros (2007). A large season-ticket base is considered “staple ingredient for a successful sport franchise” (McDonald & Stavros, 2007, p. 218). Ticket sales are a major source of revenue for sport organizations and season-ticket holders account for a large percent of the total ticket sales (Beccarini & Ferrand, 2006). Covell (2005) used stakeholder theory as well and examined the role team success has on season-ticket holders’ allegiance, attachment and attitudes toward financial donations of a member of the Ivy League. The majority of the respondents (88%) were connected to the institution because of their role as former students and many (54%) former student-athletes as well. The notion of winning influencing attitudes to make financial donations was not shown in the case of this university (Covell, 2005).

Slattery and Pitts (2002) examined the sponsorship recall of season-ticket holders of a collegiate football team during the course of a season. The authors, like others, recognized the

season-tickets holders as significant stakeholder in intercollegiate athletics thus their recall should be examined. Their results showed there was an increase in recall of eight of the nine sponsors but only three showed an increase that was statistically significant. Issues arising from this include the possibility of too much advertising or too many sponsors in regards to sporting events (Slattery & Pitts, 2002).

Another considerable research focus concerning season-ticket holders is motivations of season-ticket holders. McDonald and Stavros (2007) explored the motivations of season-ticket holders and intentions to remain season-tickets holders of four members of the Australian Football League (AFL) and one member of the National Rugby League (NRL). The two motives that were most prevalent were to financially support the team and to have a stronger team affiliation. The primary reasons for not remaining as season-ticket holder were changes in the family and the inability to attend games due to other commitments (McDonald & Stavros, 2007). Beccarini and Ferrand (2006) examined motives of season-ticket holders of French Premier League soccer teams and the relationship with fan satisfaction. Fan satisfaction was linked to the enjoyment received from attending the matches as well as the overall club image in regards to efficient management and team performance. Pan, Gabert, McGaugh, and Branvold (1997) examined the motives of season-ticket holders of a major collegiate basketball team and also looked for differences in the motives based on selected demographics. Five factors emerged from the data analysis: 1) athletic event, 2) economic factors, 3) schedule, 4) social factors, and 5) team success, while loyalty to the University' team was employed as an additional factor regardless of factor loadings due to its importance in previous studies. Differences existed between males and females in regards to the social and loyalty and females ranked higher in both.

Respondents under 40-years old ranked social higher as well and had the highest level of loyalty (Pan et al., 1997).

Zhang, Connaughton, and Vaughn (2004) were interested in the perceived value of programs and services to retain season-tickets holders of a National Basketball Association (NBA) franchise. These include items such financial awards (discounts), ticket purchasing priority, and opportunities to interact with the team and players. The results showed 15 of the 11 programs and services investigated were important to season-ticket holders, and the respondents were generally satisfied with them (Zhang et al., 2004). Pan and Baker (2005) also explored the importance of maintaining season-ticket holders as well as cultivating new ones. Their research focused on the decision-making process of season-ticket holders of a major collegiate football program. Five factors emerged that explained approximately 70% of the variance: 1) team performance, 2) economic views, 3) game competitiveness, 4) athletic event, and 5) social affinities (Pan & Baker, 2005). The results that winning is indeed important in maintaining current season ticket holders and developing new ones.

The identification of someone as season-ticket holder has been used a demographic variable in comparing them to non-season holders as well. This has been done in regards to consumer motives (Lee, Trail, & Anderson, 2009; Funk, Ridinger, & Moorman, 2004), donor motivation in collegiate athletics (Hardin, Piercy, Bemiller, & Koo, 2010; Mahony, Gladden, & Funk, 2003), and emotional attachment (Koo, Andrew, Hardin, & Greenwell, 2009; Koo & Hardin 2008). A commonality among all of the research and confirmed by Fulks (2010) is the season-ticket holders are certainly primary stakeholder in sport organization. There is a need to investigate season-ticket holders because increasing fan loyalty is a goal of sport organizations and ways to this must be explored (Beccarini & Ferrand, 2006).

Dimensions and Assessment of Service Quality

The delivery of high quality service is one of the important aspects of any service organization. In particular, college athletics today make a lot of effort to deliver quality services in an effective and efficient manner which, in turn, influences an increase of fan attendance at an event and the level of fan enjoyment once at the event. Previous research has suggested that a consumer's perception of service quality is a complex process accounted by multiple dimensions of service (Brady & Cronin, 2001; Koo et al., 2008; Parasuraman et al., 1985, 1988). This phenomenon has accelerated considerable debates concerning the dimensions of service quality.

One of the earlier noticeable efforts is the work of Parasuraman et al. (1985, 1988). They contended that a consumer's perception of service quality is determined by assessing the difference between the received and the expected service quality; and proposed the SERVQUAL model originally including the ten determinants of service quality. Subsequently, they (1988) reduced this number to the five dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. For instance, (1) "tangibles" designate services related to the appearance of physical facilities, equipment, personnel, and information material; (2) "reliability" is considered as an employee's ability to perform the service accurately and dependably; (3) "responsiveness" is associated with an employee's willingness to help consumers and to provide a prompt service; (4) "assurance" is a combined service quality related to an employee's competence, courtesy, credibility, and security; and (5) "empathy" is those of the employee's ease of contact, communication, and an understanding the customer's needs.

However, some researchers have criticized that the performance-based measures of service quality have more explanatory power than the gap-based measures employed in SERVQUAL (Cronin and Taylor, 1992) although they have advanced our understanding of

multiple dimensions of service quality. Kang and James (2004) also argued that the SERVQUAL dimensions appear to evaluate the aspects of service delivery rather than fully address other dimensions of service quality (e.g. environmental service and technical service). Thus, it is a critical premise that the dimensions of service quality should be customized to the context being examined (Cronin & Taylor, 1992; Murray & Howat, 2002).

In the context of sports, core product quality and product extension quality have been well documented as the primary dimensions of service quality. The quality of core product is determined by the attributes associated with the game itself. Much scrutiny has been given to the effects of team performance, quality of opponents, players, coach, and rivalry rank on fan attendance (i.e., Greenstein & Marcum, 1981; Hansen & Gauthier, 1989; Leeuwen, Quick, & Daniel, 2002; Madrigal, 1995; Schofield, 1983; Zhang, Smith, Pease, & Lam, 1998) indicating that the higher level of core product quality the team provides the more that spectators are satisfied with their experience at the event.

Furthermore, many different aspects of product extension quality have been studied to determine whether they have an impact on fans' satisfaction and behavior in different sport settings (Trail, Anderson, & Fink, 2002). Product extension quality is linked to other peripheral factors such as an interaction with a diversity of employees and perception of environmental readiness (Mullin et al., 2000; Trail et. al., 2002). For example, a significant number of studies have considered the environmental attributes as a critical dimension of service quality as they are conducive to a positive experience influencing a consumer's perceived service quality in the service encounter (e.g. Baker, 1986; Bitner, 1990, 1992; Koo, et al., 2008; Wakefield, Blodgett, & Sloan, 1996). Researchers have employed layout accessibility, facility aesthetics, seating comfort, electronic equipment/displays, ambient conditions (e.g., music, noise, and smell),

concessions, parking, and facility cleanliness to examine the impact of the environment quality on fan satisfaction and behavioral intentions (i.e., Greenwell, Fink, & Pastore, 2002; Hightower et al., 2002; Kelley & Turley, 2001; Koo, et al., 2008; Zhang, Smith, Pease, & Lam, 1998; Wakefield & Blodgett, 1994; Wakefield et al., 1996). In particular, service environment appears to enhance the consumer experience as sport fans spend an extended period of time observing a sporting event (Wakefield & Blodgett, 1996).

In addition to the environmental attributes, concessionaires, ticket sellers, merchandisers, ushers, and staff on the subject of friendliness, responsiveness, presentation, and expertise have been unitized to examine the impact of service personnel who facilitate the delivery process of the core product in the context of sports (i.e., Chelladurai & Chang, 2000; Greenwell, et.al., 2002; Murray & Howat, 2002; Kelley & Turley, 2001; Koo, et al., 2008; Shapiro, 2010; Wakefield & Blodgett, 1994; Wakefield & Sloan, 1995; Zhang, et. al., 1998).

Regarding conceptualization, product quality and product extension quality are parallel to Gronroos' technical and functional aspects of service quality. Gronroos (1984) identified the technical quality as the quality evaluation of what the consumer receives; and the functional quality as the quality evaluation of how the service is delivered. As an extension of Gronroos' model, Rust and Oliver (1994) suggested a three dimension model by adding service environment as a service component. In their model, service product, service delivery, and service environment were considered as the dimensions of service quality. Brady and Cronin (2001) also suggested the three dimensions of service quality: the consumer-employee interaction (e.g., functional quality), the service environment (e.g., environmental quality), and the outcome (e.g., technical quality) while Koo et al (2008) and Koo et al (2009) employed the

three dimensions of service quality as the conceptual framework to examine fan satisfaction and behavioral intentions in Minor League Baseball (MiLB) and women's college basketball.

Achieving fan satisfaction has appeared to be the primary goal for college athletics. Empirical research has revealed that fan satisfaction is a theoretical construct mediating the relationship between perceived service quality and behavioral intentions (e.g., Koo, et. at. 2008; Koo, et al. 2009). A person's cognitive and affective evaluations of service attributes often determine his/her satisfaction (Homburg, Koschate, & Hoyer, 2006). Oliver (2010) contended that satisfaction is the summary-state derived by both cognitive and affective elements in consumer response. Thus, satisfaction results in "the end of the consumer's processing activities and not necessarily when product and service outcomes are immediately observed" (p. 6-7). On the other hand, perceived service quality is defined as "the result of a consumer's view of a bundle of service dimensions" (Gronroos, 1984, p. 39.). The process of forming perceived service quality is mainly influenced by a comparison between expectations and performance in the course of a cognitive judgment in consumer response when the qualities of services are directly experienced (e.g., Bearden & Teel, 1983; LaBarbera & Mazursky 1983; Oliver, 2010; Zeithaml, Berry, & Parasuraman, 1993).

Although service quality research has been widely conducted in spectator sports, relatively little attention has been given to the distinction between perceived service quality and satisfaction. There are only a few studies with mixed findings that have recognized that the dimensions of service quality are significant determinants of perceived service quality; and have examined the mediating effect of satisfaction between perceived service quality and behavioral intentions in sports. For example, Koo, et al. (2009) examined spectators in MiLB in order to investigate the causal relationships between particular service attributes and perceived service

quality, and its impact on fan satisfaction. Findings indicated that a spectator's perceived service quality was predicted by his/her evaluation of technical, functional, and environmental attributes of services. In particular, a comparison of standardized regression coefficients among the dimensions of service quality revealed that functional aspect of service had the most significant contribution on perceived service quality followed by environmental and technical aspects. They also addressed that perceived service quality was an antecedent of fan satisfaction in MiLB.

However, another study conducted by Koo et al. (2008) provided somewhat mixed findings concerning technical quality. They utilized the same conceptual dimensions of service quality including functional, technical, and environmental quality to examine fan satisfaction in Division I women's basketball. Findings indicated that the technical quality had a direct effect on fan satisfaction rather than an indirect effect mediated by perceived service quality. They argued that sport fans are likely to regard game or performance related service attributes as affective stimuli while functional and environmental attributes are associated with cognitive judgments in consumer response. This phenomenon is parallel with the study conducted by Oliver (1994) corroborating that only cognitive judgments (e.g., functional and environmental aspects of service) are the determinants of perceived service quality whereas both cognitive and affective judgments in consumer response tend to influence a consumer's level of satisfaction. Westbrook and Oliver (1991) also contented that affective and cognitive judgments have independent contributions to the formation of satisfaction while Kang and James (2004) suggested that functional quality may be superior to technical quality in explaining a person's perceived service quality.

This study, therefore, was designed to study both the dimensional and structural concerns in the relationship between the dimensions of service quality and the assessment of service

quality using data from football season ticket holders. In other words, the three service dimensions of functional, technical, and environmental quality were employed to evaluate a season-ticket holder's cognitive (e.g., perceived service quality), affective (e.g., satisfaction), and behavioral (e.g., behavioral intentions) responses in the context of college football. Service organizations always try to increase consumer satisfaction in order to position their service or business in the competitive field. Accordingly, it is a necessary condition to fully reflect the mediated effects in explaining the relationship between the dimensions of service quality and the assessment of service quality. Based on the foregoing discussion, the following research hypotheses have been proposed:

- RH₁: Functional quality has a direct positive effect on perceived service quality.
- RH₂: Environmental quality has a direct positive effect on perceived service quality.
- RH₃: Technical quality has a direct positive effect on fan satisfaction.
- RH₄: Perceived service quality has a direct positive effect on fan satisfaction.
- RH₅: Functional quality has an indirect positive effect on satisfaction mediated by perceived service quality.
- RH₆: Environmental quality has an indirect positive effect on satisfaction mediated by perceived service quality.
- RH₇: Fan satisfaction has a direct positive effect on behavioral intentions.
- RH₈: Technical quality has an indirect positive effect on behavioral intentions mediated by fan satisfaction.
- RH₉: Perceived service quality has an indirect positive effect on behavioral intentions mediated by fan satisfaction.

Method

Sample

The sample was selected from football season ticket holders at a public university in the southeastern region of the United States, competing in the Football Ball Subdivision (FBS). The data collection resulted in 1,746 responses but 93 responses (5.32%) were discarded due to the incompleteness of questionnaires. Of the total 1,653 respondents in this study, the majority of season-ticket holders were male (72.7%), were married (84.3%), had a mean age of 53.03 ($SD=12.71$), and had been season-ticket holders for approximately 20 years. More than a half of season-ticket holders (55.6%) make more than \$100,000 per year and over 81% of them had earned at least a bachelor's degree.

Data Collection Procedure

Data were collected via an online survey with a purposive sample as the present study focused on season-ticket holders' perception of service quality and their levels of satisfaction and behavioral intentions. An e-mail message was sent from the institution's athletic director to season-ticket holders who had provided an e-mail address. For example, each season-ticket holder received an introductory e-mail explaining the purpose of the study and a link to an online questionnaire which was housed on a university server. Two follow up e-mails were sent to season-ticket holders for every two weeks in order to increase response rate.

Measures

All latent constructs included in the current study were measured by 7-point Likert type scale anchored by *strongly disagree* (1) and *strongly agree* (7). The scales included two major

psychological properties such as the dimensions of service quality and the assessments of service quality. First, to measure the dimensions of service quality, the items were chosen from Koo, et al. (2008) and then were slightly modified to be applied to the current study. In particular, Koo, et al. (2008) study had used Bitner's (1992) servicescape and Grönroos' (1984) technical and functional quality as the theoretical constructs of service quality. For example, a five-item scale evaluating experiences of interacting with people working in the stadium was used to examine the functional aspects of service quality. Statements used to measure functional quality were: (1) Ushers working at the stadium are helpful; (2) People working at the stadium are knowledgeable; (3) People working at the parking area are courteous; (4) Ticket takers are courteous; (5) Concession workers are courteous. Cronbach's alpha coefficient for this subscale was 0.88.

A six-item scale measured the technical aspects of service quality, which could be generated by the core performances or outcomes of the home and opposing teams. Statements used to measure technical quality were: (1) [University name] ranking adds excitement to the game; (2) The opponent's conference standing adds excitement to the game; (3) [University name]'s conference standing adds excitement to the game; (4) The quality of the opponent is important; (5) The national prominence of the opponent adds excitement to the game; (6) The opponent's ranking adds excitement to the game. Cronbach's alpha coefficient for this subscale was 0.92.

In addition, the environmental aspects of service quality were examined by an eight-item scale evaluating experiences regarding physical circumstances around the stadium. Statements used to measure environmental quality were: (1) The stadium is kept clean; (2) The stadium's layout makes it easy to get where I want to go; (3) The directional signs at the stadium are helpful; (4) The food services in the stadium are adequate; (5) The souvenir stands are easily

accessible; (6) There are adequate restroom facilities; (7) The public address system is easy to understand; (8) The LED signage in the stadium is easy to read. Cronbach's alpha coefficient for this subscale was 0.85.

Second, the assessments of service quality were addressed by perceived service quality, satisfaction, and behavioral intentions that were used to evaluate cognitive, affective, and behavioral responses of sport consumers. In this study, perceived service quality and behavioral intentions were examined by a three-item scale adopted from Hightower et al. (2002). Statements used to measure perceived service quality were: (1) The services provided at [University name]'s games are excellent; (2) The service at [University name]'s games is outstanding; (3) I have received high quality services at [University name]'s games. Cronbach's alpha coefficient for this subscale was 0.92.

