THE IMPACT OF PERFORMANCE EXPECTANCY OF SPORT OFFICIATING TECHNOLOGY ON ATTITUDE TOWARD SPORT EVENTS

By

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Dedicated to my parents, and to my wife

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Attitude toward Events	A spectators' feeling about using technology in sport officiating. (Fishbein & Ajzen, 1975)
Behavioral Intention (Attendance)	A spectator's intentions to attend the game. (Fishbein & Ajzen, 1975; Trail, Fink, & Anderson, 2000)
Behavioral Intention (Watching)	A spectator's intentions to watch the game through media (e.g., TV, Internet, Smart Phone, etc.). (Fishbein & Ajzen, 1975; Trail, Fink, & Anderson, 2000)
Convenient Viewership	The convenience with which spectators can review instant replay through media.
Efficient Game Operation	The extent to which spectators perceive efficiency in game operation by using technology in sport officiating.
Enjoyment	The extent to which spectators can feel fun, excitement, and enjoyment when reviewing judgment by the officiating technology. The degree of pleasure when reviewing instant replay that is experienced when using technology in sport officiating. (Davis, Bagozzi, & Warshaw, 1992)
Fair Judgment	A referees' judgment free from bias, dishonesty, or injustice while using technology in sport officiating. The extent to which spectators can feel fairness while using technology in sport officiating.
Performance Expectancy	The degree to which a spectator believes that using officiating technology will help referees' accurate judgment. (Venkatesh, Morris, Davis, & Davis, 2003)
Trust toward Outcomes	The degree of trust placed in calls made by referees using officiating technology.

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Officiating technology usage in sports has grown as an important issue to sport business organizations and sport fans. In order to better understand the use of officiating technology in the sport consumer behavior context, sport organizations or sport governing bodies need to explore sport consumers' perceptions related to officiating technology. Additionally, it is necessary to examine how consumers perceive technological components (e.g., enjoyment, usefulness, etc.) with the use of technology in sport officiating. The purpose of the this study are to advance our understanding of consumers' decision making process on the use of sport officiating technology by proposing a research model incorporating performance expectancy, trust toward outcomes, attitude toward events, and behavioral intentions and to explore the influence of consumer demographic on their perceptions toward officiating technology. This study suggests that spectator's expectancy of officiating technology performance consists of fair judgment, enjoyment, efficient game operation, and convenient viewership. Moreover, the findings of the study confirmed the relationships of performance expectancy and certain psychological factors, trust toward outcomes, which influence the decision of the spectator's future intention. This provides valuable information for better understanding officiating technology usage in sports.

CHAPTER 1
INTRODUCTION

Significance of Sport Technology

Today, sport and technology have become an inseparable part of our lives, changing just about every sport in all kinds of ways, from the equipment technology to electronic decision-making and performance improving drugs and therapies (Liebermann, Katz, Hughes, Bartlett, McClements, & Franks, 2002; Savulescu, Foddy, & Clayton, 2004; Ross, 2010). These advancements include sporting opportunities for disabled athletes and instant replays for more accurate judgment during controversial situations. Moreover, video analysis and various software programs help train and support coaches. The use of technology is the best way to give coaches the support they need to develop the coaching skills necessary to help their athletes' perform better than before (Ahrend, Diamond, & Webber, 2010).

Fuss, Subic, and Ujihashi (2008) suggested that "transfer and integration of knowledge from a wide range of disciplines and industries has generated a rapid technological change in sports in modern times" (p. 5). Technological advancements make sports faster, more powerful and enjoyable. In other words, technology plays a key role in helping athletes' performance by preventing injury, improving safety (Bjerklie, 1993; Gelberg, 1995), and increasing participation and spectatorship (Miah, 2000b). Meanwhile some scholars have argued that technology negatively affects sport performance in various ways, including dehumanizing performances (Fraleigh, 1984; Hoberman, 1992; Miah, 2001). Hi-tech swimsuits are an example. Swimmers may be more focused on their swimsuit technology than their swim skills. Hi-tech swimsuits are considered a key factor to the competition outcome by the swimmers.

The sport industry has constantly been changing over the years due in part to the use of technology. Also, technology has a significant impact on sport businesses in a variety of ways

(Howard & Crompton, 2005). Howard and Crompton (2005) argued that technological advances in sports could be both threats and opportunities. New technologies not only create new competitors, such as online-video games and movies, but also allow spectators to enjoy the game more comfortably and conveniently.

Technology and Sport Officiating

In recent years, sport media technology (e.g., instant replay, Hawk-Eye system) has had a significant impact on fan experiences in spectator sports. For example, instant replay helps referees make calls when a controversial decision must be made. The following examples show bad-calls which were recently issued in sport events.

> In 2010 FIFA World Cup South Africa, Frank Lampard (England Mid-fielder) was denied an equalizing goal by referee Jorge Lasrrionda of Uruguay even though instant replay confirmed what was obvious to millions worldwide watching live, that the ball was well over the goal line. After the missed-call England would yield two more goals and failed in the quarter-finals of 2010 FIFA World Cup South Africa (Lewis, 2010).

> With two outs in the ninth, and Armando Galarraga (Detroit Tigers pitcher) not having allowed a single Cleveland Indians player to reach even first base, he needed only one more out to complete the 21st ever perfect game in the U.S. major leagues. However, He lost his chance for a perfect game on a missed-call that first base umpire Jim Joyce later admitted he blew (Lage, 2010).

The outcome of poor judgment can be detrimental for the integrity of the sport and fan experience. In part, due to referees' blown-calls, England failed to advance in the 2010 World Cup tournament and Galarraga could not list his name in major league history. These incidents support the importance of using technology as an officiating tool. Regular and controversial referees' judgments and lack of research on the nature of consumers' behavioral response to the use of technology in sport officiating make it an important area of investigation.

In the early adoption stages, the use of technology is perceived to slow down the speed of the game and hurt the tradition and spirit of sport. Nevertheless, technology is becoming a

more important tool within sport officiating because it facilitates the decision-making of officials for controversial situations while providing critical information for fair judgment. Fair judgment was considered as a key determinant that decides consumers' event quality perception in sport events (Ko, Kim, Kim, & Lee, 2010b).

A Contextual Overview of Technology Usage in Sport Officiating

In sport events, referees, umpires, judges, official scorers, and other sport officials are charged with applying the rules of the sport and administering the game in a fair and proper manner (Biedzynski, 1994). Today, numerous new technologies designed to enhance the effective decision-making of referees exist. They include a variety of devices such as the instant replay, Hawk-Eye system, electronic scoring system, smart ball, and the electronic timer. Digital camera technology has become a popular tool adopted in a variety of sport events along with advancing technology in sport media. The Hawk-Eye system, for example, was first officially adopted in the 2005 NASDAQ-100 tennis Open (also known as the Miami Masters), and allows a referee to request an instant replay review when a player appeals a disputed call. The Hawk-Eye system provides a computerized video of the line-call on the large screen of the stadium. The line-call video is also available to fans watching television at home. The Hawk-Eye system provides an instant "in" or "out" call.

In the United States, instant replay has been adopted in most of the major professional sports leagues. The National Football League (NFL), Major League Baseball (MLB), National Basketball Association (NBA), and National Hockey League (NHL) all utilize instant replay in their games for officiating. Furthermore, other professional sports, including cricket, rugby, and auto racing are using new technology to better enforce their rules. Recently, the NBA announced that it has again expanded instant replay (NBA, 2010). The NBA notes that "in the last two minutes of regulation and in all of overtime, referees can use instant replay to determine whether

the ball hit the rim (and whether the shot clock should be adjusted) and to determine who last touched a ball that goes out-of-bounds. Referees can also adjust the game clock on reviewed out-of-bounds plays in crunch time" (NBA, 2010). In cricket, a third umpire sits off the ground with quick access to instant replay to assist with the decision-making of chief umpires. The umpires communicate each other through wireless technology.

Officiating technology has been adopted by amateur sport events as well. The National Collegiate Athletic Association (NCAA) regulations for football, basketball, and hockey all provide for video replay technology in the decision-making of officials. Additionally, the World Taekwondo Federation (WTF) has announced that a new scoring system will be tested before the 2012 London Olympics (Creighton, 2011). With this new technology, athletes will wear special electronic equipment that creates a wireless signal when they hit sensors on their opponent's vest.

Statement of Problem

Despite the increased importance of the use of technology in sport officiating, only a few studies have been conducted in the field of sport management (Ko, Cattani, Chang, & Hur, 2011; Liebermann et al., 2002; Ross, 2010; Savulescu et al., 2004). In particular, from a marketing standpoint, it is necessary to conduct systematic research to clearly understand consumers' response to technology-aided officiating.

In order to better understand the use of officiating technology in the sport consumer behavior context, sport organizations or sport governing bodies need to explore sport consumers' perceptions related to officiating technology. Additionally, it is necessary to examine how consumers perceive technological components (e.g., enjoyment, usefulness, etc.) with the use of technology in sport officiating. Behavioral theories such as the theory of reasoned action (TRA;

Fishbein & Ajzen, 1975) and the technology acceptance model (TAM; Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) seem to explain sport consumer behavior very well.

Purpose of the Study

Officiating technology in a sport event would reduce erroneous calls made by referees and umpires, provide another source of entertainment for spectators, and help spectators better understand the decisions made by referees. However, systematic research has not been done on whether these are actually being actualized among spectators. Officiating technology is correctly one of the most important aspects of sports. A fan watching a sporting event on television can not only enjoy a high definition picture, but also receive expert analysis during the events and make their own decisions on plays.