Also, satisfaction was measured with a three-item scale employed by Oliver (1980). Statements used to measure satisfaction were: (1) I am satisfied with my decision to attend [University name]'s games; (2) I am happy with the experiences I have had at [University name]'s games; (3) I am glad I choose to attend [University name] games. Cronbach's alpha coefficient for this subscale was 0.92.

Finally, the measures of behavioral intentions were measured by a 3-item scale that was used in Hightower et al. (2002) and Koo, et al. (2008). Statements used to measure behavioral intentions were: (1) I would enjoy attending another [University name] home football game; (2) I am likely to attend a game in the future; (3) I will continue to go to [University name] football games. Cronbach's alpha coefficient for this subscale was 0.94.

Internal consistency of each latent construct ranged from 0.85 for the environmental quality to 0.94 for behavioral intentions. Internal consistency exceeding the 0.70 threshold is

considered to possess an acceptable level of reliability (Nunnally & Bernstein, 1994). As correlation coefficients among the latent variables were below the maximum value of 0.85 recommended by Kline (2011) as well as previous literature supported that all of them were conceptually different, all latent variables in the present study were subjected to further analysis.

Data Analysis

Data were analyzed by using the SPSS 19.0 and EQS 6.1 programs. In particular, tests of all measurement and structural equation models were based on the covariance matrix and used maximum likelihood estimation as implemented in EQS 6.1 (Bentler & Hu, 2005). Prior to testing the hypothesized paths among the latent variables, the dimensionality and validity for the measures were tested by a confirmatory factor analysis (CFA). In addition, a two-stage modeling strategy recommended by Anderson and Gerbing (1988) was employed to evaluate the model fit. This strategy first examines the fit of the measurement model alone and then evaluates the fit of the structural equation model (SEM) in addition to the measurement model. Finally, the decomposition of effects derived from the SEM was used to examine direct and indirect relationships among the latent variables.

Results

Psychometric Evaluation of the Measures

An examination of construct validity via a confirmatory factor analysis (CFA) was employed to address psychometric evaluation of the measures. The primary goal of examining construct validity is to determine whether a scale measures the construct that it is supposed to measure as well as the extent which a scale is isolated and not the reflection of other scales (Hair,

Black, Babin, Anderson, & Tatham, 2006). In order to examine the measurement model, the unstandardized loading of the first item was constrained to 1.0 for each latent factor. With 28 items, the model had 406 unique (co)variances available to estimate a total of 71 model-implied (co)variances, so the degrees of freedom were equal to 335.

Table 3.1

Descriptive Statistics of Each Item

Factors	Items	<i>M</i> (<i>SD</i>)	<i>Loadings</i>	<i>AVE</i>	ϕ^2
Functional Quality	Ushers working at the stadium are helpful.	5.89 (1.39)	.76	.62	.24-.51
	People working at the stadium are knowledgeable.	5.66 (1.28)	.90		
	People working at the parking area are courteous.	5.37 (1.46)	.67		
	Ticket takers are courteous.	5.93 (1.23)	.82		
	Concession workers are courteous.	5.62 (1.34)	.75		
Environmental Quality	The stadium is kept clean.	5.53 (1.42)	.71	.43	.21-.64
	The stadium's layout makes it easy to get where I want to go.	5.05 (1.61)	.66		
	The directional signs at the stadium are helpful.	5.37 (1.41)	.74		
	The food services in the stadium are adequate.	4.60 (1.69)	.69		
	The souvenir stands are easily accessible.	5.17 (1.47)	.67		
	There are adequate restroom facilities.	4.21 (1.91)	.56		
	The public address system is easy to understand.	4.87 (1.84)	.49		
The LED signage in the stadium is easy to read.	5.84 (1.37)	.68			
Technical Quality	[University name]ranking adds excitement to the game.	5.61 (1.70)	.66	.69	.16-.29
	The opponent's conference standing adds excitement to the game.	5.84 (1.41)	.83		
	[University name]'s conference standing adds excitement to the game.	5.89 (1.55)	.75		
	The quality of the opponent is important.	5.95 (1.29)	.82		
	The national prominence of the opponent adds excitement to the game.	6.08 (1.28)	.94		
	The opponent's ranking adds excitement to the game.	5.99 (1.33)	.94		
Satisfaction	I am satisfied with my decision to attend [University name]'s games.	6.14 (1.30)	.87	.80	.29-.75
	I am happy with the experiences I have had at [University name]'s games.	5.69 (1.40)	.92		
	I am glad I choose to attend [University name] games.	6.26 (1.29)	.89		
Perceived Service Quality	The services provided at [University name]'s games are excellent.	5.07 (1.56)	.93	.80	.17-.64
	The service at [University name]'s games is outstanding.	5.06 (1.53)	.82		
	I have received high quality services at [University name]'s games.	5.21 (1.45)	.92		
Behavioral Intentions	I would enjoy attending another [University name]home football game.	6.37 (1.24)	.90	.85	.26-.75
	I am likely to attend a game in the future.	6.50 (1.17)	.94		
	I will continue to go to [University name]football games.	6.56 (1.25)	.92		

Evidence of convergent validity was found by calculating average variance extracted (AVE) of each latent construct (Hair, et. al., 2006). For example, a latent construct was considered to possess convergent validity if the AVE was 0.50 or greater (Fornell & Larcker, 1981). As shown in Table 3.1, the AVE estimates ranged from 0.62 to 0.85 for all latent constructs excluding the measure of environmental quality indicating that the measures were considered to exhibit satisfactory convergent validity.

Another evidence of the construct validity can be determined by comparing the AVE with the square of the correlation between the factor and each of the other constructs (Lichtenstein, Netemeyer, & Burton, 1990). As shown in Table 3.1, the AVE for each exogenous latent construct excluding the measure of environmental quality was greater than the squared phi correlations in the measurement model. These findings indicated that that the measures were considered to possess discriminant validity.

Tests of the Measurement Model

As shown in Table 3.2, values of selected fit indices indicated a favorable model fit for the initial measurement model while the results of chi-square estimated that the hypothesis of exact fit was rejected ($\chi^2(335)=3647.196, p < .001$). For example, the Standardized Root Mean Squared Residual (SRMR), one of the absolute fit indices, was .053 and the Root Mean Square Error of Approximation (RMSEA), one of the parsimonious fit indices, was .077, and finally the Comparative Fit Index (CFI), one of the incremental fit indices, was .916.

However, the Lagrange Multiplier (LM) Tests estimated that the model would fit slightly better if two parameters were allowed to be freely estimated. As a result, the final measurement model allowed for adding the covariances of the two pairs of error terms (e.g., E₁₄-E₁₆ and E₂₇-

E₂₈). These modifications were evaluated by the theoretical soundness of freely estimating these parameters and it was concluded that it is theoretically justifiable to estimate these error covariances.

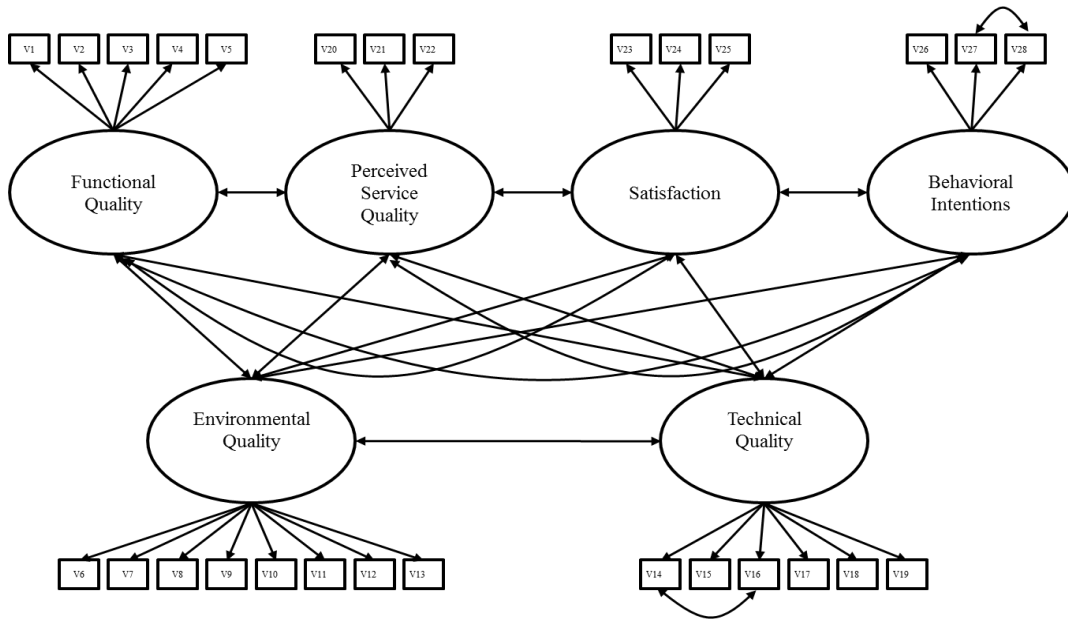


Figure 3.1. The final CFA model.

For example, the two pairs of error covariances that were allowed to freely estimate were, 1) [University name] ranking adds excitement to the game and [University name]’s conference standing adds excitement to the game, and 2) I will continue to go to [University name] football games and I am likely to attend a game in the future. The two sets of items measure similar content, therefore, their error covariances should be allowed to covary. In other words, a schools ranking and conference standing are directly related and thus should be allowed to covary. The same is true for continuing to go games and likely to attend a game in the future.

As shown in Table 3.2, all fit indices for the final CFA model met the recommended values specifying a good model fit to the data (Hu & Bentler, 1999; Kelloway, 1998): χ^2 (333) = 2614.055, $p < .001$, SRMR = .053, RMSEA = .064, CFI = .942. These findings supported the further use of the final measurement model as part of a SEM hypothesizing causal links among latent variables.

Table 3.2

Summary of Fit Indices for the CFA and SEM Models

Model	χ^2	<i>df</i>	CFI	SRMR	RMSEA (90% CI)	AIC
Initial CFA	3647.196	35	.916	.053	.077 (.075, .080)	2977.196
Final CFA	2614.055	33	.942	.053	.064 (.062, .067)	1948.055
Full SEM	2816.105	40	.937	.060	.066 (.064, .069)	2136.105

Tests of the SEM

In the full SEM model the exogenous factors (i.e., Functional, Technical, and Environmental Quality) covariances were freely estimated, but not the three endogenous factors (i.e., Perceived Service Quality, Satisfaction, and Behavioral Intentions). The SEM provided a good fit to the data, χ^2 (340) = 2816.105, $p < .001$, SRMR = .060, RMSEA = .066, CFI = .937(see Table 3.2), and all estimated parameters were significant. Although the results of the LM test recommended model modifications which would provide a slightly better fit to the data, the recommended modifications were not theoretically justifiable. Therefore, no further consideration was given to the inclusion of additional parameters.

Table 3.3

Decomposition of Effects with Standardized Values

Outcome	Predictor	Effects		
		Direct	Indirect	Total
Perceived Service Quality $R^2 = .846$	Environmental Quality	.826		.826
	Functional Quality	.111		.111
Satisfaction $R^2 = .546$	Perceived Service Quality	.506		.506
	Environmental Quality		.418	.418
	Functional Quality		.056	.056
	Technical Quality	.350		.350
Behavioral Intentions $R^2 = .963$	Satisfaction	.963		.963
	Perceived Service Quality		.487	.487
	Environmental Quality		.402	.402
	Functional Quality		.054	.054
	Technical Quality		.337	.337

Decomposition of effects derived from the SEM was shown in Table 3. Behavioral intentions was predicted by satisfaction ($t = 60.931, p < .01$), which in turn was predicted by both perceived service quality ($t = 22.215, p < .01$) and technical quality ($t = 14.628, p < .01$). In particular, the strongest relationship between factors was satisfaction and behavioral intentions, where a one standard deviation increase in satisfaction lead to a .963 standard deviation increase in behavioral intentions, holding all else constant while the significant path coefficient of .506

indicated that the perceived service quality had a stronger positive relationship with satisfaction than those of technical quality.

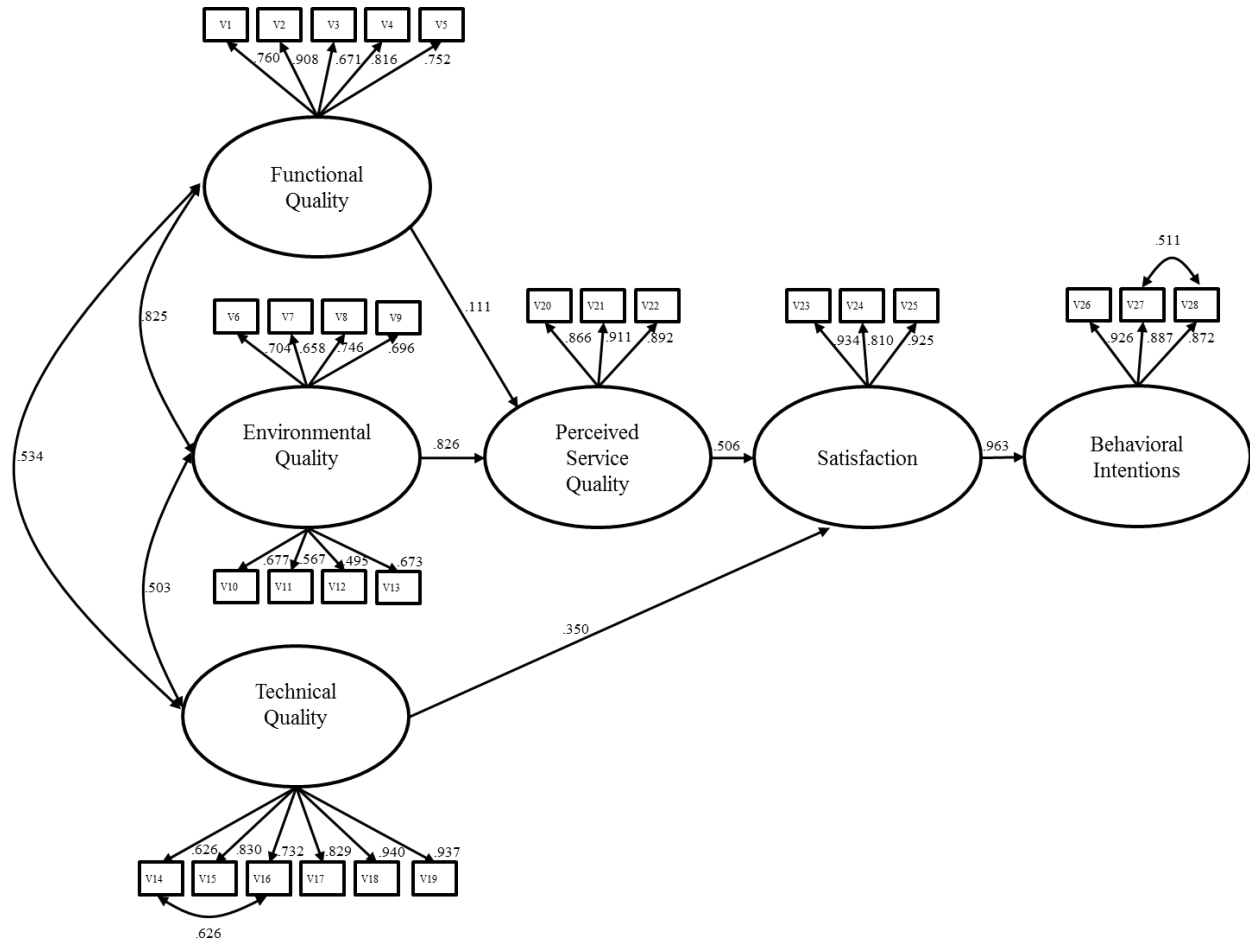


Figure 2. The full SEM model labeled with the standardized effects.

Perceived service quality was also predicted by both environmental quality ($t = 19.838, p < .01$) and functional quality ($t = 3.275, p < .01$), respectively. For instance, a one standard deviation increase in the latent factor environmental quality will lead to a .908 standard deviation increase in perceived service quality as well as a one standard deviation increase in the latent factor functional quality will lead to a .111 standard deviation increase in perceived service

quality, holding all else constant. The SEM explained approximately 96% of the variance in behavioral intentions, 55% of the variance in satisfaction, and 85% of the variance in perceived service quality. Finally, standardized parameter estimates for measurement and structure components are presented in Figure 3.2.

Discussion and Conclusions

Understanding the specific nature of every dimensions of service quality is needed to more fully account for season ticket holders' satisfaction and behavioral intentions. The purpose of the current study was to examine whether the hypothesized model, examining the relationship between the dimensions of service quality and service assessment in consumer response, fits the data adequately. Results of the structural equation model (SEM) supported the hypothesized model fit the data well and all estimated parameters were statistically significant. Although the results of the Lagrange Multiplier (LM) test recommended model modifications, no further consideration was given to the final model due to the lack of the theoretical explanations supporting additional parameters.

Decomposition of the relationships between the dimensions of service quality and service assessment revealed that the dimensions of service quality were significantly associated with the season-ticket holders' cognitive (e.g., perceived service quality), affective (e.g., satisfaction), and behavioral (e.g., behavioral intentions) responses in the context of college football. For instance, functional and environmental aspects of service quality had a significant impact on perceived service quality, respectively, giving support to RH₁ and RH₂, while technical quality had a direct influence on satisfaction, giving support to RH₃. Satisfaction was also directly predicted by perceived service quality, lending support to RH₄ although the indirect effects of both the

environmental and functional quality on satisfaction were also significant, giving support to RH₅ and RH₆.

Findings were consistent with Koo et al. (2008) specifying that the effect of technical quality on satisfaction differed from those of the two other dimensions of service quality (i.e., functional quality and environmental quality). They argued that both the environmental and functional quality had an indirect effect mediated by perceived service quality on satisfaction while technical quality was directly associated with satisfaction.

In the context of sports, it is well documented that the quality of core product has a direct effect on fan satisfaction (i.e., Greenstein & Marcum, 1981; Hansen & Gauthier, 1989; Madrigal, 1995; Schofield, 1983; Zhang et al., 1998). The more attractive technical aspects (i.e., team performance, the quality of opponents, players, coach, rivalry rank, etc.) are associated with the higher consumer satisfaction at the event. This phenomenon was parallel with the study conducted by Leeuwen et al. (2002) indicating a direct relationship between the team performance and fan satisfaction. Technical aspects of service could stimulate a consumer's affective reaction (Koo et al., 2008; Wann & Dolan, 1994) which, in turn, influences his or her satisfaction while functional and environmental aspects of service serve as the determinants of perceived service quality via assessing the performance of experienced services (e.g., Cronin & Taylor, 1992; Oliver, 2010; Zeithaml et al., 1993). Accordingly, in the context of sports, satisfaction seems to be predicted by both the affective (i.e., technical quality) and cognitive (i.e., perceived service quality) judgments in consumer response as sport consumers recognize technical quality in a different manner as compared to functional and environmental quality.

The presence of this incident is also explained by the conceptual difference between perceived service quality and satisfaction. There has been much attention given to the process of

forming perceived service quality and satisfaction in a consumer's mind. For example, Gronroos (1984) viewed perceived service quality as an overall assessment of different service dimensions when product and service outcomes are directly perceived. Oliver (2010) differentiated satisfaction from perceived service quality by defining satisfaction as the summary-state influenced by both cognitive and affective elements in consumer response.

In other words, satisfaction is the end stage of the consumer's information process and is not necessarily affected by immediate product and service outcomes. As a result, affective and cognitive judgments have independent contributions to the formation of satisfaction (Westbrook & Oliver, 1991) while functional and environmental quality may be superior to technical quality in explaining a person's perceived service quality (Kang & James, 2004). The current study demonstrated that the role of technical quality in consumer response should be understood in consideration of the context being examined due to the uniqueness of sport service circumstance and its hedonic value (Koo et al., 2008; Murray & Howat, 2002).

Finally, findings revealed that behavioral intentions was determined by a direct effect of satisfaction, giving support to RH₇ and indirect effects of perceived service quality and technical quality, giving support to RH₈ and RH₉. This is parallel with Oliver (2010)'s theoretical perspective viewing satisfaction, a collective impression of singular events influencing behavioral intentions. A number of studies have revealed that satisfaction is a mediating construct between perceived service quality and behavioral intentions (Koo et al., 2008; Koo et al., 2008; Suh & Pedersen, 2010; Woodside, Frey, & Daly, 1989; Zeithaml et al., 1993).

In particular, the causal relationships of perceived service quality, satisfaction, and behavioral intentions have been explained by a fully mediated and a partially mediated model. The fully mediated model includes two causal relationships: from perceived service quality to

satisfaction; and from satisfaction to behavioral intentions. The partially mediated model includes three causal relationships: from perceived service quality to satisfaction; from satisfaction to behavioral intentions; and from perceived service quality to behavioral intentions. Our findings supported the fully mediated model indicating that only an indirect effect exists between perceived service quality and behavioral intentions through satisfaction. The research conducted by Madrigal (1995) and Koo et al. (2008) were parallel with our findings as well. Madrigal (1995) studied spectators attending college women's basketball events and found that core product quality (i.e., technical quality) was directly associated with spectator satisfaction (e.g., Pan et al., 1997; Trail et al., 2002; Zhang et al., 1997). Koo et al. (2008) demonstrated that perceived service quality and technical quality had an indirect effect on behavioral intentions mediated by satisfaction in women's college basketball.

Service organizations always try to increase consumer satisfaction and achieving fan satisfaction has appeared to be the primary goal for intercollegiate athletics. Therefore, it is important to embrace the mediating effects into the service quality model to explain the relationship between the dimensions of service quality and service assessment in consumer response. Findings derived from the current scrutiny add some interesting aspects to the body of knowledge in the field of sport service marketing and provide the following marketing implications.

Implication for Marketing Practice

This study has several practical implications for administrators in intercollegiate athletics. In the realm of intercollegiate athletics, fan attendance is a major source of revenue and the magnitude of the fan base is undoubtedly critical to any intercollegiate athletic programs.

Approximately, one third of the total revenue has been generated from ticket sales for NCAA Football Bowl Subdivision (FBS) schools (Fulks, 2010). However, the recent economic downturn has caused unstable revenue and inconsistent attendance in college football (Fullerton & Morgan, 2009).

Intercollegiate athletics today makes an effort to deliver quality services in an effective and efficient manner, which subsequently influences an increase of fan attendance at an event and the level of fan enjoyment once at the event. Accordingly, accomplishing competitive advantage in services can strengthen and position intercollegiate athletic programs in the competitive field since one of the main organizational goals for intercollegiate athletics is to remain competitive and profitable. It is a necessary condition for administrators and researchers in the field of intercollegiate athletics to pay much scrutiny to develop the ways of increasing a number of season ticket holders and retaining their continued participations.

In particular, intercollegiate athletics must consider the delivery of quality service in a way that makes it possible for them to develop fan loyalty or repeated consumption. In terms of effective management, it is of great importance to understand whether services offered by the intercollegiate athletics enhance the season ticket holder's experience at a sporting event. Intercollegiate athletic programs need to aggressively attract and reach season ticket holders via allocating more resources toward customer service initiatives. This is because a consumer group of season ticket holders is the significant target population who provides intercollegiate athletics with the highest return on investment (Mullin et al., 2000).

The spectator-employee interaction and the service environment can play a major role in enhancing spectators' satisfaction as they spend an extended period of time observing and experiencing a sporting event. Monitoring the different aspects of service quality for

homogenous groups of fans (e.g., season ticket vs. single ticket; different seat locations) will enable intercollege athletics to deliver proper service to a variety of spectators who place different weights on service attributes. These efforts will lead to additional ticket sales as well as cultivate loyal consumers in intercollege athletics.

The findings also suggested that administrators are challenged to intensify technical quality with value-added benefits as a strategy of sustaining competitive advantage. In the context of sports, technical attributes cannot easily be manipulated by service providers as compared to functional and environmental attributes (Kelley & Turley, 2001; Mullin et al., 2000). It is difficult to retain sustained winning teams in the contemporary sport environments (Gencer, 2011). There can be periods of sustained success but there is no guarantee on the consistency or the success of the product. However, it is the ultimate responsibility of administrators in intercollegiate athletics to hire good coaches, recruit quality student-athletes, and schedule quality opponents because technical quality is a critical element in determining fan satisfaction and attendance. So, technical quality related to team performance might be considered as a pre-determined service, possibly predicted by several objective indices (e.g., recruiting, injured players, previous winning records, etc.); whereas functional and environmental attributes are on-going services utilized throughout the season to attract and retain more fans.

This study can suggest the following salient points: (1) intercollegiate athletics should develop systematic recruiting procedures and training programs for employees because people responsible for service delivery in college sports are often part-time employees; (2) intercollegiate athletics should continuously create an exciting physical environment that could compensate for the unpredictable nature of sporting events; and finally (3) intercollegiate athletics should envision positive or negative influences derived from pre-determined technical

aspects in order to put more weight on the other dimensions of service quality (i.e., functional and environmental quality) for the upcoming season. This could minimize possible loss of fan satisfaction due to the failure of technical quality.

Future Research

This study was designed to examine the effects of service quality on season ticket holders' service evaluation in the context of college football. However, it did not examine the unique features of sport consumers which may help intercollegiate athletics precisely understand their service information processing and evaluations. Issues concerning identification with sport entities, and its influence on perception of service quality can make up a noteworthy contribution in this line of research.

The concept of team identification has played an increasingly important role in explaining sport consumer behavior in the field of sport management (Robinson, Trail, & Kwon, 2004; Trail, Robinson, Dick, & Gillentine, 2003; Gencer, 2011). Tajfel (1981)'s social identity theory addressed that an individual's psychological association with a team could improve one's vicarious achievement by seeing oneself as part of the team (Wann, Melnick, Russell, & Pease (2001). Greenwell, Brownlee, Jordan, and Popp (2008) differentiated sport consumers from others. They contended that an individual emotionally attached to the Boston Red Sox is not likely to become a New York Yankees fan as a consequence of unfavorable services from the Red Sox. However, consumers in other service areas (e.g., retail, restaurant, hotel, etc.) can easily switch their choice if they are not satisfied with the services received from service providers. That was consistent with the perspective of Wann et al. (2001) arguing that team identification in the context of sports did not waver from time to time because of a win or loss.

In relation to the influence of team identification on perceived service quality, sport consumers who are highly identified with a team tend to easily perceive dissatisfied services, while low-identified consumers are likely to recognize satisfied services. This phenomenon may happen as high identification would put consumer evaluations in a more sophisticated fashion (Fiske, Kinder, & Later., 1983). Accordingly, in a high team identification group, consumer behavior might be influenced by more cognitive elements (e.g., functional and environmental quality) than those of affective (e.g., technical quality). On the contrary, in a low team identification group, information processing is usually more holistic, and therefore, consumer evaluations might be significantly influenced by affective factors (e.g., technical quality).

Future research will need not only to examine the effect of team identification on perceived service quality and but also to scrutinize whether consumers who are highly identified with a team utilize a more analytical information-processing strategy and exhibit increased cognitive elaborations due to their involvement with team (Petty, Cacioppo, & Schumann, 1983). These efforts will elucidate the theoretical understanding of the relationship between the dimensions of service quality and service assessment in consumer response in order to deliver quality services in intercollegiate athletics.

CHAPTER FOUR

This chapter discusses crowding out effects of athletic giving on academic giving. A longitudinal design with panel data is employed to examine whether the success of intercollegiate athletics creates crowding out effects on the relationship between academic and athletic giving. There is a need for research taking the direct association between athletic success and athletic giving into account when explaining the relationship between athletic giving and academic giving.

CROWDING OUT EFFECTS OF ATHLETIC GIVING ON ACADEMIC GIVING

Over the past two decades, private giving has been the single most important resource for institutions of higher education, accounting for more than 44 percent of the total gift (Council for Aid to Education, 2011). Although U.S. economy is gradually recovering from a recent recession, charitable contributions to institutions of higher education have increased by 8.2 percent in 2011, reaching \$30.30 billion (Council for Aid to Education, 2011). However, many institutions of higher education are still faced with inexorable pressure from their financial status since “giving accounted for only 6.5 percent of college expenditures in 2011, and giving for current operations, the dollars that can be used immediately to offset current-year expenses, accounted for 3.8 percent of expenditures”(p.1).

The success of intercollegiate athletics has been used as a powerful communication tool that increases good publicity and enhances the university profile, which could in turn result in

favorable private giving. McCormick and Tinsley (1990) contended that “a symbiotic relationship” between athletics and academics exists in institutions of higher education. They argued that the exclusion of athletic programs could negatively affect academic giving due to this symbiotic relationship. In other words, an athletics program can be a substantial communication source of exposure for almost every school in higher education. Roy, Graeff, and Harmon (2008) also suggested that revenue generating sports can produce intangible benefit such as awareness for an institution that would be equivalent to the advertising effects derived from using traditional mass media outlets.

However, there still exists an ongoing controversy in higher education regarding financial benefits of intercollegiate athletics. Previous research focused primarily on the role of successful athletic programs in either alumni giving or total giving, rather than examining the relationship between academic and athletic giving. Although several studies suspected the indirect relationship between academic and athletic giving (Stinson & Howard, 2007; Stinson & Howard, 2008), there still exists a need for research taking the direct association of athletic variables (e.g., athletic success and athletic giving) into account when explaining whether athletic giving crowds out academic giving. The purpose of this study is, therefore, two-fold: to examine whether the current dollars of voluntary support restricted to athletics (e.g., athletic giving) are associated with success in intercollegiate athletic programs; and to explore whether athletic giving crowds out the current dollars of voluntary support restricted to academic purposes (e.g., academic giving). This study was intended to provide empirical evidence of relationships between athletic and academic contribution by properly considering it in econometric models.

The results derived from this study will help decision makers who are responsible for directing policy and budget in both athletic and academic sectors develop “a symbiotic

relationship” between athletics and academics. As private giving is becoming one of the most critical financial resources in higher education, it is important for college and university administrators to carefully evaluate the extent to which a financial amity exists between academics and athletics.

This evaluation would assist administrators in higher education in building an optimal sharing structure of financial resources as well as to better understand donor behaviors as a whole for reducing the controversial gap in private giving for athletics and academics. Further, the findings from this study would serve as the groundwork for the National Collegiate Athletic Association (NCAA) to better scrutinize empirical data regarding the financial role of successful intercollegiate athletic programs in higher education; as well as help them formulate strategies to develop a positive synergetic relationship between athletics and academics for its member institutions that compete in the different divisions.

Financial Benefits of the Successful Intercollegiate Athletics

The literature concerning the financial impact of intercollegiate athletic success on institutions of higher education has shown two varying perspectives that have created an on-going debate in the field of sports economics. For example, Sigelman and Carter (1979) examined the relationship between alumni giving and the success of football/basketball among 9 Division I universities. They concluded that there was no evidence of the association being statistically significant between successful athletic performance and alumni giving. Gaski and Etzel (1984) studied the relationships between football and basketball records and the various giving variables (e.g., total contribution, annuli contribution, non-alumni contributions, etc).

They found insignificant results indicating that there were no relationships between athletic success and alumni contributions.

These findings were also consistent with the study conducted by Turner, Meserve, and Bowen (2001) using 15 private colleges and universities from the NCAA Division IA, Ivy League, and NCAA Division III. They indicated that no significant link existed between football winning percentage and giving at the NCAA Division IA and Ivy League schools. However, a small marginal effect on alumni giving was found at the NCAA Divisions III schools. Finally, a study by Shulman and Bowen (2001) used a sample comprised of 18 private institutions of higher education and examined the relationship between the success of intercollegiate athletics and alumni giving. The major finding was that athletic success addressed by the football winning percentage was an insignificant predictor in private contributions.

On the other hand, a considerable number of studies supporting the positive economic impact of intercollegiate athletic success are worth noting. A study conducted by Brooker and Klastorin (1981) used 58 institutions of major conferences from 1963 to 1971 to examine the link between college athletics and alumni giving. Findings supported a positive association between the percentage of alumni giving and the football winning percentage. This was consistent with Grimes and Chressanthis (1994) study. They employed time-series data from one university to investigate the variations of alumni giving over extended times of athletic success and failure. They found the positive relationship between athletic success and alumni giving indicating that for every one percent increase in the overall winning percentage for athletic programs, alumni giving to academics will increase by about 300,000 dollars.

Rhoads and Gerking (2000) also argued that the success of intercollegiate athletics is associated with academic success. They used both NCAA Division I football and basketball data

from 87 universities and came up with empirical evidence that alumni educational giving is positively regressed on the success of football and basketball programs, especially, a football bowl and an NCAA basketball tournament appearance.

In 2008, a study derived from Stinson and Howard using a total of 208 NCAA Division I-AA and I-AAA schools, revealed that the success of football and basketball programs goes along with both academic and athletic gains in the form of increased private giving. On the other hand, they argued that athletic giving was not a powerful predictor to explain academic giving as the partial correlation, holding other factors constant, was only .155. They also asserted that this phenomenon was due to the indirect relationship between academic and athletic giving. Accordingly, both the effects of athletic success and the current dollars of voluntary support restricted to athletic purpose could be considered simultaneously to better explain the relationship between athletic giving and academic giving.