Therefore, the purpose of the current study was twofold: (1) to advance our understanding of consumers' decision making process on the use of sport officiating technology by proposing a research model incorporating performance expectancy, trust toward outcomes, attitude toward events, and behavioral intentions and (2) to explore the influence of consumer demographic on their perceptions toward officiating technology.

For the purpose of this study, a research model was proposed based on the literature (Figure 1-1). In the research model, performance expectancy directly influences spectators' perceptions of trust toward outcomes and attitude toward events as well as behavioral intention. Trust toward outcomes and attitude toward events were hypothesized to predict spectators' behavioral intention. A spectators' attitude toward events is directly influenced by their perception of the trust toward outcomes.

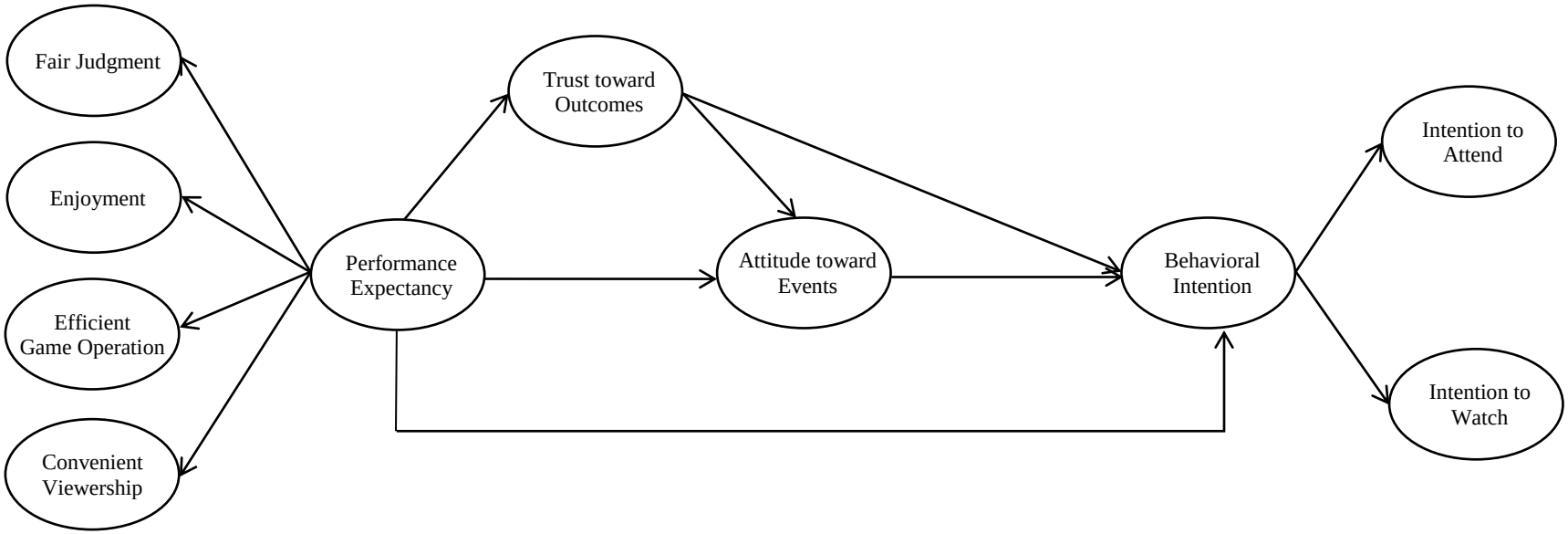

Figure 1-1. A proposed model.

CHAPTER 2
LITERATURE REVIEW

A literature review is presented to provide a conceptual background for the study and to develop a framework that incorporates performance expectancy, trust toward outcomes, attitude toward events, and spectator sport behavioral intentions.

Theoretical Background

Theory of Reasoned Action (TRA)

Many researchers have studied the relation between attitude and behavioral intention in consumers' use of technology (Adams, Nelson, & Todd, 1992; Bagozzi & Kimmel, 1995; Dabholkar, 1996; Davis, 1989; Davis et al., 1989; Hill, Smith, & Mann, 1987). The theory of reasoned action (TRA; Fishbein & Ajzen, 1975), supported mostly by the social psychology literature, has been applied successfully to identify key points of consumers' decision-making (Taylor & Todd, 1995). The TRA is a broadly studied theoretical model of consumer behavior (Ajzen & Fishbein, 1980; Davis, 1989; Davis et al., 1989; Ha, 1998). The goal of the TRA is to explain how an individual is led to an actual behavior, and also to predict and understand the behavior of individuals. The TRA suggests that behavioral intention is formed by individuals' attitude toward behavior and subjective norms (Fishbein & Ajzen, 1975). The TRA explains that actual behavior is a function of individuals' willingness to carry out a behavioral intention. The behavioral intention, in turn, is a function of two determinants: the attitude toward behavior (the personal factor) and the subjective norms (the social factor).

An attitude is defined as "the affect for or against a psychological object" (Thurstone, 1931, p. 261). Fishbein and Ajzen (1975) described that an "attitude is learned, it predisposes action, and such actions are consistently favorable or unfavorable toward the object" (p. 11). Consequently, attitude is defined as "a person's favorable or unfavorable evaluation of an object"

(Fishbein & Ajzen, 1975, p. 12). In other words, a person who thinks positively toward a certain behavior or object will have a favorable attitude, whereas a person who thinks negatively toward a certain behavior or object will have an unfavorable attitude.

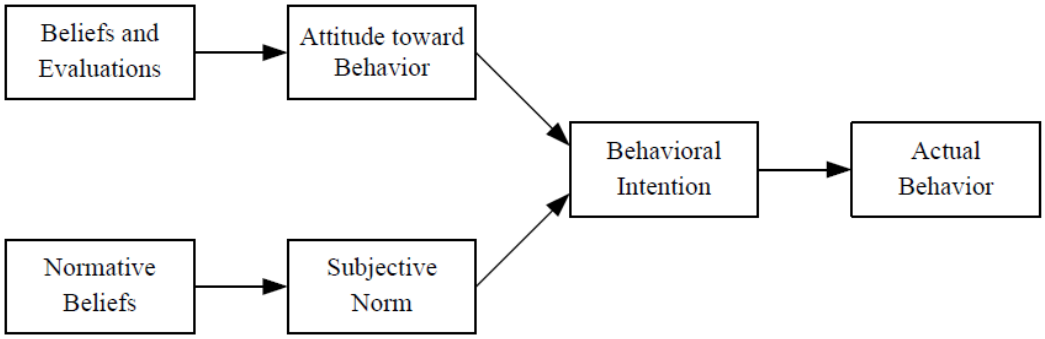

Figure 2-1. Theory of Reasoned Action (Fishbein & Ajzen, 1975).

Subjective norm is defined as "a person's perception that most people who are important to him think he should or should not perform the behavior in question" (Fishbein & Ajzen, 1975, p. 302). Fishbein and Ajzen regard subjective norm as a social factor and state "a person who believes that most referents with whom he is motivated to comply think he should perform the behavior will perceive social pressure to do so" (Ajzen & Fishbein, 1980, p. 7). If people have a favorable attitude toward the behavior, they will perform the behavior and they feel social pressure to engage in the behavior.

However, there are some limitations; it does not clearly specify the beliefs that are operative for a certain behavior; it only examines attitude and subjective norm and does not consider other variables that affect the actual behavior. Further, the observations associated with the theory were based on individual self-reports.

Technology Acceptance Model (TAM)

The technology acceptance model (TAM) was developed by Davis and Bagozzi in 1989. Davis (1989) addressed why users accept information technology and proposed perceived

usefulness and perceived ease of use are the primary beliefs why users accept such systems (see Figure 2-2). A large number of studies have ascertained that the TAM considered one of the most powerful and effective models in information systems research to explain user acceptance of technology (Igbaria et al., 1997; O'Cass & Fenech, 2003; Venkatesh & Davis, 2000). The TAM has been confirmed for predicting users' acceptance for various technologies, including banking technology (Chau & Lai, 2003; Lai & Li, 2005; Suh & Han, 2002), online and mobile auctions (Stern, Royne, Stafford & Bienstock, 2008; Wang & Barnes, 2009), mobile commerce technology (Bruner & Kumar, 2005), online games (Hsu & Lu, 2004), and telemedicine technology (Hu, Chau, Sheng, & Tam, 1999).

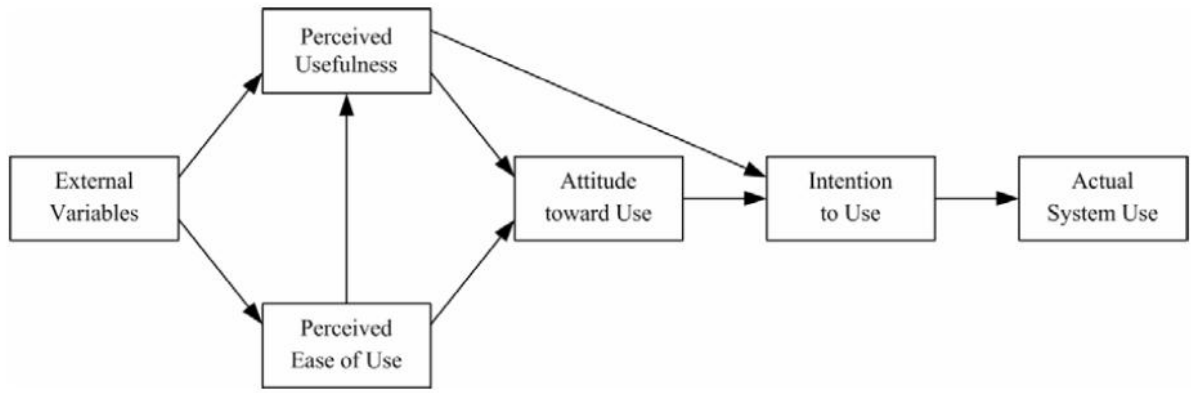

Figure 2-2. Technology Acceptance Model (Davis, 1989; Davis et al., 1989).