In conjunction with the aforementioned debate, a number of researchers and administrators in higher education have suspected crowding out effects of athletic giving on academic giving, as many donors directly restrict their giving to certain areas. Crowding out effects are considered to be any decrease in academic contributions that occurs due to an increase in athletic contributions. In other words, if athletic giving is accompanied by the success of athletic programs, giving to athletics would be increased, which would lead to a decrease in academic giving. Therefore, it would be worthwhile to explore how athletic giving and the success of intercollegiate athletic programs affect academic giving. Based on the foregoing discussion, the following research questions (RQ) have been developed.

- RQ₁: Are the current dollars of voluntary support restricted to athletics influenced by the one-year lag in football winning, basketball winning, and athletic giving?

- RQ₂: Are intercollegiate athletic success and athletic giving associated with a significant decrease in the current dollars of voluntary support restricted to academic purposes?

Method

Data

The study used a balanced panel dataset from 155 universities that have competed in Division I, II, and III and have fielded both football and basketball teams over a 10 year period from 2002 to 2011. This dataset contained 1,550 observations and a set of variables representing academic and athletic financial status, academic characteristics, and athletic success of each institution as well as specifying economic condition. A panel dataset is often useful because it provides more data points, and accounts for economic effects that cannot be addressed with the use of either cross-section or time series data alone (Pindyck & Rubinfeld, 1998). Therefore, the panel dataset for this study allows scrutiny of the variation in the giving to different institutions at a particular point in time. Details of each variable included in the model were as follows.

Giving. All giving data were obtained from the database of the Council for Aid to Education (e.g., <http://www.cae.org>) in order to examine the crowding out effects of private giving to athletics on those of academics. The Council for Aid to Education (CAE) is a national non-profit organization whose role is to provide empirical data on various giving in the institutions of higher education derived from the annual Voluntary Support of Education (VSE) survey. The CAE database has been also utilized as a reliable resource for the previous studies (e.g., Badde & Sundberg, 1996; Cunningham & Conchi-Ficno, 2002; Gottfried & Johnson, 2006; Rhoads & Gerking, 2000). Therefore, in this study, the academic giving was calculated by aggregating the dollars of voluntary support restricted to academic purposes while the athletic

giving was considered as the current dollars of voluntary support restricted to athletic purpose from individuals. Neither was associated with contributions from charitable foundations, business, and religious organizations.

Athletic factors. In order to examine the effects of intercollegiate athletic success on both academic and athletic giving, data were collected from the NCAA website (e.g., <http://www.ncaa.org/stats>). This website has compiled statistics for college sports since the early 1940s. This study employed the school's winning percentages for football and the men's basketball, because it has been considered one of the most popular measures representing overall athletic success during season (e.g., Brooker & Klastorin, 1981; Grimes & Chressanthis, 1994; McCormick & Tinsley, 1990; Tucker, 2004). Although previous studies have often incorporated two and three measures (e.g., post-season appearance, end-of-season rankings, and winning percentage for each sport) into their econometric models to evaluate the relationship between the success of intercollegiate athletics and alumni giving, this study exclusively employed winning percentage, in order to avoid possible multicollinearity issues that often occur when multiple measures are being used.

University-specific factors. The total number of students enrolled was considered to be one of the university-specific factors that affect the level of academic giving. This was primarily because when an institution has more students, there is a higher probability of having successful alumni that can financially support their alma mater. Student enrollment data for an institution consist of a total university student headcount for the fall academic semester, which is obtained from the database of the CAE (Tucker, 2004). The second factor was the quality of a school which could positively affect academic giving. An academic reputation score that is annually announced in the U.S. News and World Report was used to evaluate the academic quality of

each institution. An average 4-year graduation rate was also added to the model as the third factor since the higher graduation rate an institution has the more quality graduates the school produces (Tucker, 2004).

Finally, the macroeconomic data of per capita personal income by state were used to control the economic conditions of respective institutions during a specific time period, which could affect the overall giving patterns of donors. This measure of income was calculated as the total personal income of the residents of an area divided by the population of the area. Data was obtained from the database of the “Federal Reserve Bank of St. Louis” (e.g., <http://research.stlouisfed.org>) which compiles federal and state statistics explaining a variety of economic circumstances. In particular, the primary reason for employing state level personal income data rather than using national level is to better represent the economic status of the residents of a state.

Empirical Model

The study employed fixed effects models that allow for the examination of whether athletic giving creates crowd-out effects on academic giving. The main advantage of using fixed effects methods is the increased ability to control for unobservable individual-specific (e.g., schools) heterogeneity, thereby eliminating potentially large sources of bias. The effects of the successful intercollegiate athletic programs and athletic giving on the current dollars of voluntary support restricted to academic purposes were estimated by the following econometric model:

$$Y_{it} = C_0 + \lambda_i + \sum \beta_i X_{it-1} + \sum \gamma_i Z_{it} + \epsilon_{it}$$

where Y_{it} indicates the current dollar amounts restricted to academic purposes (e.g., academic giving) in academic year t for a particular university i which is the dependent variable; C_0 is a

constant term; λ_i is unobserved institution-specific effects. Specifically, the vector of athletic variables, $\sum \beta_i X_{it-1}$, include the one year lagged athletic giving, football winning percentage, and men's basketball winning percentage. In addition, the vector of academic variables, $\sum \gamma_i Z_{it}$, includes the number of students enrolled, the school ranking, the average 4-year graduation rate, and per capita personal income in academic year t for a particular university i . Finally, β_i and γ_i are coefficients for the independent variables while ε_{it} indicates the error term.

Data Analysis

The analysis of panel data was performed using the EViews 6.0 program. Fixed effects models were used to examine how the current changes in athletic success influence athletic giving and to investigate whether the current dollars of voluntary support restricted to athletic purpose crowds out the current dollars restricted to academic purposes. In particular, a two-stage modeling strategy recommended by Stinson and Howard (2007) was employed to evaluate the crowding out effects of athletic giving on academic giving.

In the first stage, the fixed effects model contained only university specific variables to explain the current dollars of voluntary support restricted to academic purposes while athletic variables were entered into the respective fixed effects models in the second stage. The use of this particular strategy allows scrutiny of the impact of athletic giving derived from successful athletic performance on giving restricted to academic purposes, rather than comparing different models (Stinson & Howard, 2007).

Results

Descriptive Statistic

Academic giving and athletic giving over the period 2002- 2003 to 2011-2012 were extracted from the annual VSE survey reported by a total of 155 institutions. Table 1 revealed an average dollar amount in both academic and athletic giving divided by an average number of enrolled students over 10 years across institutions. Rhoads and Gerking (2000) recommended that private giving scaled by the number of enrolled students could control for university size. A ten-year average of academic giving ranged from \$9,063.29 (i.e., Stanford University) to \$14.12 (i.e., Assumption College) and that of athletic giving ranged from \$1,121.83 (i.e., Wake Forest University) to \$1.67 (i.e., Millersville University of Pennsylvania), respectively.

In addition, the average total academic giving during the 2002-2003 and 2011-2012 academic years was slightly over \$6.4 million while that of athletic giving was about \$2.2 million for institutions in the sample. Of the total 155 sampled institutions, the number of NCAA Division I, II, and III schools were 64, 23, and 68, respectively. Slightly more than half were private ($n = 80$ or 51.61%) and the average enrollment was 14,309 students. The average winning percentage for football was about .50 percent and that of basketball was .55 percent across the 155 intuitions while the average per capita personal income representing economic status was slightly over \$36,807. Although both academic and athletic giving demonstrated considerable variation among the sampled schools, giving data were not transformed into the natural logarithm due to the interpretational difficulties of findings.

Table 4.1

Descriptive Statistic

Division	Institutions	Average 10 Year Academic Giving/ Enrollments	Average 10 Year Athletic Giving/ Enrollments
Division I	Arizona State University	\$243.71	\$105.13
	Arkansas State University	\$155.95	\$56.94
	Auburn University	\$518.84	\$329.59
	Ball State University	\$169.43	\$35.04
	Baylor University	\$251.61	\$219.33
	Boise State University	\$98.93	\$107.42
	Boston College	\$306.58	\$357.09
	Brigham Young University	\$487.06	\$107.30
	Central Michigan University	\$108.17	\$22.26
	Duke University	\$1,341.39	\$750.82
	East Carolina University	\$103.34	\$152.39
	Georgia Institute of Technology	\$355.30	\$392.88
	Iowa State University	\$261.97	\$148.78
	Kansas State University	\$689.46	\$113.01
	Kent State University	\$104.72	\$11.32
	Louisiana Tech University	\$129.79	\$88.02
	Michigan State University	\$297.77	\$219.99
	Mississippi State University	\$170.49	\$472.17
	New Mexico State University	\$82.44	\$12.48
	Ohio State University	\$376.43	\$221.80
	Oregon State University	\$339.73	\$450.47

Pennsylvania State University	\$302.11	\$25.31
Rice University	\$1,582.69	\$332.38
Rutgers University	\$255.66	\$45.94
San Diego State University	\$360.65	\$72.32
San Jose State University	\$86.07	\$26.14
Stanford University	\$9,063.29	\$55.10
Syracuse University	\$790.63	\$1.72
Texas A & M University	\$241.09	\$309.03
Texas Christian University	\$166.05	\$322.79
University of Akron	\$99.20	\$21.23
University of Alabama at Birmingham	\$421.49	\$67.57
University of Arizona	\$730.86	\$140.80
University of Arkansas	\$179.69	\$511.47
University of California-Berkeley	\$898.53	\$191.69
University of California-Los Angeles	\$816.07	\$153.51
University of Cincinnati	\$277.36	\$106.30
University of Georgia	\$232.82	\$567.00
University of Iowa	\$467.60	\$282.94
University of Kansas	\$415.80	\$345.32
University of Louisville	\$166.06	\$505.68
University of Maryland-College Park	\$295.36	\$272.60
University of Michigan-Ann Arbor	\$1,121.89	\$139.85
University of Minnesota-Twin Cities	\$226.83	\$30.62
University of Nebraska-Lincoln	\$548.24	\$26.59
University of Nevada-Las Vegas	\$137.30	\$79.62
University of Nevada-Reno	\$189.21	\$109.25

	University of New Mexico	\$259.33	\$78.85
	UNC at Chapel Hill	\$1,042.49	\$409.29
	University of Notre Dame	\$1,398.56	\$92.68
	University of Oregon	\$565.02	\$450.61
	University of Pittsburgh	\$278.22	\$94.62
	University of South Carolina	\$209.92	\$219.84
	University of South Florida-Tampa	\$132.43	\$37.91
	University of Texas at Austin	\$378.94	\$442.83
	University of Tulsa	\$722.83	\$500.38
	University of Virginia	\$1,514.09	\$847.70
	University of Wyoming	\$216.67	\$159.05
	Utah State University	\$123.46	\$10.43
	Vanderbilt University	\$2,491.41	\$39.02
	Virginia Tech.	\$416.65	\$352.84
	Wake Forest University	\$1,020.25	\$1,121.83
	West Virginia University	\$329.91	\$216.11
	Western Michigan University	\$108.08	\$18.90
Division II	Abilene Christian University	\$289.68	\$51.17
	Assumption College	\$14.24	\$25.99
	Bemidji State University	\$26.89	\$40.90
	California University of Pennsylvania	\$28.74	\$3.82
	Clarion University of Pennsylvania	\$37.85	\$5.12
	Elizabeth City State University	\$118.21	\$6.11
	Ferris State University	\$36.59	\$11.31
	Gannon University	\$28.03	\$11.07
	Humboldt State University	\$213.71	\$19.94

	Indiana University of Pennsylvania	\$34.19	\$2.99
	Lock Haven University	\$59.38	\$28.09
	Mercyhurst College	\$99.87	\$8.99
	Millersville University	\$15.78	\$1.67
	Minnesota State University-Mankato	\$122.35	\$11.67
	Saint Cloud State University	\$29.15	\$7.34
	Shippensburg University	\$68.71	\$23.11
	Slippery Rock University	\$69.79	\$9.91
	Southern Connecticut State University	\$16.67	\$6.73
	Texas A & M University-Commerce	\$30.38	\$3.45
	University of Indianapolis	\$95.76	\$58.77
	University of New Haven	\$166.02	\$13.45
	University of West Georgia	\$20.78	\$2.86
	West Chester University	\$37.52	\$3.05
Division III	Alfred University	\$330.83	\$16.55
	Allegheny College	\$687.11	\$47.36
	Amherst College	\$426.23	\$181.82
	Augsburg College	\$76.38	\$20.18
	Bates College	\$399.15	\$68.39
	Bethany College	\$960.83	\$48.09
	Bowdoin College	\$2,458.62	\$165.68
	Carleton College	\$666.37	\$7.68
	Catholic University of America	\$254.53	\$20.73
	Chapman University	\$758.12	\$55.23
	Colby College	\$1,341.61	\$87.67
	Concordia College at Moorhead	\$186.58	\$11.49

Concordia University-Wisconsin	\$71.16	\$4.43
Denison University	\$181.00	\$27.56
DePauw University	\$372.37	\$12.76
Emory and Henry College	\$1,481.07	\$86.99
Eureka College	\$269.99	\$33.76
Frostburg State University	\$32.43	\$6.50
Gettysburg College	\$289.85	\$99.86
Grinnell College	\$361.10	\$10.71
Guilford College	\$83.82	\$35.19
Gustavus Adolphus College	\$209.78	\$35.36
Hamilton College	\$357.22	\$77.05
Hartwick College	\$118.87	\$130.89
Ithaca College	\$81.90	\$28.08
Kenyon College	\$506.52	\$8.97
Knox College	\$209.70	\$20.05
Lake Forest College	\$395.29	\$19.94
Lawrence University	\$1,007.46	\$15.10
Lebanon Valley College	\$108.27	\$34.64
Loras College	\$476.38	\$23.83
Lycoming College	\$87.89	\$35.35
Macalester College	\$167.81	\$42.44
MacMurray College	\$544.99	\$33.52
Manchester College	\$134.39	\$75.97
Marietta College	\$181.45	\$58.94
McDaniel College	\$64.03	\$16.25
Middlebury College	\$2,242.90	\$63.28

Millsaps College	\$879.97	\$143.54
Moravian College	\$166.36	\$86.71
North Central College	\$893.00	\$58.88
Ohio Northern University	\$74.73	\$12.93
Ohio Wesleyan University	\$407.59	\$67.54
Pacific Lutheran University	\$226.32	\$14.84
Rhodes College	\$182.16	\$59.56
Ripon College	\$613.11	\$57.03
Rowan University	\$56.77	\$4.05
Saint Johns University	\$756.11	\$31.22
Salisbury University	\$107.15	\$11.45
Shenandoah University	\$129.14	\$18.18
St Lawrence University	\$975.63	\$65.74
St. Olaf College	\$137.54	\$29.15
SUNY College at Brockport	\$34.17	\$5.83
SUNY College at Cortland	\$18.85	\$10.29
Susquehanna University	\$293.82	\$27.14
Trinity College	\$727.51	\$205.04
Union College	\$416.42	\$111.05
University of Chicago	\$2,369.62	\$2.52
Ursinus College	\$559.11	\$37.93
Wabash College	\$561.01	\$24.93
Washington & Jefferson College	\$562.19	\$57.56
Wesleyan University	\$1,053.63	\$66.23
Westminster College	\$276.88	\$77.62
Wheaton College	\$473.89	\$45.42

Willamette University	\$345.20	\$43.66
Williams College	\$430.99	\$47.28
Wittenberg University	\$264.88	\$55.06
Worcester State University	\$21.20	\$4.01

Effects of Athletic Performance on Athletic Giving

The first research question examined whether the current dollars of voluntary support restricted to athletics are associated with success in intercollegiate athletic programs and athletic giving. In particular, the one-year lag in the variables of athletic performance and athletic giving was employed to evaluate the current dollars of voluntary support restricted to athletics as “most athletic gifts are made early in the school year, prior to the start of most teams’ seasons” (Meer & Rosen, 2009, p. 289). Meer and Rosen (2009) examined both current and lagged athletic success and found that lagged athletic success had more explanatory power than current athletic success. Rhoads and Gerking (2000) also argued that participation in a bowl game in one year might stimulate the dollars of voluntary support in the next year. Accordingly, the one-year lagged athletic variables (e.g., football winning, basketball winning, athletic giving) were placed into the econometric model to explain the current dollars of voluntary support restricted to athletics.