The TAM adopts the TRA (Fishbein & Ajzen, 1975), in that the model postulates that beliefs (i.e., attitude toward behavior and subjective norm) determine behavioral intentions, which determine behavior. While the TRA beliefs only affect attitude, perceived usefulness in the TAM is expected to influence both attitude and behavioral intention (Davis, 1989; Davis et al., 1989). Under the TAM, even if the user has a negative attitude toward the system, he or she may adopt the information system for the reason that it boosts his or her performance. Whereas the TRA is used to explain human behavior across situations, the TAM is apt to explain more

variance in behavioral intention, particularly when applied in a technology context (Davis, 1989; Davis et al., 1989).

Perceived usefulness refers to "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320) and perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). Additionally, Davis et al. (1992) found perceived enjoyment was an intrinsic motivation factor that influences users' acceptance. Perceived enjoyment refers to "the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated" (Davis et al., 1992, p. 1113). Davis et al. (1992) suggested perceived usefulness, perceived ease of use, and perceived enjoyment are the significant determinants of attitude toward users acceptance of technology. In other words, attitude mediates the effect of perceived usefulness on intention. Also they hypothesized that attitude did not fully mediate the link between usefulness and intention. Additional research was conducted and supported these casual relations (Lai & Li, 2005; Lee, Fiore, & Kim, 2006; Page-Thomas, 2006; Shin, 2004).

While the TAM has been considered as a solid and parsimonious model in the information systems field, only a few studies have addressed the TAM in the sport management literature. Recently, Ko et al. (2011) examined consumers' perceptions of an electronic scoring system adopted in Taekwondo events. They identified factors that significantly influenced consumers' attitude and purchase decision by using the TAM as a theoretical framework. Ko et al. (2011) found that the consumers' perceptions and attitude toward the new electronic scoring system were positive and the TAM key factors including usefulness, ease of use, and enjoyment positively influenced consumers' attitude and purchase intentions. On the other hand, the current

study centered on the usefulness of officiating technology and the indirect acceptance of officiating technology by spectators through trust toward outcomes.

Kwak, Lim, Lee, and Mahan (2010) examined the antecedents and consequences of winning expectancy in fantasy sports and found that perceived football knowledge, perceived ease of use of the service Website, and enjoyment as predictors of winning expectancy, and time and money involvement as consequences. Moreover, Kwak and McDaniel (2011) explored antecedents to consumer adoption of online fantasy sports leagues by employing the TAM as a theoretical framework. They found that attitude toward the televised sport, perceived ease of use in relation to fantasy sports websites, perceived knowledge of the sport, and subjective norms all played a role in explaining participants' attitudes and behavioral intentions towards playing fantasy football (Kwak & McDaniel, 2011).

Mahan (2011) investigated the effectiveness of social media by investigating the essential factors of consumer response. Mahan (2011) used the TAM as a framework for examining consumer preferences for a digital social media. The study confirmed the antecedents (i.e., involvement and convenience) to consumer motivation for using digital social media (Mahan, 2011).

The aforementioned studies focus mainly on the direct acceptance of technology by consumers. In other words, they seek to determine the effects of the direct use of technology and are based on the TAM theory. What separates this research from the others is that it is centered on the indirect acceptance of technology. Officiating technology is not directly used by the spectators, but is something that is discussed and implemented by sport organizations for use in making calls in games. This means that if spectators put their trust in it and it creates a positive attitude toward events, technology would have an effect on the spectators' behavioral intention.

Exploring this is one of the goals of this current study. Thus, this research looks at spectator's behavioral intention as a reason for indirect acceptance of officiating technology.

A Proposed Model and Hypothesis Development

From a sport manager's perspective, how spectators perceive the use of technology in sport officiating is an important issue in order to attract fans and satisfy their demands. Although researchers have addressed technology adoption, attitudes, and behaviors in various contexts (e.g., Bruner & Kumar, 2005; Davis, 1989; Davis et al., 1992; Hsu & Lu, 2004), research examines the use of technology in sport officiating is still lacking. Accordingly, to better understand and expand knowledge regarding technology adoption, different theories and approaches are used in the current study.

Performance Expectancy

Venkatesh, Morris, Davis, and Davis (2003) empirically reviewed the relevant literature, and presented a new theory of technology acceptance termed the Unified Theory of Acceptance and Use of Technology (UTAUT). The purpose of the UTAUT was to build upon the available models in use at the time to better explain user intentions to use information system. The UTAUT is grounded on eight models in the field of information technology acceptance research including the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975), the Technology Acceptance Model (TAM; Davis, 1989), the Motivational Model (MM; Davis, Bagozzi, & Warshaw, 1992), the Theory of Planned Behavior (TPB; Ajzen, 1991), the Combined TAM and TPB (C-TAM-TPB; Taylor & Todd, 1995), the Model of PC Utilization (MPCU; Thompson, Higgins, & Howell, 1991), the Diffusion of Innovation Theory (DIT; Rogers, 2003), and the Social Cognitive Theory (SCT; Bandura, 1986).

Venkatesh et al. (2003) presented four core determinants of behavioral intention and actual usage (i.e., performance expectancy, effort expectancy, social influence, and facilitating

conditions) and four moderators of key relationships (i.e., gender, age, experience, and voluntariness of use). Accordingly, they found three direct determinants of intention to use (i.e., performance expectancy, effort expectancy, and social influence) and two direct determinants of actual usage (i.e., facilitating conditions and behavior intention). Also they confirmed four moderators significantly influence key relationships (Venkatesh et al., 2003).

Performance expectancy is defined as "the degree to which an individual believes that using the system will help him or her increase job performance" (Venkatesh et al., 2003, p. 447). Performance expectancy is linked to items that would lead to an increase in job performance. In the UTAUT, performance expectancy captures the constructs of perceived usefulness (TAM and C-TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), relative advantage (DIT), and outcome expectations (SCT).

In this study, performance expectancy will be used as a main construct in order to explain spectators' perceptions toward the use of technology in sport officiating. Performance expectancy is defined as "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al., 2003, p. 447). Performance expectancy is based on the perceived usefulness in the TAM. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). Accordingly, in the current study, performance expectancy is defined as the degree to which a spectator believes that using technology in sport officiating will help a referee's accurate judgment. After reviewing the literature related to the performance expectancy, the researcher identified the following four sub-constructs: fair judgment, enjoyment, efficient game operation, and convenient viewership. Each is briefly described below.

Fair Judgment

The first sub-dimension in the proposed model, fair judgment, refers to the extent to which spectators can feel fairness while using technology in sport officiating, or a referees' judgment free from bias, dishonesty, or injustice in sport officiating. Incorrect-calls by referees may seriously impact on the financial status of the club or the player's career (Craven, 1999). Fair judgment was considered as a key determinant influencing consumers' event quality perception in sport events (Ko et al., 2010b).

Recently, an electronic scoring system was adopted by the World Taekwondo Federation in response to the call for officiating technology (Chi, 2005). This technology is expected to improve the quality of officiating judgment in their events.

Enjoyment

Perceived enjoyment is defined as "the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated" (Davis et al., 1992, p. 1113). In the current study, enjoyment refers to the degree of pleasure when reviewing instant replay that is experienced when using technology in sport officiating, or the extent to which spectators can feel fun, excitement, and enjoyment when reviewing the officiating technology. Enjoyment has played a key role in consumption behavior (Holbrook, Chestnet, Olivia, & Greenleaf, 1984; Holbrook & Hirschman, 1982). Furthermore, hedonic values such as enjoyment, feelings, and fun, have been involved in information processing (Babin, Darden, & Griffin, 1994; Holbrook & Hirschman, 1982). Thus, enjoyment is a significant dimension in an attempt to understand spectators' attitudes and to predict spectators' behavioral intentions.

Efficient Game Operation

In the current study, efficient game operation refers to the extent to which spectators perceive efficiency in game operation when using technology in sport officiating. Sometimes spectators experience game delay due to coaches and players complaints against a referee's decision. For years, officiating technology has been considered as innovative tool for reducing the number of disputed decisions made by referees. For example, the World Taekwondo Federation recently adopted an electronic scoring system to improve the quality of event operations. This officiating technology is expected to increase the efficiency in game operations by removing coaches and players complaints against controversial calls made by referees (Ko et al., 2011). For similar reasons, the International Tennis Federation (ITF) has adopted the Hawk-Eye system.

Convenient Viewership

According to the TAM, perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). Davis (1989) and Davis et al. (1992) found a positive link between the perceived ease of use and attitude toward use of technology as well as between perceived ease of use and intention to use information technology. For example, Ha, Yoon, and Choi (2007) found perceived ease of use had a positive impact on the attitude toward playing mobile games. Also, Van der Heijden (2004) found perceived ease of use is a strong predictor of behavioral intention to use.

Based on the literature, convenient viewership refers to the extent to which spectators feel convenience when using technology in sport officiating. During the last twenty years, technological advances in the media have been a key driver in the development of sports spectatorship. For example, consumers are able to watch a game by using the Internet, a smart phone, or a tablet PC. In addition, consumers can review or record a play several times by using

media technology, even if they lost the live broadcast. Thus, in the current study, the following hypotheses were developed:

> **H1a~ H1d:** Performance expectancy consists of fair judgment, enjoyment, efficient game operation, and convenient viewership.