Random effects specifications of equation were rejected by Hausman tests: $\chi^2 (1395, 3) = 565.00, p < .000$. The results revealed that the unobserved time-invariant characteristics for each school were correlated with explanatory variables. Thus, fixed effects specifications of equation were employed to explain the current dollars of voluntary support restricted to athletics. As shown in Table 4.2, results of the fixed effects model identified that the one year lagged football

winning percentage ($t = 2.47, p = .01$) and athletic giving ($t = 101.07, p = .000$) were significant determinants in predicting the current dollars of voluntary support restricted to athletics after removing heterogeneity among universities.

Table 4.2

Effects of Athletic Performance on Athletic Giving

Variable	Effect Estimate	Std. Error	<i>t</i>	<i>p</i>
Constant	-202416.2	134729.9	-1.50	0.133
Football Winning (-1)	452118.1	153809.9	2.93	**0.003
Basketball Winning (-1)	270469.2	197246.6	1.37	0.170
Athletic Giving (-1)	0.997278	0.008586	116.15	***0.000

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$

For example, for every 1% increase in football winning, the current dollar amounts restricted to athletic purpose will increase by approximately \$452,000, holding other explanatory variables constant, although basketball winning was not statistically significant at the .05 level. Results also revealed that for every one dollar increase in athletic contribution in the previous year, the current dollars of voluntary support restricted to athletics will increase by almost the same amount. These findings also suggested that lag correlation might exist in athletic contribution.

Crowding Out Effects of Athletic Giving on Academic Giving

The second research question examined whether intercollegiate athletic success and athletic giving are associated with a significant decrease in the current dollars of voluntary support restricted to academic purposes. In particular, a two-stage modeling strategy recommended by Stinson and Howard (2007) was used to examine the crowding out effects of athletic variables. This approach was considered to directly securitize the effects of athletic variables on the current dollar amounts of academic giving, rather than to compare academic and athletic econometric models (Stinson & Howard, 2007).

As shown in Table 4.3, the first fixed effects model contained only university specific variables to predict the current dollars of voluntary support restricted to academic purposes. Results of the Hausman tests indicated that random effects specifications of equation were rejected at the .05 level: $\chi^2(1550, 4) = 20.13, p < .000$. The results revealed that the source of university-specific heterogeneity was correlated with explanatory variables. Thus, the fixed effects model was utilized to explain the relationships between university specific variables and current voluntary support restricted to academic purposes.

Results of the fixed effects model indicated that the total number of current student enrollment, the average 4-year graduation rate, and the school ranking were significant predictors for the current dollars of voluntary support restricted to academic purposes after removing heterogeneity among universities although per personal capita income by state was not statistically significant at the .05 level. For example, the positive effect of enrollment on academic giving, significant at the .05 level ($t = 7.12, p < .001$), resulted in an estimated change of about \$405 in the current dollars of voluntary support restricted to academic purposes for every one student increase in enrollment, controlling for the other variables. The effect of the

average 4-year graduation rate was also significant at the .05 level ($t = 2.95, p = .003$). The results indicated that an estimated change of approximately \$116,000 was associated with every one percent increase in graduation rate, controlling for the other variables. The positive effect of school ranking on academic giving, significant at the .05 level ($t = 3.20, p = .014$), revealed an estimated change of approximately \$3.95 million in the current dollars of voluntary support restricted to academic purposes for every unit change in school ranking, controlling for the other variables.

Table 4.3

Effects of Academic Variables on Academic Giving

Variable	Effect Estimate	Std. Error	<i>t</i>	<i>p</i>
Constant	-20132530	5372918.	-3.74	***0.000
Enrollment	405.4506	56.91354	7.12	***0.000
Graduation Rate	116365.2	39363.45	2.95	**0.003
Personal Income	23.80821	98.16761	0.24	0.808
Ranking	3948312	1230950	3.20	**0.001

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$

The second fixed effects model included the one year lagged athletic giving and performance in addition to the university specific variables in order to examine whether athletic factors crowd out the current dollars of voluntary support restricted to academic purposes.

Hausman statistics on the random effects estimates of equations were statistically significant: χ^2 (1395, 7) = 25.40, $p=.000$. Results suggested that the unobserved time-invariant characteristics for each school were correlated with explanatory variables. Accordingly, the fixed effects model was preferred to the random effects model in this study.

Table 4.4

Effects of Academic and Athletic Variables on Academic Giving

Variable	Effect Estimate	Std. Error	<i>t</i>	<i>p</i>
Constant	-20385087	5509553.	-3.69	***0.000
Enrollment	329.5814	60.45895	5.45	***0.000
Graduation Rate	99625.44	39372.15	2.53	*0.011
Personal Income	69.16991	99.00777	0.69	0.484
Ranking	3697170	1216950	3.03	**0.002
Football Winning (-1)	1545881	713437.4	2.16	*0.030
Basketball Winning (-1)	-418819.3	898265.3	-0.46	0.641
Athletic Giving (-1)	0.483232	0.082244	5.87	***0.000

Notes. * $p<.05$, ** $p<.01$, *** $p<.001$

As shown in Table 4.4, results of the fixed effects model indicated that all academic variables (e.g., enrollment, graduation rate, and school ranking) excluding per capita income

were positively associated with the current dollars of voluntary support restricted to academic purposes, statistically significant at the .05 level.

For example, the effect of enrollment on academic giving was statistically significant at the .05 level ($t = 5.45, p < .001$), resulting in an estimated change of about \$329 in current voluntary support restricted to academic purposes for every one student increase in enrollment, holding other explanatory variables constant. The effect of graduation rate on academic giving was statistically significant at the .05 level ($t = 2.53, p = .011$). The result indicated that an estimated change of approximate \$100,000 was associated with every one percent increase in an average 4-year graduation rate, holding other explanatory variables constant. The effect of school ranking on academic giving was also statistically significant at the .05 level ($t = 3.03, p = .002$). The results specified that an estimated change of approximately \$3.7 million in the current dollars of voluntary support restricted to academic purposes for every one unit (e.g., .1 point) increase in school ranking, controlling for the other variables.

Regarding a set of athletic variables, results of the fixed effects model indicated that the one year lagged football winning percentage and athletic giving were significant determinants in predicting the current dollars of voluntary support restricted to academic purposes while basketball winning percentage was not statistically associated with academic contribution ($t = -.46, p = .64$). For example, the effect of football winning on academic giving was significant at the .05 level ($t = 2.53, p = .011$), indicating that for every 1% increase in football winning during the previous season, the current dollar amounts restricted to academic purposes will increase by approximately \$1.5 million, holding other explanatory variables constant. The effects of athletic giving on academic giving was also statistically significant at the .05 level ($t = 5.87, p < .000$). The results revealed that for every one dollar increase in athletic contribution during the

previous season, the current dollars of voluntary support restricted to academics will increase by about 48 cents.

Discussion and Conclusions

The current study has analyzed how the variation in the performance of intercollegiate athletic programs influences the current dollars of voluntary support restricted to athletic purpose and has scrutinized whether athletic giving crowds out academic giving. First, findings from fixed effects analyses of panel data for the period of 2002-2003 to 2011-2012 revealed that the variation in football winning percentage, not surprisingly, had a significant impact on the current dollars of voluntary support restricted to athletic purpose. The one-year lagged football winning percentage and athletic giving were significant determinants in predicting the current dollars of voluntary support restricted to athletics. Findings were equivalent to the study conducted by Meer and Rosen (2009) indicating the one-year lagged athletic success had more explanatory power than current athletic success in explaining athletic giving. Rhoads and Gerking (2000) also supported this phenomenon by stating that a bowl game participation in one year might stimulate the next year contribution.

Findings indicated that every 1% increase in football winning percentage in the previous year was associated with an increase of approximately 452,000 dollars in athletic giving. Also, every one dollar increase in the one year lagged athletic giving was related to the current dollars of athletic giving at the nearly same rate. These findings were consistent with a number of previous studies (e.g., Brooker & Klastorin, 1981, Grimes & Chressanthi, 1994; Rhoads & Gerking, 2000; Stinson & Howard, 2008) supporting the notion that private contributions are positively regressed on the success of intercollegiate athletic programs. Especially, the

coefficient on football winning indicated a smaller significant impact as compared to the previous research (c.f., Humphreys, 2006). This could occur when the current study focused primarily on the role of athletic performance on the current dollars of voluntary support restricted to athletic purpose rather than those in total giving, which contained both academic and athletic contributions. Football winning percentage has led the relatively increase in athletic giving, consistent with findings derived from Grimes and Chressanthis (1994) and Tucker (2004).

Second, a two-step modeling strategy (Stinson & Howard, 2007) was employed to examine the crowding out effects of athletic variables on the current dollars of voluntary support restricted to academic purposes. Both fixed effects models provided the same patterns of the effects of university specific variables on academic giving. Not surprisingly, all academic variables (e.g., enrollment, graduation rate, and school ranking), excluding per capita income, were positively associated with the current dollars of voluntary support restricted to academic purposes. In addition to university specific variables, the one year lag in football winning and athletic giving were considered as significant explanatory variables in predicting the current academic giving. However, basketball winning percentage was not associated with the current dollar amounts that were restricted to academic purposes.

Findings revealed that for each student increase in enrollment, there was an associated estimated change of about \$405 of voluntary support restricted to academic purposes. Humphreys and Mondello (2006) specified that the higher the number of students enrolled, the more alumni could be produced over time which, in turn, increased the probability of financial support for a particular university in higher education. Their perspective was consistent with Grimes and Chressanthis (1994) specifying that “academics are positively related to the number of potential alumni donors” (p. 35). In addition, one percent increase in graduation rate caused an

estimated change of approximately \$116,000 in academic giving while every unit change in school ranking resulted in an estimated change of \$394,000, respectively. Similar results were found in the study addressed by McCormick and Tinsley (1990). They argued that the quality of academic programs is related to the careers of the alumni who are known as the primary resource for academic giving. Therefore, it is obvious that there is a higher probability of producing successful alumni that can financially support their alma mater when an institution continues to maintain the higher academic reputation.

On the other hand, the current study did not find any significant impacts of per capita income on academic giving although the positive and significant coefficient of personal income was expected. Grimes and Chressanthis (1994) highlighted that healthy economic conditions could enhance the ability of individuals to contribute increased voluntary support for academics. McCormick and Tinsley (1990) also indicated that there existed a positive and significant association between personal income status and voluntary contribution. However, this phenomenon might not have happened in this study because the time periods used for analyses were mostly under economic stagnation and its significance was sensitive to model specification as well.

Finally, findings clearly revealed evidence that athletic giving had “no” crowding out effects on academic giving. As the coefficients on athletic giving and football winning percentage were statistically significant from zero, there was a significant and positive causal relationship between athletic factors and academic giving. For example, the coefficient on athletic giving implied that for every one dollar increase in athletic giving, the current dollars of voluntary support restricted to academic purposes will increase by 48 cents. The coefficients on football winning percentage identified that for every 1% increase in football winning percentage,

the current dollars of volunteer support restricted to academics will increase by approximately \$1.5 million.

Findings were consistent with the perspective derived from McCormick and Tinsley (1990) supporting “a symbiotic relationship” between athletics and academics. They argued that the exclusion of athletic programs could negatively affect the current dollars of volunteer support restricted to academics in institutions of higher education due to the symbiotic relationship between athletics and academics. Successful athletic programs are able to create substantial exposure for schools in higher education, which is equivalent to the advertising effects derived from using traditional mass media outlets (Roy, Graeff, & Harmon, 2008). As a result, a spillover benefit (Grimes & Chressanthis, 1994) rather than crowding out effects exists in the relationships between athletic factors and academic giving. Findings from the current study evidently supported spillover effects of athletic giving on academic giving.

The current study was intended to make three specific contributions to the existing body of literature. First, the study focused on distinguishing private contributions into both academic and athletic giving. This approach allowed for proper examination of the crowding out effects that athletic giving had on academic giving; which differed from most of the previous studies that have typically focused on alumni giving as a whole. Second, in order to examine the association between athletic factors (e.g., football winning percentage, basketball winning percentage, and athletic giving) and the current dollars of voluntary support restricted to academic purposes, the one-year lagged athletic performance and athletic giving were considered in the current econometric models. Several studies indicated that lagged athletic success had more explanatory power to explain the current private donations. (Meer & Rosen, 2009; Rhoads & Gerking, 2000). The contribution could provide empirical evidence to clarify an uncertain

financial relationship between athletics and academics in institutions of higher education. The last contribution provided by this study was the employment of fixed effects models to control for university-specific heterogeneity. This method could eliminate potential bias for the model when unobservable specific-fixed effects might be correlated with independent variables or error term (Ashenfelter, Levine, & Zimmerman, 2003).

Limitation and Future Research

The current study has limitations that provide important guidelines for future investigations although the study provides critical insights on the subject of the crowding out effects of athletic giving on academic giving. First, the use of balanced panel data composed of a relatively small number of cross-sectional and time observations can cause an issue of generalization. Second, institutional heterogeneity can often affect the relationships among the success of intercollegiate athletics, athletic giving, and academic giving. For instance, the institutional fundraising system has been classified into two distinct structures. Some institutions autonomously operate athletic fundraising programs within the intercollegiate athletic department, while other athletic fundraising programs are nested in the institutional-level unit (e.g., department of development).

Third, the association among athletic performance, athletic giving, and academic giving can be varied across the levels of NCAA competition. Baade and Sundberg (1996) indicated that the success of the intercollegiate athletic department is more significantly related to the annual giving in Division III institutions as opposed to the other Divisions. However, as including fixed effects (e.g., group dummies) soaked up all the across-school differences in any observable or unobservable predictors (Plumper & Troeger, 2007), the present model determined by Hausman

statistics could not permit another dummy available to examine effects of NCAA Divisions. Also, due to the difference in the total number of sampled schools in each division, the calculated statistic may be subjugated by the variances for Division III schools. Thus, the test is less likely to correctly identify significant differences in NCAA Divisions even though the different model (e.g., random effect models) would be employed to examine the relationships between athletic giving and academic giving across NCAA Divisions.

It is a necessary condition to develop proper econometric models taking the direct association with other important time-invariant variables into account when explaining the relationships of the current dollars that are restricted to athletics and academics. For instance, future studies will continue to explore whether the NCAA divisions and the institutional fundraising system affect the dollars of voluntary support for athletics and academics. Particularly, the use of a large data set will allow for the development of a robust econometric model. It will also provide more details regarding a donor's giving pattern if future research can utilize micro-level time data (e.g., individual donor data for several decades) in order to analyze the crowding out effects of athletic giving and properly provide future directions for giving campaigns.

In addition, one of our findings suggested that lag correlation might exist in giving data while autocorrelation is a mathematical tool for finding repeating patterns (Weisang & Awazu, 2008). Accordingly, there exists a need for determining the appropriate lags in giving data by using an autoregressive model (AR) or an autoregressive moving average (ARMA) model. This effort will assist researchers in the field of sport management to provide an improved econometric model meeting statistical parsimoniousness.

Finally, although this study is not able to explain the complexity of crowding out effects of athletic giving, it is a preliminary step in understanding athletic related variables that captures the crowd-out effect when one estimates the association between athletic and academic giving. This effort will expand our knowledge base and provide more accurate information for administrators in higher education who are in charge of directing policy and budget in both athletic and academic areas. It is hoped that this study will serve as practical evidence to formulate strategies for a positive symbiotic relationship between athletics and academics.

CHAPTER FIVE

This chapter discusses how the studies implemented in the previous chapters can advance academic research in the field of sport management, as well as resolve the issue of diversity in methodology. In particular, the importance of pursuing experimental and longitudinal research designs is discussed to fill the gap in positivistic and quantitative methods in sport management research.

CONCLUSIONS

Research is a logical and systematic process of gathering and analyzing new and useful information on an individual interest (McMillan, 1999). It is a necessary condition for a researcher to decide an appropriate method for the chosen problem and to consider the efficiency of the research methodology. Researchers in the field of sport management have often critiqued the lack of diversity in research settings (e.g., Barber et al., 2001; Olafson, 1990; Dittmore et al., 2007; Parks et al., 1999; Paton, 1987). Dittmore et al. (2007) indicated that the literature concerning the lack of diversity in methodology and the lack of diversity in topic areas has created an on-going debate in the field of sport management. This chapter, therefore, discusses how the selected studies implemented in this dissertation are related to the issues of the diversity in methodology. This can contribute to the emerging body of research by filling the gap in positivistic and quantitative methods in the field of sport management. A comprehensive understanding of the various research methods is noteworthy for sport management scholars to explain details of the psychological understanding of sports consumer behavior and to predict the

current large-scale sport phenomena often led by substantial data, although most studies rely heavily on cross-sectional survey designs.

A number of scholars have addressed how embracing a variety of research designs can enhance scholarship in sport management as an academic discipline (e.g., Costa, 2005; Olafson, 1990; Parks, 1992; Parkhouse, 2005; Pitts, 2001). Olafson (1990) contented that sport management research should pay more attention to exploring various research methods while Costa (2005) suggested that the quality of the research designs could parsimoniously strengthen sport management research. In particular, the studies employed in this dissertation demonstrate the proper application of various research designs concerning the characteristics of data.

First, one research design outlined in this dissertation was an experimental design to examine differences in the source credibility based on an athletic endorser's on-field performance. Although experimental research is a prevalent type of research, there has been relatively little attention given to experimental designs in the field of sport management. The primary goal of using experimental research design is to examine causal relationships by manipulating treatment conditions (Isaac & Michael, 1981). Much of the significant gain in knowledge in the area of sport management can be accomplished by actively manipulating certain consumer behaviors or settings (e.g., variables). For example, a specific condition manipulated in this study was good or bad athletic performance in order to explore whether or not the sport celebrity's on-field success affects individual dimensions of source credibility. Two treatments were developed and each participant was randomly assigned to only one treatment: either good or bad performance scenario about a fictitious athlete (e.g., endorser). Accordingly, this research design was able to identify differences in the components of source credibility through manipulating the athlete endorser's on-field performance.

Findings revealed that the perceived on-field performance had a significant influence on source trustworthiness and expertise while a non-statistical difference was found in source attractiveness. Decomposition of the effects derived from the Structural Equation Model (SEM) also indicated that overall source credibility of an athlete endorser were associated with his/her on-field athletic performance. These findings assist people working in advertising/sponsorships in making strategic decisions when they maintain their relationships with sport celebrities. In particular, this study emphasizes the importance of utilizing an experimental design to recognize the impact of current athlete performance in advertising and on endorsed brands.

In conclusion, experimental design includes an intentional intervention in the natural order between events by the researchers (Mason, Gunst, & Hess, 2003) while researchers in the field of sport management often experience the need for conducting an experimental study. The quest of inference about causal relationships in various sport setting is compulsory to make our field more rigorous as an academic discipline. In other words, experimental design enables researchers to understand or improve sport consumer behaviors by determining the relationship between the different factors affecting a sport consumer's information process and the consequence of that process, particularly for the studies concerning the effects of advertising and endorsement. An understanding of the process of designing the experiment and collecting data is always a critical issue and therefore, researchers continue to focus on identifying optimal conditions for a variety of sports environments and consumers where variation is present.

Another research design that has been given relatively little attention in the field of sport management is a longitudinal research design. The primary goal of conducting longitudinal research is to examine developmental sequences and their interrelations (Rajulton, 2001). Longitudinal research can consider progress and change in status when cross-sectional research

usually deals with status (Rajulton, 2001). For instance, one study outlined in this dissertation employed a longitudinal research design with panel data to examine whether athletic giving creates crowding-out effects on academic giving. In this study, the relationship between athletic giving and academic giving of each school was considered as status indicating a cross-sectional condition while progress and change in status were parallel to any variation in this relationship over different academic years. As a set of panel data is quantitative information consisting of observations on the same entities (e.g., countries, schools, cities, teams, etc.) over two or more time periods, this study utilizes balanced panel data from 155 universities over a 10 year period from 2002 to 2011 which in turn created 1,550 observation points.

Longitudinal research in the field of sport management is necessary, especially for causal studies associated with issues in sport finance and economics. This design is able to examine “the nature of growth, trace patterns of change, and possibly give a true picture of cause and effect over time” (Rajulton, 2001, p.171). Thus, the longitudinal approach is a significant methodological enhancement for the growth of sport management as a stronger academic discipline. Since circumstances of sports business and consumer behavior have become complex, the longitudinal research approach should allow us to investigate this complexity by measuring change and making stronger causal interpretations (Rajulton, 2001). A study conducted by Pindyck and Rubinfeld (1998) also argued that longitudinal research with panel data was able to explain particular circumstances that either cross-section or time series research alone could not clarify.

It is apparent that findings from a typical linear regression model are inaccurate when the intercepts and/or the slopes vary across schools and academic years (Todd, Crook, & Barilla, 2005). The increased ability of fixed effects models to control for unobservable individual-

specific and/or time-specific heterogeneity, while eliminating much potential bias, is a critical issue in the analysis of panel data. The current study was intended to reflect institution and time-specific heterogeneity by using fixed effects models. As private giving is becoming one of the most important financial resources in higher education, a careful and precise analysis of the financial association between academics and athletics is compulsory for all college and university administrators. Consequently, the results derived from a more parsimonious/rigorous research design will absolutely assist decision makers in higher education to develop a synergetic relationship between athletics and academics.

Although most studies rely heavily on cross-sectional survey designs, positivistic and quantitative methods have dominated sport management research (Skinner & Edwards, 2005). Longitudinal research with panel data can be a significant way to explain and predict a variety of sport circumstances because the contemporary sport industry is often predicted by large-scale data (e.g., winning, giving, sales, etc.). It is clear that longitudinal research is a formidable methodological challenge in the field of sport management, which is why the current study addresses how scholars can integrate longitudinal research to examine relationships that have been elusive in past research efforts.

Finally, there exists a sustained need for sport management scholars to use cross-sectional designs in conjunction with rigorous statistical analysis. In general, cross-sectional survey designs have been considered as the most prevalent research method in the field of sport management. Olafson (1990) argued that a critical gap exists between sport management research and organizational research in terms of research methods and statistical analyses. He advised that an incorporation and understanding of rigorous statistical analyses could improve the quality of sport management research.

For example, a specific statistical analysis used in the cross-sectional study outlined in this dissertation was Structural Equation Modeling (SEM). SEM is an appropriate method to handle, quantify, and interpret models that are specified with hypothesized causal relations based on theory. Thus, SEM is a flexible framework for specifying and testing a wide variety of hypothesized models. Hu and Bentler (1999) indicated that a SEM analysis involves postulating and testing models that explain relationships among a set of multiple items and latent variables. SEM is commonly considered as a confirmatory method in the sense that it is better suited to confirmatory than exploratory analyses. SEM is a general modeling framework that encompasses statistical methods as path analysis, confirmatory factor analysis, analysis of mean structures, and growth curve modeling (Kline, 2011).

The cross-sectional study was designed to examine both the dimensional and structural concerns in the relationship between the dimensions of service quality and the assessment of service quality. The effects of service attributes (e.g., functional, technical, and environmental quality) on season-ticket holders' cognitive, affective, and behavioral responses in the context of college football were scrutinized. In particular, a two-stage modeling strategy was utilized to postulate and examine the models (Anderson & Gerbing, 1988). For example, this strategy first examines the fit of the measurement model alone and then evaluates the fit of SEM in addition to the measurement model. In addition, the decomposition of effects derived from SEM was employed to examine direct and indirect relationships among the latent constructs.

Findings from SEM supported that the hypothesized model fit the data well and all estimated parameters were statistically significant. The dimensions of service quality were significantly associated with the season-ticket holders' perceived service quality (e.g., cognitive), satisfaction (e.g., affective), and behavioral intentions (e.g., behavioral). The delivery of quality

services in an effective and efficient manner is one of the important issues for most intercollegiate athletic programs to increase fan satisfaction. Consequently, SEM can provide some interesting aspects to the body of knowledge regarding the theoretical understanding of the relationship between the dimensions of service quality and service assessment in consumer response.

In the field of sport management, SEM is a primarily cross-sectional statistical modeling technique requiring strong theoretical and empirical understanding in certain topic areas (Kline, 2011). Since factor analysis, path analysis, and regression represent special cases of SEM, researchers are more likely to use SEM, particularly when they determine whether a proposed model is valid. SEM is a relatively young field in sport management and is still developing. An application of SEM is a source of excitement for some researchers who embrace the mediating effects into their conceptual/theoretical models to explain the causal relationships among latent constructs. For instance, the cross-sectional study outlined in this dissertation embraced the mediating effects into the service quality model to explain the relationship between the dimensions of service quality and service assessment in consumer response. Administrators and researchers in the field of intercollegiate athletics continue to focus on identifying the best model, elucidating sport consumer behavior in a variety of sports settings where variation takes place.

In conclusion, a greater understanding of the diversity in methodology and topic areas can facilitate sport management scholars to be involved in a variety of research projects and contribute to the emerging body of research on the psychological understanding of sports consumer behavior. This circumstance will be beneficial to the field of sport management as a strong academic discipline. Researchers must know how to deal with different types of data as a wide range of data becomes more available in sport management (Olafson, 1990). Therefore, it is

strongly recommended that sport management researchers develop an appropriate research method based on their data as well as staying current with advanced research design, methodology, and analysis (Olafson, 1990).

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APPENDIX A

**APPROVAL MEMORANDUM OF
HUMAN SUBJECTS COMMITTEE FOR STUDY 1**



120 Ozark Hall • Fayetteville, Arkansas 72701 • (479) 575-2208 • (479) 575-3846 (FAX)
Email: irb@uark.edu

**Research Support and Sponsored Programs
Institutional Review Board**

March 2, 2011

MEMORANDUM

TO: Gi-Yong Koo
Stephen Dittmore

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 11-02-467

Protocol Title: *Impact of Perceived On-Field Performance on Sport Celebrity Source Credibility*

Review Type: EXEMPT EXPEDITED FULL IRB

Approved Project Period: Start Date: 03/02/2011 Expiration Date: 03/01/2012

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Compliance website (<http://www.uark.edu/admin/rsspinfo/compliance/index.html>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

If you wish to make *any* modifications in the approved protocol, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 120 Ozark Hall, 5-2208, or irb@uark.edu.

The University of Arkansas is an equal opportunity/affirmative action institution.


APPENDIX B

SURVEY QUESTIONNAIRE FOR STUDY 1

1-1. Source Credibility

You are invited to answer the following questionnaire about how your perception of a sport celebrity's performance influences your attitude toward the sponsoring brands and ads. Your participation is entirely voluntary and your responses will be kept confidential. Please contact Dr. Dittmore at dittmore@uark.edu or Gi-Yong Koo at XXX@XXXX.XXX if you have any questions.

Directions: Please take a few minutes to read the profile and article below and answer the following questions on the next page.

<div data-bbox="267 365 467 630"></div> <p data-bbox="289 657 503 688">Morgan Mitchell</p> <p data-bbox="289 787 669 951">Name: Morgan Mitchell Born: Chicago, IL October 30, 1989 Height: 5-8 / Weight: 130 lbs. Age: 25</p> <p data-bbox="289 989 568 1083">Swings: R Debut: LPGA 2003 Years Professional: 8th</p> <p data-bbox="289 1121 690 1346">Notes: Mitchell is the co-founder of an organization designed to raise awareness and donations for breast cancer research. An annual golf tournament is held to raise money for this cause.</p>	<p data-bbox="751 384 1032 415"><u>Mitchell Wins Again.</u></p> <p data-bbox="751 453 1284 711">LEMONT, Ill., April 10 — Three days and several hours after the BMW Championship began with lackluster crowds and soggy weather, it finished with near perfection. Cog Hill channeled its past, finding a summer climate, typical Chicago galleries and a familiar champion.</p> <p data-bbox="751 749 1300 1045">Morgan Mitchell, a two-time winner of the Western Open here who finished last week’s event in second place, made few mistakes Sunday on her way to a two-stroke victory. This is her second victory in the past three events. She shot a final-round score of 63, eight-under-par, getting her to 22 under for the tournament.</p> <p data-bbox="751 1083 1300 1346">Mitchell is becoming a dominant player on the LPGA circuit. Having won two of the last three events, she is finding ways to keep the competition in the rear-view mirror and claim more and more trophies. “She seems to be in the zone and doesn’t falter,” said another competitor in the LPGA.</p>
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Q1-Q4: Please answer by indicating how you agree or disagree with the following statements. If you feel that Morgan Mitchell’s performance is very closely related to one end of the scale, then you should circle either 3 or -3. If you feel Morgan Mitchell’s performance is quite closely related to one or the other end of the scale (but not extremely) you should circle either 2 or -2. If you feel that Morgan Mitchell’s performance seems only slightly related (but not really neutral) to one end of the scale, you should circle 1 or -1.

Morgan Mitchell’s performance has been:

1. Unreliable	-3	-2	-1	0	1	2	3	Reliable
2. Bad	-3	-2	-1	0	1	2	3	Good
3. Inconsistent	-3	-2	-1	0	1	2	3	Consistent
4. Undependable	-3	-2	-1	0	1	2	3	Dependable

Q5-7: Please answer by indicating how you agree or disagree with the following statements. If you think the characteristic of Morgan Mitchell is very closely related to one end of the scale, then you should circle either 3 or -3. If you think the characteristic of Morgan Mitchell is quite closely related to one or the other end of the scale (but not extremely) you should place your circle either 2 or -2. If you feel that the characteristic of Morgan Mitchell seems only slightly related (but not really neutral) to one end of the scale, you should circle 1 or -1.

To me Morgan Mitchell is:

5. Untrustworthy	-3	-2	-1	0	1	2	3	Trustworthy
6. Not an expert	-3	-2	-1	0	1	2	3	Expert
7. Unattractive	-3	-2	-1	0	1	2	3	Attractive

Directions: Please take a few seconds to skim the ad below and answer the following questions on the next page.

Advertisement

Q8-13: Axon is a major sponsor of Morgan Mitchell. Please respond to each item by circling the number on the scale that most accurately reflects your attitude and purchasing intention toward Axon.

My attitude toward Axon is:

8. Unfavorable	-3	-2	-1	0	1	2	3	Favorable
9. Bad	-3	-2	-1	0	1	2	3	Good
10. Negative	-3	-2	-1	0	1	2	3	Positive

The next time I consider purchasing a cellular phone, I will consider Axon Max.

11. Impossible	-3	-2	-1	0	1	2	3	Possible
12. Unlikely	-3	-2	-1	0	1	2	3	Likely
13. Improbable	-3	-2	-1	0	1	2	3	Probable

Q14-17: Read each of the following statements carefully and respond by circling the number based on your initial reaction. For example if you slightly agree with the statement, “I like the advertisement that I saw,” circle 5.

	Strongly Disagree				Strongly Agree			
14. I like the advertisement that I saw.	1	2	3	4	5	6	7	
15. The advertisement that I saw is appealing to me	1	2	3	4	5	6	7	
16. The advertisement that I saw is attractive to me.	1	2	3	4	5	6	7	
17. The advertisement that I saw is interesting to me.	1	2	3	4	5	6	7	

Q18-20: Please answer the following questions.

18. What is your gender? Male Female


19. What is your age? _____

20. Undergraduate _____ Graduate _____

1-2. Source Credibility

You are invited to answer the following questionnaire about how your perception of a sport celebrity's performance influences your attitude toward the sponsoring brands and ads. Your participation is entirely voluntary and your responses will be kept confidential. Please contact Dr. Dittmore at dittmore@uark.edu or Gi-Yong Koo at XXX@XXXX.XXX if you have any questions.

Directions: Please take a few minutes to read the profile and article below and answer the following questions on the next page.

<div data-bbox="267 373 469 632" data-label="Image"></div> <p data-bbox="289 657 503 688">Morgan Mitchell</p> <p data-bbox="289 787 669 953">Name: Morgan Mitchell Born: Chicago, IL October 30, 1985 Height: 5-8 / Weight: 130 lbs. Age: 25</p> <p data-bbox="289 989 574 1087">Swings: R Debut: LPGA 2003 Years Professional: 8th</p> <p data-bbox="289 1155 691 1377">Notes: Mitchell is the co-founder of an organization designed to raise awareness and donations for breast cancer research. An annual golf tournament is held to raise money for this cause.</p>	<p data-bbox="751 384 1133 415"><u>Mitchell Struggles Continue.</u></p> <p data-bbox="751 451 1279 562">SOUTHERN PINES, N.C., April 10 — The golf club looked like an anvil in her hands, large and burdensome and impossibly heavy.</p> <p data-bbox="751 594 1308 816">The more Morgan Mitchell played golf Saturday at the United States Women’s Open, the more she scattered shots and shook her left wrist, until she walked up to her playing partners for the second time in three events and said goodbye in the middle of a tournament.</p> <p data-bbox="751 850 1299 961">“Guys, I’m done,” Mitchell told her playing partners on the first hole at Pine Needles, their 10th hole of the second round. “Good luck.”</p> <p data-bbox="751 995 1313 1178">Mitchell’s second withdrawal in a month and for the fourth consecutive week, Mitchell found herself outside the top 25 players in an event. Mitchell has been struggling for the better part of a year.</p>
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Q1-Q4: Please answer by indicating how you agree or disagree with the following statements. If you feel that Morgan Mitchell’s performance is very closely related to one end of the scale, then you should circle either 3 or -3. If you feel Morgan Mitchell’s performance is quite closely related to one or the other end of the scale (but not extremely) you should place your circle either 2 or -2. If you feel that Morgan Mitchell’s performance seems only slightly related (but not really neutral) to one end of the scale, you should circle 1 or -1.