Trust toward Outcomes

Trust is a multidimensional concept that can be researched from several different approaches, including social psychology, sociology, economics, and marketing (Doney & Cannon, 1997). There are different definitions of trust that have been studied (Berry, 1995; Jarvenpaa, Tractinsky, & Vitale, 2000; Moorman, Zaltman, & Deshlande, 1992; Morgan & Hunt, 1994). Trust is defined as "the perception of confidence in the exchange partner's reliability and integrity" (Morgan & Hunt, 1994, p. 23). In addition, trust is defined as "a willingness to rely on an exchange partner in whom one has confidence" (Moorman et al., 1992, p. 315). In most cases, trust is an important factor for successful relationships (Moorman et al., 1992; Sargeant & Lee, 2002). According to Morgan and Hunt (1994), trust is a key mediating factor of successful marketing relationships. They found greater trust results in a greater relationship commitment.

Also, trust has been conceptualized to include two dimensions, credibility and benevolence in the business to consumer context. Sirdeshmukh, Singh and Sabol (2002) identified competence and benevolence as two key dimensions of consumer trust. To develop trust, consumers rely on the formation of expectancies about the expertise and intentions of a company. Previous experiences of the product or service provide basis for assessing the company's expertise and ability to deliver on its promises which were called the credibility dimension of trust (Crosby, Evans, & Cowles, 1990; Ganesan, 1994; Morgan & Hunt, 1994).

Gefen, Karahanna, and Straub (2003) suggested that perceived ease of use should increase trust through the perception that the company is devoted to the relationship. Because first time consumers have limited information, their expectations about performance reflect how they value information on a Web site. Also, comparison standards in terms of price, specifications and features can help consumers decide within similar products. If consumers perceive that a Web site has good tools that enables the purchasing of products, consumers will be more likely to express positive expectations of performance. Similarly, spectators will consider the effectiveness of officiating technology. When spectators perceive that officiating technology has advantages, they will be more likely to show positive expectations of performance. Thus, in the current study, the following hypothesis was developed:

H2: Performance expectancy is positively related with trust toward outcomes.

Jarvenpaa et al. (2000) developed and tested a theoretical model about the antecedents and consequences of trust in e-commerce. They found that trust is affected by customers' evaluation of Internet stores' reputation and size, and the degree to which consumers trust in Internet store affects their perceptions of the risk involved in purchasing from the store and their attitudes toward the store. Gefen et al. (2003) suggested that trust directly influenced purchasing intention and was the most important factor when financial transactions were made online.

Trust plays a significant role in the donor intentions. Individuals who have high level of trust toward a blood bank had a positive donation behavior (Andaleeb & Basu, 1995). Sargeant and Lee (2004) examined the relationship between trust toward an organization and donor behavior. They found that trust had a significant influence on donor behavior.

Previous studies about trust have shown that trust had a significant impact on perceptions and behaviors. Therefore, trust toward outcomes made by referees using officiating technology

would be an important factor in influencing spectators' attitude toward events and behavioral intention. Thus, in the current study, hypotheses 3 and 4 were established to verify the effect of trust.

H3: Trust toward outcomes is positively related with attitude toward events.
H4: Trust toward outcomes is positively related with behavioral intention.

Attitude toward Events

An attitude is defined as the tendency to respond to an object with some degree of favorableness (Ajzen, 1991) or an overall evaluation of how much individuals like or dislike an object, issue, person, or action (Petty & Cacioppo, 1986). Hoyer and MacInnis (2004) also described attitude as "a relatively global and enduring evaluation of an object, issue, person, or action" (p. 130).

In the field of marketing, attitude toward marketing perspective (e.g., sponsorship, product, and brand) has frequently been measured (Keller, 1993; Mitchell & Olson, 1981). Researchers have studied consumers' attitude towards a product in order to understand their purchase intention. The act of buying a product is the result of a consumers' attitude toward a product. Consumers' attitude toward a product could be influenced by the value of the characteristics of a product to consumers (Fishbein & Ajzen, 1975). Therefore, consumers' perceived value of a product is a fundamental factor in their attitude toward the product. In sponsorship research, some scholars have examined the relationship between attitude toward the brand and sponsorship effect (Madrigal, 2001; McDaniel, 1999). For instance, Madrigal (2001) found that favorable beliefs about the benefits from sponsorship and team identification had positive relationships with attitude toward the brand. In addition, various studies have shown that perceived usefulness is positively related to the attitude in online consumption (Koufaris, 2002; Lin & Lu, 2000), in mobile commerce technology (Bruner & Kumar, 2005), and in sport

consumption (Ko et al., 2011; Kwak et al., 2011; Mahan, 2011).Consequently, previous literature from marketing, management information systems, and sport management indicated that technology usage had a positive influence on consumers' attitudes (Ko et al., 2011; Hsu, Lu, & Hsu, 2007; Slyke, Belanger, & Comunale, 2004). Thus, in the current study, the following hypothesis was developed:

H5: Performance expectancy is positively related with attitude toward events.

Behavioral Intention

The prediction of actual consumers' behavior is a primary interest of marketers. Grewal, Monroe, and Krishnan (1998) presented that behavioral intention has been used to predict actual consumption behavior. Several studies have shown that consumer attitude is an important predictor of behavioral intentions (e.g., Ajzen & Fishbein, 1975; Shimp, 1981). For example, Fishbein and Ajzen (1975) noted "if one wants to know whether or not an individual will perform a given behavior, the simplest thing one can do is to ask the individual whether he intends to perform that behavior" (p. 369).

A positive link between attitude and intention has been established in previous literature (Fishbein & Ajzen, 1975). In the field of sport management, attitude has been measured as a determinant of behavioral intention in adoption of officiating technology in sports. For example, Ko et al. (2011) found a positive relationship between attitude toward an electronic body protector and purchase intention. Kwak and McDaniel (2011) explored the antecedents to adopting fantasy sports league websites. They found that attitude of the televised sport, perceived ease of using in relation to fantasy sports websites, perceived knowledge of the sport and subjective norms all played a role in explaining consumers' attitude and behavioral intention toward playing fantasy football. They also found a positive link between attitude toward televised sport and attitude toward playing online fantasy game; however, they failed to explain a

positive relationship between attitude toward televised sport and intention to play online fantasy sport (Kwak & McDaniel, 2011).

Trail et al. (2003) proposed that consumers' behavioral intention is an appropriate forecast of actual spectator sport consumption. Therefore, the concept of attitude has played a significant role and been one of the most generally used determinants of behavioral intention. Thus, in the current study, the following hypothesis was developed:

H6: Attitude toward events is positively related with behavioral intention.

Various studies have shown that perceived usefulness is positively related to behavioral intention in online consumption (Lin & Lu, 2000; Koufaris, 2002), in mobile commerce technology (Bruner & Kumar, 2005), and in sport consumption (Ko et al., 2011; Kwak et al., 2011; Mahan, 2011). Performance expectancy is considered as the most important determinant to an individual's intention to use a new technology. Also, performance expectancy is important to technology acceptance decision-making and may influence behavioral intention both directly and indirectly through the determinant of attitude (Vekatesh et al., 2003).

In extension of previous research, performance expectancy, which represents relational constructs such as fair judgment, enjoyment, efficient game operation, and convenient viewership, may also influence spectators' intention to attend or watch a game. Based on previous research findings, the researcher expects that spectators who perceive a high level of performance expectancy intend to attend or watch more games. Thus, in the current study, the following hypothesis was developed:

H7: Performance expectancy is positively related with behavioral intention.

CHAPTER 3
METHODOLOGY

The main purpose of this study was to investigate the effect of four spectators' performance expectancy of officiating technology usage (fair judgment, enjoyment, efficient game operation, and convenient viewership) and the sport consumer's trust toward outcomes, attitude toward events, and behavioral intention. In order to obtain empirical data on performance expectancy, sport consumption behavior, and demographics, an online survey was collected. Data analyses were performed using various statistical techniques (e.g., descriptive statistics, Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM) test, etc.). This chapter will present the participants and procedures, instrumentation, a pilot test, and data analyses.

Participants and Procedures

A convenience sampling method was used to recruit participation. After IRB approval, using an online survey, the researcher recruited potential participants. The target participants of this study were college students, enrolled in a Florida, who were 18-years of age or older. The data collecting was conducted in the 2012 spring semester. The researcher contacted instructors and requested to distribute an online survey link to their students. Participants were asked to participate in the survey. If they agreed, the researcher provided a brief explanation of this study, and instructions about the survey, and an informed consent. Participation was voluntary and confidential.

A Panel of Experts

For validity purposes, a panel of experts was asked to rate each item in terms of relevance, representativeness, and clarity. Panel members consisted of 10 graduate students and 3 sport management professors. Based on the evaluation of the instrument by the panel of

experts, the researcher revised the survey accordingly. The cover letter and instrument is included in Appendix A.

A Pilot Test

To test reliability and validity of the scale, a pilot test was conducted. The purposes of the pilot test were: (1) to ensure appropriateness of the items, (2) to determine the sample size for the main study, (3) to identify potential problems before using the proposed data analysis technique (Groves, Fowler, Couper, Lepkowski, Singer, & Tourangeau, 2011). The target participants were 50 undergraduate students who were enrolled in sport management classes at a university. Participants were asked to answer the questionnaire by following standard procedures in accordance with IRB protocols. The cover letter and instrument for the pilot test is include in Appendix B.

For the data analyses of the pilot test, Cronbach's alpha, average variance extracted (AVE), item-to-total correlations, and factor loadings were employed using the Statistical Package for the Social Sciences (SPSS 18.0) and Analysis of Moment Structure (AMOS 18.0). After the analyses of the pilot study data, the initial instrument was revised.

Instrumentation

Item Generation

A questionnaire was developed that consisted of five sections: performance expectancy construct, trust toward outcomes, attitude toward events, behavioral intention, and demographic variables. To avoid response bias, items were randomly placed. All items were selected and modified based on the literature. Multiple measures for each construct were developed and modified from items in existing scales including the TRA (Fishbein & Ajzen, 1975), TAM (Davis et al., 1989), and UTAUT (Venkatesh et al., 2003).

Performance expectancy consisted of four subscales (fair judgment, enjoyment, efficient game operation, and convenient viewership) represented by a total 12 items. The items were adopted and widely-used by researchers examining performance expectancy in the IS (Information Systems) adoption and marketing context. Items were then modified from existing scales (Childers, Carr, Peck, & Carson, 2001; Davis 1989; Davis et al., 1992; Ko et al., 2011; Moon & Kim, 2001).

Fair Judgment

Based on the TAM (Davis, 1989), perceived usefulness has been shown as a strong predictor in the adoption of IS system. To measure fair judgment, the researcher utilized the perceived usefulness scales from the TAM. Three items from Davis (1989) were adopted and modified as follows: "The use of technology would improve fairness in officiating"; "Using technology is useful for fairness in officiating"; and "Using officiating technology would decrease referees' blown-calls." And one item from Ko et al. (2011) was adopted and modified to measure fair judgment: "Using technology would enhance the quality of judgment." The scale of fair judgment was represented by a total of four items and used a seven-point Likert-type scale, ranging from (1) "Strongly disagree" to (7) "Strongly agree."

Enjoyment

Perceived enjoyment, as an intrinsic motivation in IS adoption, was reported within the TAM (Davis et al., 1992). Scholars utilized perceived enjoyment as end users' intrinsic motivation in various fields including IS adoption (Van der Heijden, 2004) and mobile game adoption (Ha et al., 2007). To measure enjoyment, in the current study, the researcher employed Davis et al. (1992) scale, Moon and Kim (2001) scale, Ko et al. (2011) scale, and Childers et al. (2001) scale. The four items were modified as follows: "Using technology in officiating gives enjoyment to me"; "It is fun to watch when a sport event uses this technology in officiating";

“Using technology in officiating entertains me”; and “It is enjoyable to watch reviews using this technology.” The scale of enjoyment was represented by a total of four items and used a seven-point Likert-type scale, ranging from (1) “Strongly disagree” to (7) “Strongly agree.”

Efficient Game Operation

To measure efficient game operation, the researcher developed a scale because a generally accepted scale that measures efficient game operation does not exist. Davis (1989) and Childers et al. (2001) scales were used to measure efficient game operation. The four items were developed and modified as follows: “The game operation is efficient due to adopting this technology”; “Using technology in officiating would reduce game delay”; “Using technology in officiating would make game operation smooth”; and “Using technology in officiating would improve efficiency in game operation.” The scale of efficient game operation was represented by a total of four items and used a seven-point Likert-type scale, ranging from (1) “Strongly disagree” to (7) “Strongly agree.”

Convenient Viewership

Childers et al. (2001) used a scale to measure convenience of shopping. The researcher, in the current study, modified and rephrased the items appropriately as follows: “Reviewing judgment through officiating technology would not require a lot of mental effort”; “Using technology in officiating would be a convenient way to review referees’ decision”; and “Using technology in officiating would allow me to review judgment several times through the media in a convenient manner.” The scale of convenient viewership was represented by a total of three items and used a seven-point Likert-type scale, ranging from (1) “Strongly disagree” to (7) “Strongly agree.” See Table 3-1.

Trust toward Outcomes

Four items form Palmatier, Dant, and Grewal (2007) and Crosby, Evans, and Cowles (1990) scales were used to measure trust toward outcomes. The researcher, in the current study, modified and rephrased original items to measure trust toward outcomes as follows: "The outcome of the events is trustworthy because of instant replays"; "I trust the outcome of the events when instant replays are used"; "The outcome of the events is dependable due to instant replays"; and "I can rely on the outcome of the events due to instant replays." The scale of trust toward outcomes was represented by a total of four items and used a seven-point Likert-type scale, ranging from (1) "Strongly disagree" to (7) "Strongly agree." See Table 3-1.

Attitude toward Events

Fishbein and Ajzen (1975) defined attitude as "an individual's positive or negative assessment of performing the behavior" (p. 216). Also, attitude has been considered a key factor in consumer behavior models. Based on previous literature, the researcher, in the current study, adopted and modified the attitude items. Spectators' attitude toward events was measured by using multiple semantic-type scales including, "In general, my attitude toward events is; bad/good; favorable/unfavorable; unsatisfactory/satisfactory; and negative/positive." Four-items were adopted from Chiders et al. (2001), and Bagozzi, Baumgartner, and Yi (1992), and Till and Busier (2000) scales. All items were measured on seven-point semantic-type scales. See Table 3-2.

Behavioral Intention

Spectator sport behavioral intentions were measured by using multiple-semantic-type scales. Participants were asked their intention to attend with the item "My future intention to attend College football game is; impossible/possible; very unlikely/very likely; improbable/probable." Respondents also were asked their intention to watch with the item "My

future intention to watch College football game is; impossible/possible; very unlikely/very likely; improbable/probable." A two-item intention scale was adopted from Barozzi et al. (1992); Till and Busler (2000); and Ko et al. (2011) scales. All items were measured on seven-point semantic-type scales. See Table 3-2.

Demographics

Demographic questions (e.g., age, gender, ethnicity) were added to the last section of the questionnaire. In addition, participants were asked about the number of College football games they attended and watched during the 2011-2012 season.

Data Analysis for Main Study

Data were analyzed using the Statistical Package for the Social Sciences (SPSS 18.0) and Analysis of Moment Structure (AMOS 18.0). Data analyses were performed using various statistical techniques (e.g., descriptive statistics, Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM) test).

Descriptive Statistics

In order to examine the basic characteristics of the data in this study, various descriptive statistics were employed using SPSS 18.0, including measured of central tendency and variability.

Measurement Model

Using AMOS 18.0, a confirmatory factor analysis (CFA) was conducted for the performance expectancy, trust toward outcomes, attitude toward events, and intention measures. The purpose of the CFA was to clarify the data and estimate how well the items represented the proposed latent constructs (Hair, Black, Babin, & Anderson, 2010). A CFA will confirm the fit between a model and data. If the data are statistically significant, the result of a CFA indicates that the measurement scale is acceptable.

Structural Model

Using AMOS 18.0, structural equation modeling (SEM) was conducted to examine the relationships among performance expectancy, trust toward outcomes, attitude toward events, and behavioral intention constructs. The purpose of SEM is to specify and examine both the path model of the latent variables and the measurement model between the latent variables and the observed variables (Bollen, 1989; Kline, 2010). If the data is statistically significant, the result of SEM indicates that the proposed model is acceptable.

Goodness of Model Fit

To examine the goodness of model fit, the following indexes were considered: chi-square (x^2/df), root mean square error of approximation (RMSEA), standard root mean squared residual (SRMR), and comparative fit index (CFI) (Hair et al., 2010; Hu & Bentler, 1999; Kline, 2010). In this study, the researcher followed the cutoff criteria for fit indices by adopting Hu and Bentler (1999) and Kline's (2010) recommendations. The ratio of values of chi-square less than 3.0 is considered to be a good fit (Kline, 2010) and less than 2.0 indicates an excellent model fit (Hayduk, 1996). According to Kline (2010), the root mean square error of approximation (RMSEA) represents that "badness-of-fit index in that a value of zero indicates that best fit and higher values indicate worse fit" (p. 138). Root mean square error of approximation (RMSEA) values of less than .06 indicate a good fit (Hu & Bentler, 1999), a range from .06 to .08 represents an acceptable fit, and exceeding .10 implies a bad fit (Browne & Cudeck, 1992). Standardized root mean square residual (SRMR) is the average different between the predicted and observed variances and covariances in the model, based on standardized residuals (Hair et al., 2010). A smaller value of SRMR indicates a good fit and higher value of SRMR represent a poor fit. Hu and Bentler (1999) and Kline (2010) recommend that the values less than .09 indicate a good fit. Kline (2005) defined a comparative fit index (CFI) as "the relative

improvement in fit of the researcher's model compared with a baseline model" (p. 140). A CFI value of .90 or higher is recommended for a good fit (Hair et al., 2010; Hu & Bentler, 1999; Kline, 2010).

Reliability

Reliability analysis is a measure of the internal consistency of indicators for a construct (Hair et al., 2010). The researcher conducted a reliability analysis by calculating Cronbach's coefficient alpha (α), construct reliability (CR), and average variance extracted (AVE). Nunnally and Bernstein (1994) defined Cronbach's coefficient alpha (α) as "the ratio of the sum of the covariances among the components of the linear combination (items), which estimates true variance, to the sum of all elements in the variance-covariance matrix of measures, which equals the observed variance" (p. 212). To test how well the items represent subscales, Cronbach's coefficient alpha (α) was utilized. Construct reliability (CR) is a measure of reliability based on the square of the total of factor loadings for a construct. Hair et al. (2010) recommended that the minimum acceptable values of Cronbach's coefficient alpha (α) and construct reliability (CR) are .70 (Fornell & Larcker, 1981; Nunnally & Bernstein, 1994). In addition, average variance extracted (AVE) provides "the overall amount of variance in the indicators accounted for by the latent construct" (Hair et al., 2010, p. 617). The recommended average variance extracted (AVE) value is greater than .50 (Fornell & Larcker, 1981; Hair et al., 2010).