Morgan Mitchell’s performance has been:

1. Unreliable	-3	-2	-1	0	1	2	3	Reliable
2. Bad	-3	-2	-1	0	1	2	3	Good
3. Inconsistent	-3	-2	-1	0	1	2	3	Consistent
4. Undependable	-3	-2	-1	0	1	2	3	Dependable

Q5-7: Please answer by indicating how you agree or disagree with the following statements. If you think the characteristic of Morgan Mitchell is very closely related to one end of the scale, then you should circle either 3 or -3. If you think the characteristic of Morgan Mitchell is quite closely related to one or the other end of the scale (but not extremely) you should place your circle either 2 or -2. If you feel that the characteristic of Morgan Mitchell seems only slightly related (but not really neutral) to one end of the scale, you should circle 1 or -1.

To me Morgan Mitchell is:

5. Untrustworthy	-3	-2	-1	0	1	2	3	Trustworthy
6. Not an expert	-3	-2	-1	0	1	2	3	Expert
7. Unattractive	-3	-2	-1	0	1	2	3	Attractive

Directions: Please take a few seconds to skim the ad below and answer the following questions on the next page.

Advertisement

Q8-13 Axon is a major sponsor of Morgan Mitchell. Please respond to each item by circling the number on the scale that most accurately reflects your attitude and purchasing intention toward Axon.

My attitude toward Axon is:

8. Unfavorable	-3	-2	-1	0	1	2	3	Favorable
9. Bad	-3	-2	-1	0	1	2	3	Good
10. Negative	-3	-2	-1	0	1	2	3	Positive

The next time I consider purchasing a cellular phone, I will consider Axon Max.

11. Impossible	-3	-2	-1	0	1	2	3	Possible
12. Unlikely	-3	-2	-1	0	1	2	3	Likely
13. Improbable	-3	-2	-1	0	1	2	3	Probable

Q14-17: Read each of the following statements carefully and respond by circling the number based on your initial reaction. For example if you slightly agree with the statement, “I like the advertisement that I saw,” circle 5.

						Strongly						Strongly
						Disagree						Agree
14. I like the advertisement that I saw.					1	2	3	4	5	6	7	
15. The advertisement that I saw is appealing to me					1	2	3	4	5	6	7	
16. The advertisement that I saw is attractive to me.					1	2	3	4	5	6	7	
17. The advertisement that I saw is interesting to me.					1	2	3	4	5	6	7	

Q18-20: Please answer the following questions.

18. What is your gender? Male Female

19. What is your age? _____

20. Undergraduate _____ Graduate _____

APPENDIX C

SURVEY QUESTIONNAIRE FOR PRE TESTS

Pre Test-1-1

Please indicate your level of agreement for the following statement to all the pictures:
(Circle best response)
"This female golfer is attractive."

Image1

Strongly Disagree 1 *Disagree* 2 *Neutral* 3 *Agree* 4 *Strongly Agree* 5

Image2

Strongly Disagree 1 *Disagree* 2 *Neutral* 3 *Agree* 4 *Strongly Agree* 5

Image3

Strongly Disagree 1 *Disagree* 2 *Neutral* 3 *Agree* 4 *Strongly Agree* 5

Image4

Strongly Disagree 1 *Disagree* 2 *Neutral* 3 *Agree* 4 *Strongly Agree* 5

Image5

Strongly Disagree 1 *Disagree* 2 *Neutral* 3 *Agree* 4 *Strongly Agree* 5

Image6

Strongly Disagree 1 *Disagree* 2 *Neutral* 3 *Agree* 4 *Strongly Agree* 5

Image7

Strongly Disagree 1 *Disagree* 2 *Neutral* 3 *Agree* 4 *Strongly Agree* 5

Image8

Strongly Disagree 1 *Disagree* 2 *Neutral* 3 *Agree* 4 *Strongly Agree* 5

Pre Test-1-2

Please indicate your level of agreement for the following names being used as a name for this female golfer. Please circle your level of agreement for each name.



	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Neutral</u>	<u>Agree</u>	<u>Strongly Agree</u>
Angela Ross	1	2	3	4	5
Maria McMillan	1	2	3	4	5
Lorena Odell	1	2	3	4	5
Morgan Mitchell	1	2	3	4	5
Stacy Nichols	1	2	3	4	5
Nicole Rice	1	2	3	4	5
Christie Kim	1	2	3	4	5
Carla Newcastle	1	2	3	4	5
Mary Hawkins	1	2	3	4	5
Kris Park	1	2	3	4	5

THANK YOU!

Pre-Test-2-1

1. **Gender:** Male Female
2. **Please rank your top three (3) favorite products.**
These are products that are relevant to and highly involved in your life.

1st Favorite _____

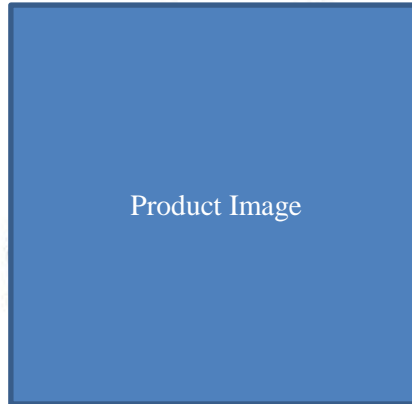
2nd Favorite _____

3rd Favorite _____

Thank You!

Pre Test-2-2

Please indicate your level of agreement for the following names being used as a name for this cell phone. Please circle your level of agreement for each name.



	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Neutral</u>	<u>Agree</u>	<u>Strongly Agree</u>
1. Axon Max	1	2	3	4	5
2. TeleNab Sly	1	2	3	4	5
3. Axon Grand	1	2	3	4	5
4. TeleNab Slim	1	2	3	4	5
5. Axon Sly	1	2	3	4	5
6. TeleNab Max	1	2	3	4	5
7. Axon Slim	1	2	3	4	5
8. TeleNab Grand	1	2	3	4	5
9. Axon Class	1	2	3	4	5
10. TeleNab Class	1	2	3	4	5

APPENDIX D

**APPROVAL MEMORANDUM OF
HUMAN SUBJECTS COMMITTEE FOR STUDY 2**

August 23, 2012

MEMORANDUM

TO: Gi-Yong Koo
Stephen Dittmore

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 12-08-050

Protocol Title: *College Football Season Ticket Holders' Perception of Service Quality*

Review Type: EXEMPT EXPEDITED FULL IRB

Approved Project Period: Start Date: 08/23/2012 Expiration Date: 08/22/2013

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (<http://vpred.uark.edu/210.php>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 1,500 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior* to implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

APPENDIX E

SURVEY QUESTIONNAIRE FOR STUDY 2

The Fan Experience

You are invited to participate in this study by responding to the following questions about your experiences attending football games. Your participation is entirely voluntary. Your responses will be recorded anonymously and reported only in group form. The information you provide will help us provide a better experience and better services for our fans. The survey will take approximately 10 minutes to complete. If you have questions or concerns about this study, you may contact Gi-Yong Koo or Dr. Steve Dittmore (XXX) XXX-XXXX or by e-mail at XXX@XXX.XXX. For questions or concerns about your rights as a research participant, please contact Ro Windwalker, the University's IRB Coordinator, at (479) 575-2208 or by e-mail at irb@uark.edu. Thank you for taking the time to complete this survey and being a part of this study.

DIRECTIONS: PLEASE read each of the following statements carefully and respond as honestly and accurately as possible by circling or checking the number based on your initial reaction.

Environmental Quality		Strongly Disagree	Neutral				Strongly Disagree	
	The stadium is kept clean.	1	2	3	4	5	6	7
	The stadium's layout makes it easy to get where I want to go.	1	2	3	4	5	6	7
	The directional signs at the stadium are helpful.	1	2	3	4	5	6	7
	The food services in the stadium are adequate.	1	2	3	4	5	6	7
	The souvenir stands are easily accessible.	1	2	3	4	5	6	7
	There are adequate restroom facilities.	1	2	3	4	5	6	7
	The public address system is easy to understand.	1	2	3	4	5	6	7
	The LED signage in the stadium is easy to read.	1	2	3	4	5	6	7
Functional Quality								
	Ushers working at the stadium are helpful.	1	2	3	4	5	6	7
	People working at the stadium are knowledgeable.	1	2	3	4	5	6	7
	People working at the parking area are courteous.	1	2	3	4	5	6	7
	Ticket takers are courteous.	1	2	3	4	5	6	7
	Concession workers are courteous.	1	2	3	4	5	6	7
Technical Quality								
	[University name] ranking adds excitement to the game.	1	2	3	4	5	6	7
	The opponent's conference standing adds excitement to the game.	1	2	3	4	5	6	7
	[University name]'s conference standing adds excitement to the game.	1	2	3	4	5	6	7
	The quality of the opponent is important.	1	2	3	4	5	6	7
	The national prominence of the opponent adds excitement to the game.	1	2	3	4	5	6	7
	The opponent's ranking adds excitement to the game.	1	2	3	4	5	6	7
Satisfaction								

	I am satisfied with my decision to attend [University name]'s games.	1	2	3	4	5	6	7
	I am happy with the experiences I have had at [University name]'s games.	1	2	3	4	5	6	7
	I am glad I choose to attend [University name] games.	1	2	3	4	5	6	7
Perceived Quality								
	The services provided at [University name]'s games are excellent.	1	2	3	4	5	6	7
	The service at [University name]'s games is outstanding.	1	2	3	4	5	6	7
	I have received high quality services at [University name]'s games.	1	2	3	4	5	6	7
Behavioral Intention								
	I would enjoy attending another [University name] home football game.	1	2	3	4	5	6	7
	I am likely to attend a game in the future.	1	2	3	4	5	6	7
	I will continue to go to [University name] football games.	1	2	3	4	5	6	7

Please tell us about yourself.

What is your gender? Male Female

What is your age? _____

How many people 17 and younger are in your household? _____

How many people 18 and older are in your household? _____

What is your annual household income?

- Less than \$24,999 \$25,000-\$49,999 \$50,000-\$74,999
 \$75,000-\$99,999 more than \$100,000

What is your current marital/household status?

- single married/significant other
 divorced widowed

What is your highest level of education?

- some high school high school graduate
 some college college graduate
 graduate degree

How long have you been a season-ticket holder? _____

APPENDIX F

**APPROVAL MEMORANDUM OF
HUMAN SUBJECTS COMMITTEE FOR STUDY 3**



September 23, 2011

MEMORANDUM

TO: Gi-Yong Koo
Stephen Dittmore

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 11-09-111

Protocol Title: *Crowding-Out Effects of Athletic Giving on Academic Giving at
NCAA Division I, II, and III Institutions*

Review Type: EXEMPT EXPEDITED FULL IRB

Approved Project Period: Start Date: 09/23/2011 Expiration Date: 09/22/2012

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (<http://vpred.uark.edu/210.php>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

If you wish to make *any* modifications in the approved protocol, you must seek approval *prior* to implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

BIOGRAPHICAL SKETCH

Born in Seoul, Korea. Have lived in Fayetteville, Arkansas with a wife and two sons since the summer of 2010.

EDUCATIONAL HISTORY

University of Arkansas (Fayetteville, AR) July 2010–December 2012

Ed.D.-Major in Recreation & Sport Management (**GPA 4.00/4.00**)

Cognate Area: Statistics

Dissertation Title: “*Analytical Research Topics in Sport Management*”

Florida State University (Tallahassee, FL) August 2001– December 2004

Doctoral Student-Major in Sport Administration (**GPA 3.82/4.00**)

Cognate Area: Sport Marketing

Yonsei University (Seoul, Korea) September 1996 – February 1999

M.S. Major in Physical Education (**GPA 3.90/4.00**)

Cognate Area: Sport Management

Thesis Title: “*The comparative analysis of the Korean professional sports image.*”

Yonsei University (Seoul, Korea) March 1992 – August 1996

B.S. Major in Sports & Leisure Studies (**GPA 3.65/4.00**)

PROFESSIONAL EXPERIENCE

University of Arkansas (Fayetteville, AR) August 2010 – Present

Position: Teaching Assistant in Recreation & Sport Management

Duties: Teaching undergraduate recreation and sport management courses

East Tennessee State University (Johnson City, TN) August 2009 – May 2010

Position: Full Time Lecturer in Sport Management

Duties: Teaching and service in relation to sport management program

University of Tennessee (Knoxville, TN) August 2005 – July 2009

Position: Assistant Professor in Sport Management

Duties: Research, teaching, and service in relation to sport management program

Florida A&M University (Tallahassee, FL) August 2004 – May 2005

Position: Adjunct Faculty (part-time)

Duties: Teaching a graduate sport law course and undergraduate basic karate courses

Tallahassee Community College (Tallahassee, FL) January 2005 – May 2005

Position: Adjunct Faculty (part-time)

Duties: Teaching undergraduate basketball courses

Florida State University (Tallahassee, FL)

January 2002 – December 2004

Position: Teaching Assistant & Research Assistant

Duties: Teaching undergraduate self-defense, stretching & relaxation, and aerobic conditioning courses. Assisting research projects and classes (research method, sport administration, & organizational theory courses)

Yonsei University (Seoul, Korea)

March 1999 – May 2001

Position: Instructor (part-time)

Duties: Teaching self-defense, Tae Kwon Do, table tennis, and basketball courses

ING Korea Co. (Seoul, Korea)

August 1998 – December 2000

Position: Marketing Consultant (part-time)

Duties: Consulting for promotion strategy, sponsorship, and web-design

TEACHING EXPERIENCE

University of Arkansas (Fayetteville, AR)

August 2010 – Present

Undergraduate Courses

- RESM2813: Recreation and Sport Leadership
- RESM2603: Commercial Recreation, Sport, and Tourism
- RESM2853: Leisure and Society
- RESM3023: Sport Management Fundamentals
- RESM3843: Recreation and Sport Facility
- RESM4003: Innovative Practices in Recreation and Sport

East Tennessee State University (Johnson City, TN)

August 2009 – May 2010

Graduate Courses

- SALM5243: Sport Marketing (on-line class)
- SALM5230: Legal Issues in PE and Sport (on-line class)
- SALM5240: Risk Management in Sport (on-line class)
- SALM5225: Planning/Operating Facilities (on-line class)
- SALM5245: Financing Sport (on-line class)

Undergraduate Courses

- SALM3220: Facility Plan/Event Management (on-line class)
- SALM4210: Legal issues in SI Activities
- SALM3225: Marketing Strategies

University of Tennessee (Knoxville, TN)

August 2005 – July 2009

Graduate Courses

- SM532: Research Techniques in Sport
- SM540: Sport Marketing
- SM580: Seminar in Sport Marketing
- SM593: Social Issues in Sport Organization

Undergraduate Courses

- SM250: Foundation of Sport Management
- SM380: Sport Finance
- SM440: Sport Marketing

Florida A&M University (Tallahassee, FL)

August 2004 – May 2005

Graduate Course

- PEM5412: Sport Law

Undergraduate Course

- PEM1441: Basic Karate

Florida State University (Tallahassee, FL)

January 2002 – December 2004

Undergraduate Courses

- PEM1405: Self-Defense
- PEP1001: Stretching & Relaxation
- PEM1141: Aerobic Conditioning

Yonsei University (Seoul, Korea)

March 1999 – May 2001

Undergraduate Courses

- SLS2107: Self-Defense
- UCL1119: Tae Kwon Do
- UCL1112: Table Tennis
- UCL1104: Basketball

REFEREED JOURNAL ARTICLES

- Hardin, R., Trendafilova, S., Stokowski, S., & **Koo, G. Y.** (Forthcoming). Educational choices of international collegiate student-athletes. *International Journal of Sport Management*.
- **Koo, G. Y.**, Ruihley, R., & Dittmore, S. (2012). Impact of perceived on-field performance on sport celebrity source credibility. *Sports Marketing Quarterly*, 21(3), 147-158.
- Hardin, R., **Koo, G. Y.**, Ruihley, R., Dittmore, S., & McGreevey, M. (2012). Motivation for consumption of collegiate athletics subscription web-site. *International Journal of Sport Communication*, 5, 368-383.
- Gaffney, B., Hardin, R., Fitzhugh, E., & **Koo, G. Y.** (2012). The relationship between job satisfaction and burnout in certified athletic trainers. *International Journal of Sport Management*, 13, 1-14.
- Lim, S. Y., **Koo, G. Y.**, Diacin, M. (2012). Gender discrimination occurring at collegiate athletic departments: Practical effectiveness of radical feminism in the U.S. *Korean Institute of Sport Science*, 28(1), 68-79.
- Love, A., Hardin, R., **Koo, G. Y.**, & Morse, A. (2011). Effects of motives on satisfaction and behavioral intentions of volunteers at a PGA TOUR event. *International Journal of Sport Management*. 12, 86-101.