Validity

Bollen (1989) defined construct validity as "whether a measure relates to other observed variables in a way that is consistent with theoretically derived predictions" (p. 188). In this study both convergent validity and discriminant validity were employed in order to establish the construct validity. Convergent validity refers to the degree to which different measurements measure the same construct (Kline, 2010; Anderson & Gerbing, 1988; Netemeyer, Johnson &

Burton, 1990). To examine convergent validity, indicator loadings and t-value should be conducted. Generally, the item loading value equal to or higher than .707 is needed to be considered a good convergent validity (Anderson & Gerbing, 1988). Discriminant validity assesses whether measurement of items that are supposed to be unrelated are, in fact, unrelated. Discriminant validity was conducted by examining the correlations between the constructs. The correlations among constructs should be less than .85 to establish discriminant validity (Kline, 2010).

Table 3-1. Items for measuring performance expectancy and trust toward outcomes

Scale	Source	Subject
Fair Judgment	Davis (1989) Childers et al. (2001) Ko et al. (2011)	IS adoption Online-Shopping Scoring Technology
Enjoyment	Davis et al. (1992) Moon & Kim (2001) Childers et al. (2001) Ko et al. (2011)	Coupons for shopping World-Wide-Web Online-Shopping Scoring Technology
Efficient Game Operation	Davis (1989) Childers et al. (2001)	IS adoption Online-Shopping
Convenient Viewership	Davis (1989) Childers et al. (2001)	IS adoption Online-Shopping
Trust toward Outcomes	Crosby et al. (1990) Palmatier et al. (2007)	Services Selling

Table 3-2. Items for measuring attitude toward events and behavioral intention

Scale	Source	Subject
Item: In general, my attitude toward events is;		
Bad/good	Bagozzi et al. (1992) Moon & Kim (2001) Ko et al. (2011) Childers et al. (2001)	Coupons for shopping World-Wide-Web Scoring Technology Online-Shopping
Unfavorable/favorable	Bagozzi et al. (1992) Till & Busier (2000) Ko et al. (2011)	Coupons for shopping Brand Scoring Technology
Unsatisfactory/Satisfactory	Bagozzi et al. (1992) Ko et al. (2011)	Coupons for shopping Scoring Technology
Negative/positive	Till & Busier (2000) Moon & Kim (2001)	Brand World-Wide-Web
Item: My future intention to attend a NFL game is; My future intention to watch a NFL game is;		
Impossible/possible	Bagozzi et al. (1992) Ko et al. (2011)	Coupons for shopping Scoring Technology
Very unlikely/very likely	Bagozzi et al. (1992) Till & Busier (2000) Ko et al. (2011)	Coupons for shopping Brand Scoring Technology
Improbable/probable	Bagozzi et al. (1992) Till & Busier (2000) Ko et al. (2011)	Coupons for shopping Brand Scoring Technology

CHAPTER 4
RESULTS

A total of 275 surveys were collected from students through the data collection procedure. The researcher excluded 23 surveys from the data because participants did not fully complete the survey or answered the questions with insincerity. The sample size of the study (*N* = 252) exceeded the minimum criteria (i.e., greater than 200) to test the proposed measurement model (Anderson & Gerbing, 1998; Hair et al., 2010; Weston & Gore, 2006).

In this chapter, the results of this study are presented in detail: (1) Descriptive Statistics, (2) Data Normality Test, (3) Measurement Model, and (4) Structural Model.

Descriptive Statistics

Demographics

In total, 252 participants completed online questionnaires. Among the respondents, 132 (52.4%) were male and 120 (47.6%) were female, and the average age of the participants was 23- years-old (*M* = 22.98, *SD* = 3.83). The majority of the participants were 18 to 22-years-old, and 154 (61.1%) were White/Caucasian, 60 (23.8%) were Asian, 17 (6.7%) were Hispanic, and 15 (6.0%) were African American. Demographic characteristics of are reported in Table 4-1.

Performance Expectancy Variables

Descriptive statistics including mean and standard deviation for performance expectancy variables are reported in Table 4-2. The mean of the performance expectancy factors (fair judgment, enjoyment, efficient game operation, and convenient viewership) ranged from 5.17 to 6.22. Standard deviations ranged from 0.92 to 1.45. Among the performance expectancy factors, fair judgment had the highest mean score (*M* = 5.91, *SD* = 0.87) on the seven-point Likert type scale. Within fair judgment factor, the item “Instant replay technology would be useful for improving fairness in officiating” had the highest mean score (*M* = 6.22, *SD* = 0.92). On the

other hand, efficient game operation had the lowest mean score among the performance expectancy factors (*M* = 5.25, *SD* = 1.27). Within efficient game operation factor, the item "The use of instant replays would make game operation smooth" had the lowest mean score (*M* = 5.17, *SD* = 1.41).

Trust toward Outcomes Variables

Descriptive statistics for trust toward outcomes variables are presented in Table 4-3. All items had a mean score greater than 4.0 (i.e., midpoint on the seven-point Likert type scale). The mean scores of the trust toward outcomes items ranged from 5.40 to 5.71 and standard deviations ranged from 1.05 to 1.23. The item "I trust the outcome of the events when instant replays are used" had the highest mean score (*M* = 5.71, *SD* = 1.05) and the item "The outcome of the events is dependable due to instant replays" had the lowest mean score (*M* = 5.40, *SD* = 1.23).

Attitude toward Events Variables

Table 4-3 reports the descriptive statistics for the respondents' attitude toward events. The means of all items for attitude toward events were above 4 on the seven-point semantic differential type scale and ranged from 5.80 to 6.16. Standard deviations of attitude toward events factors ranged from 1.06 to 1.36. Among the attitude toward events items, the item "Bad/Good" had the highest mean score (*M* = 6.16, *SD*= 1.06) and the item "Unsatisfactory/Satisfactory" had the lowest mean score (*M* = 5.80, *SD* = 1.36).

Behavioral Intention Variables

Table 4-3 displays the descriptive statistics for respondents' behavioral intentions. Behavioral intentions were measured as dependent variables in this study. The researcher examined spectators' behavioral intention by dividing different intentions (i.e., intention to attend and intention to watch) to investigate how spectators respond differently. The mean of all items for behavioral intention were above 4 on the seven-point semantic differential type scale

and ranged from 6.08 to 6.42. Standard deviations of behavioral intention factors ranged from 1.14 to 1.28. Among the intention to attend items, the item "Impossible/Possible" had the highest mean score (*M* = 6.25, *SD* = 1.24) and the item "Very unlikely/Very likely" had the lowest mean score (*M* = 6.08, *SD* = 1.33). On the other hand, the item "Impossible/Possible" had the highest mean score (*M* = 6.42, *SD* = 1.14) and the item "Improbable/Probable" had the lowest mean score (*M* = 6.33, *SD* = 1.28) among the intention to watch items.

Gender and Behavioral Involvement Differences for Trust toward Outcomes

In this study, a gender difference test was conducted to measure spectator's trust toward outcomes when using officiating technology based on gender and behavioral involvement differences. One way analysis of variance (ANOVA) was used to test for significant differences between gender and trust toward outcomes when using officiating technology. The results of the ANOVA are presented in Table 4-4 and Table 4-5. A comparison between gender and trust toward outcomes showed that there was no gender difference in trust toward outcomes made by referees using officiating technology. Additionally, there was no gender group difference.

In a similar manner, an ANOVA was conducted to examine difference of spectator's trust toward outcomes based on behavioral involvement. The researcher distinguished three groups in terms of the number of times attending or watching events during the 2011-2012 college football season (None, 1-4 times, and more than 5 times). The results of the ANOVA are reported in Table 4-6 and Table 4-7. There were no differences by trust toward outcomes in terms of the number of times attending and watching events.

Data Normality Test

The normality test was examined by the skewness and kurtosis of the data, as shown in Table 4-2 and Table 4-3. All absolute values of skewness were less than 2.58, recommended by Hair et al. (2010), which indicates a symmetrical distribution of the data. The range of the

skewness absolute value was between 0.53 and 2.46. Also most absolute values of kurtosis were less than 2.58, suggested by Hair et al. (2010). Several kurtosis values were higher than the cut-off value of Hair et al. (2010), but none of them were considered as an unacceptable case. According to Kline (2010), if an absolute value of kurtosis is less than 10.0, the data is fine. These values indicate a fairly normal distribution.

Measurement Models

The measurement model was tested by a confirmatory factor analysis (CFA) using AMOS 18.0 to evaluate the measurement model before estimating the casual relationship by the structural equation model. In this process, the researcher presented two different results of measurement models, dividing first-order and second-order measurement models.

CFA for the First-order Measurement Model

In the first-order measurement model, eight latent variables and a total of 29 indicators were tested to conduct the CFA. The results of the CFA for first-order model of performance expectancy revealed good model fit to the data (Chi-square = 300.884; Degree of freedom (*df*) = 98, x^2/df = 3.070, p = .000, RMSEA = .091, CFI = .928, and SRMR = .049) (see Table 4-8). Also the results of the CFA for first-order model of trust, attitude, and intentions showed good model fit to the data (Chi-square =120.584; Degree of freedom (*df*) = 59, x^2/df = 2.044, p = .000, RMSEA = .064, CFI = .983, and SRMR = .028) (see Table 4-8). This study used several model fit indices such as Root Mean Square Error of Approximation (RMSEA, < .05 is good and > .10 is fair), Comparative Fit Index (CFI, > .90 is good), and Standard Root Mean Squared Residual (SRMR, > .09 is recommended).

Table 4-9 and Table 4-10 report the factor loadings, Cronbach's alpha, Construct Reliability (CR), and Average Variance Extracted (AVE) values of first-order measurement model. The reliability of the factors was investigated by Cronbach's alpha, CR, and AVE. All

Cronbach's alpha values were greater than the cut-off point of .70 suggested by Hair et al. (2010), ranging from .80 (Convenient Viewership) to .98 (Intention to Watch). The CR coefficients were all greater than the cut-off criterion (i.e., greater than .70) recommended by Fornell and Larcker (1981) and Nunnally and Bernstein (1994), ranging from .78 (Convenient Viewership) to .98 (Intention to Watch). All AVE values were acceptable (i.e., greater than .50) ranging from .51 (Convenient Viewership) to .94 (Intention to Watch) (Hair et al., 2010).