- Hardin, R., Piercy, A., Bemiller, J. & **Koo, G. Y.** (2010). Cultivating financial support for women's athletics: An examination of donor motivations. *American Journal of Educational Studies*, 3(1), 53-66.
- **Koo, G. Y.**, Andrew, D.P.S., Hardin, R., & Greenwell, T.C. (2009). Classification of sports consumers on the basis of emotional attachment: A Study of Minor League Ice Hockey Fans and Spectators. *International Journal of Sport Management*, 10(3), 307-329.
- **Koo, G. Y.**, Hardin, R., McClung, S., Jung, T., Cronin, J., Vorhees, C., & Bourdeau, B. (2009). Examination of the causal effects between dimensions of service quality and spectator satisfaction in Minor League Baseball. *International Journal of Sport Marketing and Sponsorship*, 11(1), 12-25.
- Kim, S. Haley, E., & **Koo, G. Y.** (2009). Comparison of the paths from consumer involvement types to Ad responses between corporate advertising and product advertising. *Journal of Advertising*, 38(3), 67-80.
- Hardin, R., **Koo, G. Y.**, Pancratz, M., & Andrew, D.P.S. (2009). Parental Motivations and Summer Collegiate Basketball Camps. *Applied Research in Coaching and Athletics Annual*, 24, 51-84.
- Hardin, R., Andrew, D. P. S., **Koo, G. Y.**, & Bemiller, J. (2009). Motivational factors for participating in basic instruction programs. *Physical Educator*, 66(2), 71-84.
- Andrew, D.P.S., **Koo, G.Y.**, Hardin, R., & Greenwell, T.C. (2009). Analysing motives of minor league hockey fans: The introduction of violence as a spectator motive. *International Journal of Sport Management and Marketing*, 5(1/2), 73-89.
- **Koo, G. Y.**, Andrew, D. P. S., & Kim, S. (2008). Mediated relationships between the constituents of service quality and behavioral intentions: Women's college basketball. *International Journal of Sport Management & Marketing*, 4(4), 390-412.
- **Koo, G. Y.**, & Hardin, R. (2008). Difference in interrelationship between spectators' motives and behavioral intentions based upon emotional attachment. *Sports Marketing Quarterly*, 17(1). 30-43.
- Jones, S. G., **Koo, G. Y.**, Kim, S., Andrew, D.P.S., & Hardin, R. (2008). Motivations of international student-athletes to participate in intercollegiate athletics. *Journal of Contemporary Athletic*, 3(4).
- **Koo, G. Y.** & Love, A., (2007). Effects of cause related marketing (CRM) on team-public relationships. *Korean Journal of Sport Management*, 12(4). 27-37.
- Hardin, R., **Koo, G. Y.**, King, B., & Zdroik, J. (2007). Sport volunteer motivations and demographic influences at a nationwide tour event. *International Journal of Sport Management*, 8(1), 80-94.
- **Koo, G. Y.**, Quarterman, J., & Flynn, L. (2006). Effect of perceived sport event and sponsor image fit on consumers' cognition, affect, and behavioral intentions. *Sports Marketing Quarterly*, 15(2), 80-90.
- **Koo, G. Y.**, Quarterman, J., & Jackson, E. N. (2006). The effect perceived image fit on brand awareness: 2002 Korea-Japan World Cup. *International Journal of Sports Marketing & Sponsorship*, 7(3), 180-191.
- Quarterman, J., Jackson, E. N., Kim, K., Yoo, E., **Koo, G. Y.**, Pruegger, B., & Han, K.(2006). Statistical data analysis techniques employed in the Journal of Sport Management: January 1987 to October 2004. *International Journal of Sport Management*, 7(1), 13-30.

- **Koo, G. Y.** (2005). Sport sponsorship image match-up effect on consumer based brand equity. *Korean Journal of Sport Management*, 10(4), 135-144.
- **Koo, G. Y., & Cho, K. M.** (1999). The comparative analysis of the ideal and real images in the major Korean professional sports, *Korean Journal of Sport Management*, 1(2), 185-205.

BOOK CHAPTER

- **Koo, G. Y., & Quarterman, J.** (2011). Effect of perceived sport event and sponsor image fit on consumers' cognition, affect, and behavioral intentions. In N.L. Lough & W.A. Sutton (Ed.), *Handbook of Sport Marketing Research*. Morgantown, WV: Fitness Information Technology.
- Garant-Jones, S., **Koo, G. Y.**, Kim, S., Andrew, D.P.S., & Hardin, R. (2011). Motivations of international student-athletes to participate in intercollegiate athletics. In J.P. Waldorf (Ed.), *Advances in Sports and Athletics Volume I*. Hauppauge, NY: Nova Science Publishers. (reprint)

INVITED WRITING

- **Koo, G. Y.** (2009). Korea sport organizations, In Parks, J., Quarterman, J., & Thibault, L. (Eds.), *Contemporary Sport Management* (4th ed.). Champaign, IL: Human Kinetics.
- **Koo, G. Y.** (2007). Korea sport organizations, In Parks, J., Quarterman, J., & Thibault, L. (Eds.), *Contemporary Sport Management* (3rd ed.). Champaign, IL: Human Kinetics.

REFEREED CONFERENCE PROCEEDINGS

- **Koo, G. Y., Love, A., & Kim, J.** (May 2007). The role of sport team-public relationships in strengthening team identification. Conference Proceedings of the 2006 conference of *Academy of Marketing Science*. Coral Gables, FL.
- **Koo, G. Y., Hardin, R., McClung, S., Jung, T., Cronin, J., & Vorhees, C.** (May 2007). Effects of dimensions of service quality on spectators' cognitive and affective responses: Minor League Baseball. Conference Proceedings of the 2006 conference of *Academy of Marketing Science*. Coral Gables, FL.
- **Koo, G. Y., Hardin, R., & Bemiller, J.** (February 2006). Effect of the image fit of Super Bowl/sponsors on consumer based outcomes. Conference Proceedings of the *Southeast Decision Sciences Institute*. Wilmington, NC.
- **Koo, G. Y., Kim, S., & Kim, S.** (July 2006). Effects of service attributes, perceived service quality, and satisfaction on customers' behavioral intentions in women's college basketball. Conference Proceedings of the 2006 conference of *Academy of Marketing Science*, Seoul, Korea.

RESEARCH REPORTS

- Hardin, R. & **Koo, G. Y.** (2009). Evaluation of service quality at Neyland Stadium. Prepared for The University of Tennessee Men's Athletic Department.
- Andrew, D.P.S., Hardin, R., & **Koo, G. Y.** (2007). Demographics profile and motivations of spectators at Neyland Stadium. Prepared for The University of Tennessee Men's Athletic Department.

REFEREED RESEARCH PRESENTATIONS

- Dittmore, S., & **Koo, G. Y.** (2012). *Content, copyright and transmission: Analyzing current legal issues in sport media rights*, Presented at the 27th Annual North American Society for Sport Management Conference. Seattle, WA.
- **Koo, G. Y.**, & Dittmore, S. (2012). *Crowding-out effects of athletic giving on academic giving at FBS institution*, Presented at College Sport Research Institute. Chapel Hill, NC.
- Hardin, R., **Koo, G. Y.**, & Dittmore, S. (2011). *Online sport media-subscription motives and media-use behaviors*, Presented at the 9th Annual Conference of the Sport Marketing Houston, Texas.
- **Koo, G. Y.**, Hardin, R., & Dittmore, S. (2011). *Collegiate football season ticket holders perception of service quality*, Presented at College Sport Research Institute. Chapel Hill, NC.
- Gaffney, B. Hardin, R., Fitzhugh, E. C., & **Koo, G.** (2010). *Burnout and job satisfaction in certified athletic*, Presented at Southeast Chapter of the American College of Sports Medicine Southeast Annual Meeting. Greenville, SC.
- Hardin, R., Blum, S., & **Koo, G.** (2010). *Collegiate women's basketball: Motivations to be a season ticket holder*, Presented at College Sport Research Institute. Chapel Hill, NC.
- Love, A., Hardin, R., **Koo, G. Y.**, & Morse, A. (2009). *Mediating effects of satisfaction on the relationship between motivation and behavioral intentions for volunteers at a PGA TOUR event*, Presented at the MSU College of Education 2nd Annual Faculty/Student Research Forum. Mississippi State, MS.
- Diacin, M. J., **Koo, G. Y.**, & Lim, S. (2009). *Female employees' perceptions of employment trends in intercollegiate athletics departments*, Presented at the 125th American Alliance for Health, Physical Education, Recreation, and Dance Annual Conference. Tampa, FL.
- Hardin, R., **Koo, G.**, McMillin, A., Cooper, C., & Hultquist, C. (2009). *Physical training motivations: female student-athletes and the female student population*, Presented at College Sport Research Institute Conference. Chapel Hill, NC.
- Hardin, R., McMillin, A., **Koo, G.**, Hultquist, C. (2009). *Training motivations for collegiate female student-athletes*, Presented to Southeast Chapter for the American College of Sports Medicine. Birmingham, AL.
- Goble, A., Bemiller, J., **Koo, G. Y.**, & Hardin, R. (2008). *Institutional liability for student-athlete misconduct*, Presented at the 23rd Annual North American Society for Sport Management Conference, Ontario, Canada.

- **Koo, G. Y.**, Diacin, J. M., & Hardin, R. (2008). *The effects of internship satisfaction on affective commitment and behavioral intentions*, Presented at the 23rd Annual North American Society for Sport Management Conference. Ontario, Canada.
- **Koo, G. Y.**, Rauhley, B., Pratt, A., & Hardin, R. (2008). *Communication with donors: Donor motivations and athletic development web sites*, Presented at the 3rd Communication & Sport. Clemson, SC.
- Andrew, D.P.S., **Koo, G. Y.**, Hardin, R. & Bemiller, J. (2008). *Motivations for participating in basic instruction programs: Academic benefit factor*, Presented at the 124th American Alliance for Health, Physical Education, Recreation, and Dance Annual Conference. Fort Worth, TX.
- Andrew, D.P.S., **Koo, G. Y.**, Hardin, R., & Greenwell, T.C. (2007). *Analyzing motives of minor league hockey fans: The introduction of violence as a spectator motive*, Presented at the 5th Annual Sport Marketing Association Conference. Pittsburgh, PA.
- Hardin, R., **Koo, G. Y.**, & McClung, S. (2007). *Spectator satisfaction of service quality at Minor League Baseball games*, Presented at the 5th Annual Sport Marketing Association Conference: Pittsburgh, PA.
- Lim, S., **Koo, G. Y.**, & Diacin, M. J. (2007). *Women's athletics departments: Greater opportunity through a radical feminist approach?* Presented at the 28th Annual conference of the North American Society for the Sociology of Sport. Pittsburgh, PA.
- Bemiller, J., Hardin, R., & Andrew, D.P.S., **Koo, G. Y.** (2007). *Pole vault safety: Should helmets be mandatory? Using a legal analysis to examine the issue*, Presented at the International Conference on Sport and Entertainment Business. Columbia, SC.
- **Koo, G. Y.**, Andrew D.P.S., Hardin, R., & Bemiller J. (2007). *Marketing implications of motivational factors for participating in basic instruction programs*, Presented at the Tennessee Association of Health, Physical Education, Recreation, and Dance Annual Conference. Franklin, TN.
- **Koo, G. Y.**, & Kim, J. (2007). *Effects of sport team-public relationships on team identification*, Presented at the 22nd Annual North American Society for Sport Management Conference. Miami, FL.
- Franz, Z., Hurt, A., Coomer, B., & **Koo, G. Y.** (2007). *Understanding the impact of Michelle Wies's performamnce on soure credibility*, Presented at the 22nd Annual North American Society for Sport Management Conference. Miami, FL.
- Kim, S., **Koo, G.**, & Haley, E. (2007). *Different roles of advertisement involvement in corporate advertising: A path analysis of the relationships between involvement types and attitude/behavioral intentions*, Presented at the 2007 conference of American Academy of Advertising. Burlington, VT.
- Hardin, R., **Koo, G. Y.**, King, B., Zdroik, J. & Bemiller, J. (2007). *Motivations and demographic profile of volunteers at a nationwide tour event*, Presented at the 123th American Alliance for Health, Physical, Education, Recreation and Dance Annual Conference, Baltimore, MD.
- Adam L., Bemiller, J., Hardin, R., & **Koo, G. Y.** (2007). *Equal rights, gender equity, discrimination, interscholastic sport*, Presented at the 20th Annual Sport, Physical Activity, Presented at the Recreation and Law Conference. Chapel Hill, NC.

- **Koo, G. Y.,** Hardin, R., & Seok, B. (2006). *Interrelationship between constructs of service quality and behavioral intentions*, Presented to the 3rd conference of Asian Association for Sport Management. Tokyo, Japan.
- Bemiller, J., Hardin, R., & **Koo, G. Y.** (2006). *Standard of care and risk management in the pole vault*, Presented to U.S. Track & Field and Cross County Coaches Association. San Antonio, TX.
- **Koo, G. Y.,** Quarterman, J., Jackson, E. N., & Shu, Y. (2005). *An approach of schematic information processing for sport sponsorship effectiveness*, Presented to the 121st American Alliance for Health, Physical Education, Recreation and Dance. Chicago, IL.
- **Koo, G. Y.** (2004). *Sport sponsorship match-up effect on consumer based brand equity. 2004 Super Bowl XXXVIII*, Presented to the 2nd Sport Marketing Association. Memphis, TN.
- **Koo, G. Y.** (2004). *Perceived sport event/sponsor match-up effect on consumer based brand equity*, Presented at the 19th Annual North American Society for Sport Management. Atlanta, GA. The Runner-Up (***One of the Top 4 Finalists***) of Student Research Competition.
- **Koo, G. Y.,** Jackson, E. N., & Mun, S. (2004). *Influence of an associated power between fans and preferred team on the sponsorship environment*, Presented at the 120th American Alliance for Health, Physical Education, Recreation and Dance. New Orleans, LA.
- Chung, T. W., **Koo, G. Y.,** Baeg, J., & Stringfellow, D. (2004). *Perception of NCAA Bylaw relative to gambling activities*, Presented at the 17th Annual Sport, Physical Activity, Recreation and Law Conference. Las Vegas, NV.
- Baeg, J., **Koo, G. Y.,** Bae, S., & Chung, T. W. (2004). *Do athletes own their name. Publicity rights and the First Amendment in sport*, Presented at the 17th Annual Sport, Physical Activity, Recreation and Law Conference. Las Vegas, NV.
- **Koo, G. Y.,** Han, J., & Jung, T. W. (2003). *The factors associated with spectator attendance*, Presented at the 54th Annual Florida Alliance for Health, Physical Education, Recreation and Dance Conference. Jacksonville, FL.
- **Koo, G. Y.,** & Kim, S. (2003). *The match-up effect of sponsorship recall and image transfer*, Presented at the 18th Annual North American Society for Sport Management Conference. Ithaca, NY.
- Quarterman, J., Jackson, E. N., Yoo, E., **Koo, G. Y.** & Pruegger, B. (2003). *An assessment of statistical data analysis techniques employed in the Journal of Sport Management: 1987-2002*, Presented at the 119th American Alliance for Health, Physical Education, Recreation and Dance. Philadelphia, PA.
- Quarterman, J., Jackson, E. N., & **Koo, G. Y.** (2002). *Managerial roles of intercollegiate athletics directors of NCAA Division IAA members' institutions: The Mintzberg model*, Presented at the 53rd Annual Florida Alliance for Health, Physical Education, Recreation and Dance Conference. Daytona, FL.
- **Koo, G. Y.** (1999). *The analysis of the professional sports images for the brand positioning*, Presented at the 4th Korean Society for Sport Management Conference. Chuan-An, South Korea.