Convergent validity was examined by significant factor loadings on each construct and critical ratio values. All of the factor loadings were significant with critical ratios ranging from 8.70 (FAIR2) to 46.85 (INTW2) at $p < .001$ level (i.e., greater than 2.58 of critical ratio). Each factor loading of the measurement item passed the suggested value (i.e., greater than .50 is acceptable and greater than .70 is ideal) by Hair et al. (2010). All factor loadings were greater than .70 except for 6 items: FAIR1 (.55), ENJ2 (.68), CONV1 (.67), CONV3 (.62), TRU1 (.69), and TRU2 (.67).

For the discriminant validity, a correlation analysis was conducted. The correlations among performance expectancy factors should be less than .85 to establish discriminant validity (Kline, 2010). In the present study, correlation between performance expectancy factors ranged from .27 (between FAIR1 and ENJ2) to .81 (between EFF2 and EFF3) (see Table 4-11). None of the correlations presented above .85. In addition, an analysis of correlation between trust toward outcomes, attitude toward events, and behavioral intention was conducted. Correlation between constructs ranged from .10 (between TRU and INTA) to .51 (between ATT and INTW). None of the correlations presented above .85 (see Table 4-12). These results indicated good discriminant validity.

CFA for the Second-order Measurement Model

A second-order hierarchical model was examined to validate the structure of the construct based on the results of the CFA for the first-order measurement model. Table 4-8 shows goodness of fit indexes of the second-order measurement model. The results of the CFA revealed good model fit to the data (Chi-square = 842.048; Degree of freedom (*df*) = 365, x^2/df = 2.307, *p* = .000, RMSEA = .072, CFI = .929, and SRMR = .055). This study used several model fit indices such as Root Mean Square Error of Approximation (RMSEA, < .05 is good and > .08 is acceptable), Comparative Fit Index (CFI, > .90 is good,), and Standard Root Mean Squared Residual (SRMR, > .09 is recommended).

For discriminant validity, a correlation analysis was conducted. Table 4-13 shows inter-factor correlations. The correlations among constructs should be less than .85 to establish discriminant validity (Kline, 2010). In the present study, correlation between constructs ranged from .16 (between TRU and ATT) to .85 (between PE and TRU), and one inter-correlation (between PE and TRU) was .85.

Structural Equation Model

Hypotheses Test

The hypothesized model used to examine the relationships between independent and dependent variables is depicted in Figure 4-4. The model fit the data well (Chi-square = 842.048; Degree of freedom (*df*) = 365, x^2/df = 2.307, *p* = .000, RMSEA = .072, CFI = .929, and SRMR = .055). Standardized path coefficients and significance of second-order model for performance expectancy construct are reported in Table 4-14. Performance expectancy was measured by four first-order factors including fair judgment, enjoyment, efficient game operation, and convenient viewership. Each sub-dimension was measured with four indicators. All the standardized path coefficients for the first-order on the second-order factor were significant and greater than .70 at

a significance level of .001. These values ranged from .81 for enjoyment to .99 for convenient viewership. The support for the performance expectancy consists of a second-order factor containing four associated sub-dimensions. Thus, H1a, H1b, H1c, and H1d were supported.

The standardized path coefficients and significance of the second-order model for behavioral intention construct are reported in Table 4-14. Behavioral intention was measured by two first-order factors including intention to attend and intention to watch. Each sub-dimension was measured with three indicators. All the standardized path coefficients for the first-order on the second-order factor were significant at a level of .001.

The standardized path coefficients of the direct path among constructs are reported in Table 4-14. Hypothesis 2 predicted that performance expectancy is positively related to trust toward outcomes. The result indicates that performance expectancy is related to trust toward outcomes positively and statistically significant (β = .86, SE = .19, and p < .001), supporting hypothesis 2. Hypothesis 3 predicted that trust toward outcomes is positively related to attitude toward events. However, the result showed that the effect of trust toward outcomes on attitude toward events was not statistically significant (β = -.16, SE = .23, and p > .05), thereby not supporting hypothesis 3. Hypothesis 4 predicted that trust toward outcomes is positively related to behavioral intention. However, the result indicated that the effect of trust toward outcomes on behavioral intention was not statistically significant (β = -.06, SE = .17, and p > .05), thereby not supporting hypothesis 4. Hypothesis 5 predicted that performance expectancy is positively related to attitude toward events. The result showed that the effect of performance expectancy on attitude toward events was statistically significant (β = .38, SE = .39, and p < .05), supporting hypothesis 5. Hypothesis 6 predicted that attitude toward events is positively related to behavioral intention. The result showed that the effect of attitude toward events on behavioral

intention was statistically significant (β = .69, *SE* = .07, and $p < .001$), supporting hypothesis 6. Lastly, hypothesis 7 predicted that performance expectancy is positively related to behavioral intention. However, the result indicated that the effect of performance expectancy on behavioral intention was not statistically significant (β = .18, *SE* = .27, and $p > .05$), thereby not supporting hypothesis 7.

Indirect Effects within the Proposed Model

A bootstrapping methodology was employed to assess the indirect effect among the constructs (Shrout & Bolger, 2002). The bias-corrected bootstrap confidence intervals provided evidence that trust toward outcomes is a mediator between performance expectancy and attitude toward events and performance expectancy and behavioral intention. In a similar manner, it provided evidence that attitude toward events is a mediator between trust toward outcomes and behavioral intention. For mediating effects, the bootstrapping technique was used with 5000 bootstrap samples. The results of the bootstrap analysis indicated that all of these indirect effects are not statistically significant. See Table 4-15.

Development of an Alternative Model

The results of the hypotheses tests showed that no statistically significant effects of trust toward outcomes on attitude toward events and behavioral intention existed. These results suggest that trust toward outcomes variable does not play a mediating role between performance expectancy and attitude toward events and performance expectancy and behavioral intention. The researcher, therefore, modified the proposed model by eliminating the trust toward outcomes variable. See Figure 4-5.

The model fit the data well (Chi-square = 658.353; Degree of freedom (*df*) = 267, x^2/df = 2.466, p = .000, RMSEA = .076, CFI = .936, and SRMR = .057) (see Table 4-8). The CFI value of the alternative model (.936) was smaller than the original model (.929), which means the

alternative model shows a more acceptable fit to the data. Also the percentage of hypotheses that were statistically significant in the original model was 75% (9 of 12 hypotheses), whereas the alternative model had 89% (8 of 9 hypotheses). However, the relative chi-square value of the alternative model (2.307) was slightly higher than the original model (2.466), which suggests the original model is more parsimonious than the alternative model.

In this model, all paths for the first-order on the second-order factor of performance expectancy were statistically significant at the .001 level. This means that performance expectancy is a second-order factor including four related sub-dimensions. In a similar manner, all the standardized path coefficients for the first-order on the second-order factor for behavioral intention were statistically significant at the .001 level.

The direct path from performance expectancy to attitude toward events was positive and significant ($\beta = .24$, $p < .001$). The direct path from attitude toward events to behavioral intention was also positive and significant ($\beta = .69$, $p < .001$). The indirect path from performance expectancy through attitude toward events to behavioral intention was significant ($\beta = .17$, $p < .001$) and positive as well. This result shows that the strength of the indirect path from performance expectancy through attitude toward events to behavioral intention was significantly greater than the direct path from performance expectancy to behavioral intention.

To test mediation, a bootstrapping methodology was employed to assess the indirect effect among the constructs (Shrout & Bolger, 2002). The bias-corrected bootstrap confidence intervals provided evidence that attitude toward events is a mediator between performance expectancy and behavioral intention. A bootstrapping technique was used with 5000 bootstrap samples. The results of the bootstrap analysis indicated that the direct effects between performance expectancy and attitude toward events and between attitude toward events and

behavioral intention are statistically significant. Also, the indirect effect between performance expectancy and behavioral intention was significant. However, the direct effect between performance expectancy and behavioral intention was not significant. These results provide support that attitude toward events plays a mediating role between performance expectancy and behavioral intention (Iacobucci, Saldanha, & Deng, 2007). Moreover, the direct path from performance expectancy to behavioral intention was not significant, which means full mediation.

Table 4-1. Demographic characteristics of participants (N = 252)

Variables	Group	Frequency	Percent (%)
Gender	Male	132	52.4
	Female	120	47.6
Age	18-22	179	71.0
	23-27	39	15.5
	28+	34	13.5
	Missing	0	0
Ethnicity	White/Caucasian	154	61.1
	African-American	15	6.0
	Asian	60	23.8
	Hispanic	17	6.7
	Other	6	2.4
	Missing	0	0
Total attending games (2011-2012 Season)	None	56	22.2
	1 - 2 times	50	19.8
	3 - 4 times	47	18.7
	5 - 6 times	53	21.0
	More than 7 times	46	18.3
	Missing	0	0
Total watching games (2011-2012 Season)	None	9	3.6
	1 - 2 times	35	13.9
	3 - 4 times	54	21.4
	5 - 6 times	49	19.4
	More than 7 times	105	41.7
	Missing	0	0

Table 4-2. Descriptive statistics for performance expectancy (N = 252)

Factors and items	*M*	*SD*	Skewness	Kurtosis
Fair judgment				
Instant replay technology would be useful for improving fairness in officiating.	6.22	0.92	-1.41	2.59
Using instant replays would improve referee's officiating performance.	5.74	1.21	-1.17	1.32
Using instant replays would improve fairness in officiating.	5.88	1.05	-1.26	1.91
I would find instant replays useful for fair judgment in officiating.	5.82	1.06	-1.14	1.52
Enjoyment				
In the events, it would be enjoyable to review (watch) instant replays.	5.95	1.11	-1.60	3.44
I have experienced pleasure when the events have used instant replays.	5.54	1.17	-.95	1.09
It would be fun to watch when college football events use instant replays.	5.65	1.14	-1.13	1.81
Watching instant replays in the events would give me enjoyment.	5.37	1.25	-.80	.55
Efficient game operation				
The use of instant replays would enable the games to operate more efficiently.	5.32	1.40	-.89	.39
The game operation would be efficient because of instant replays.	5.20	1.45	-.68	-.22
The use of instant replays would improve efficiency in game operation.	5.31	1.43	-.87	.15
The use of instant replays would make game operation smooth.	5.17	1.41	-.76	-.05
Convenient viewership				
Reviewing instant replays would be a convenient way to understand referee's decisions.	5.75	1.10	-1.06	1.44
Instant replays would allow me to review a judgment several times in convenient manner.	5.85	1.01	-1.25	2.82
I would find it easy to follow instant replays through the media.	5.68	1.10	-.98	.90
Instant replays would allow me to review a referee's judgment in a convenient manner.	5.76	1.04	-1.22	2.64

Table 4-3. Descriptive statistics for trust, attitude, and behavioral intention (N=252)

Factors and items	*M*	*SD*	*Skewness*	*Kurtosis*
Trust toward outcomes				
The outcome of the events is trustworthy because of instant replays.	5.69	1.13	-1.24	2.10
I trust the outcome of the events when instant replays are used.	5.71	1.05	-1.02	1.87
The outcome of the events is dependable due to instant replays.	5.40	1.23	-.75	.44
I can rely on the outcome of the events due to instant replays.	5.52	1.08	-.53	-.23
Attitude toward events				
In general, attitude toward my favorite college football team's events is:				
Bad/Good	6.16	1.06	-1.33	1.55
Unfavorable/Favorable	6.13	1.08	-1.22	1.11
Unsatisfactory/Satisfactory	5.80	1.36	-1.17	.99
Intention to attend				
My future intention to attend my favorite college football team's events is:				
Impossible/Possible	6.25	1.24	-1.97	3.84
Very unlikely/Very likely	6.08	1.33	-1.51	1.74
Improbable/Probable	6.13	1.26	-1.55	2.03
Intention to watch				
My future intention to watch my favorite college football team's events is:				
Impossible/Possible	6.42	1.14	-2.46	6.12
Very unlikely/Very likely	6.34	1.22	-2.31	5.23
Improbable/Probable	6.33	1.28	-2.23	4.81

Table 4-4. Descriptive statistics for trust toward outcomes in gender difference

	n	M	SD	SE
Male	132	5.54	.99	.09
Female	120	5.63	.83	.08
Total	252	5.58	.91	.06

Table 4-5. Result of ANOVA for trust toward outcomes in gender difference

	SS	df	MS	F	p
Between Groups	.52	1	.52	.63	.43
Within Groups	208.64	250	.84		
Total	209.16	251			

Note. SS = sum of square; *df* = degree of freedom; *MS* = mean square; *F* = *F* distribution; *p* = probability.

Table 4-6. Descriptive statistics for trust toward outcomes in behavioral involvement difference

	n	*M*	*SD*	*SE*
Low (Attend)	56	5.53	.97	.13
Medium (Attend)	97	5.62	.88	.09
High (Attend)	99	5.56	.92	.09
Total	252	5.58	.91	.06
Low (Watch)	9	5.33	.66	.22
Medium (Watch)	89	5.49	.94	.10
High (Watch)	154	5.64	.91	.07
Total	252	5.58	.91	.06

Table 4-7. Result of ANOVA for trust toward outcomes in behavioral involvement difference

	SS	*df*	*MS*	*F*	*P*
Between Groups (Attend)	.35	2	.17	.21	.81
Within Groups	208.82	249	.84		
Total	209.16	251			
	SS	*df*	*MS*	*F*	*P*
Between Groups (Watch)	1.88	2	.94	1.13	.32
Within Groups	207.28	249	.83		
Total	209.16				

Note. SS = sum of square; *df* = degree of freedom; *MS* = mean square; *F* = *F* distribution; *p* = probability.

Table 4-8. Summary of the model fit

	$\chi 2$/df	RMSEA	CFI	SRMR
First-order model (PE)	300.884/98 = 3.070	.091	.928	.049
First-order model (TRU, ATT, INTA, and INTW)	120.584/59 = 2.044	.064	.983	.028
Original model	842.048/365 = 2.307	.072	.929	.055
Alternative model	658.353/267 = 2.466	.076	.936	.057

Note. PE = performance expectancy; TRU = trust toward outcomes; ATT = attitude toward events; INTA = intention to attend; INTW = intention to watch.

Table 4-9. Results for a confirmatory factor analysis for the first-order model of performance expectancy

Factors and Items	λ	Critical Ratios	α	AVE	CR
Fair Judgment (4 items)			.84	.57	.83
Instant replay technology would be useful for improving fairness in officiating.	.55				
Using instant replays would improve referee's officiating performance.	.76	8.70			
Using instant replays would improve fairness in officiating.	.80	8.96			
I would find instant replays useful for fair judgment in officiating.	.88	9.31			
Enjoyment (4 items)			.87	.63	.83
In the events, it would be enjoyable to review (watch) instant replays.	.73				
I have experienced pleasure when the events have used instant replays.	.68	10.49			
It would be fun to watch when college football events use instant replays.	.89	13.71			
Watching instant replays in the events would give me enjoyment.	.85	13.43			
Efficient Game Operation (4 items)			.92	.74	.85
The use of instant replays would enable the games to operate more efficiently.	.78				
The game operation would be efficient because of instant replays.	.88	15.36			
The use of instant replays would improve efficiency in game operation.	.92	16.46			
The use of instant replays would make game operation smooth.	.86	14.91			
Convenient viewership (4 items)			.80	.51	.78
Reviewing instant replays would be a convenient way to understand referee's decisions.	.67				
Instant replays would allow me to review a judgment several times in convenient manner.	.72	10.16			
I would find it easy to follow instant replays through the media.	.62	8.88			
Instant replays would allow me to review a referee's judgment in a convenient manner.	.82	11.47			

Table 4-10. Results of a confirmatory factor analysis for the first-order model of trust, attitude, and intentions

Factors and Items	λ	Critical Ratios	α	AVE	CR
Trust toward Outcomes (4 items)			.83	.56	.80
The outcome of the events is trustworthy because of instant replays.	.69				
I trust the outcome of the events when instant replays are used.	.67	9.72			
The outcome of the events is dependable due to instant replays.	.77	10.96			
I can rely on the outcome of the events due to instant replays.	.85	11.89			
Attitude toward events (3 items)			.91	.82	.89
Bad/Good	.98				
Unfavorable/Favorable	.95	32.51			
Unsatisfactory/Satisfactory	.77	18.12			
Intention to Attend (3 items)			.96	.90	.95
Impossible/Possible	.89				
Very unlikely/Very likely	.99	29.34			
Improbable/Probable	.96	26.65			
Intention to Watch (3 items)			.98	.94	.98
Impossible/Possible	.96				
Very unlikely/Very likely	.98	46.85			
Improbable/Probable	.97	41.98			

Table 4-11. Correlation matrix of the first-order measurement model of performance expectancy

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FAIR1	1.00															
FAIR2	.44	1.00														
FAIR3	.45	.61	1.00													
FAIR4	.49	.67	.68	1.00												
ENJ1	.30	.41	.41	.45	1.00											
ENJ2	.27	.37	.38	.42	.50	1.00										
ENJ3	.36	.49	.50	.55	.65	.60	1.00									
ENJ4	.34	.47	.48	.52	.63	.58	.76	1.00								
EFF1	.35	.47	.48	.53	.40	.37	.49	.47	1.00							
EFF2	.39	.54	.55	.60	.45	.42	.55	.53	.68	1.00						
EFF3	.41	.56	.57	.62	.47	.44	.56	.55	.71	.81	1.00					
EFF4	.38	.52	.53	.58	.44	.41	.54	.52	.67	.76	.79	1.00				
CONV1	.35	.47	.48	.53	.42	.39	.51	.49	.43	.49	.51	.48	1.00			
CONV2	.37	.51	.52	.57	.45	.42	.55	.53	.47	.53	.56	.52	.48	1.00		
CONV3	.32	.44	.45	.49	.39	.36	.47	.45	.40	.46	.48	.45	.41	.44	1.00	
CONV4	.43	.58	.59	.65	.52	.48	.63	.60	.54	.61	.63	.59	.55	.59	.51	1.00

Note. FAIR = fair judgment; ENJ = enjoyment; EFF = efficient game operation; CONV = convenient viewership.

Table 4-12. Correlation matrix of the first-order model of trust, attitude, and behavioral intention

	TRU	ATT	INTA	INTW
TRU	1.00			
ATT	.17	1.00		
INTA	.10	.49	1.00	
INTW	.17	.51	.47	1.00

Note. TRU = trust toward outcomes; ATT = attitude toward events; INTA = intention to attend; INTW = intention to watch.

Table 4-13. Correlation matrix of the second-order model

	PE	TRU	ATT	INT
PE	1.00			
TRU	.85	1.00		
ATT	.24	.16	1.00	
INT	.28	.20	.72	1.00

Note. PE = performance expectancy; TRU = trust toward outcomes; ATT = attitude toward events; INT = Intention.

Table 4-14. Loadings and path coefficients for the hypothesized model

Parameter	Unstandardized	*SE*	Standardized	H
Loadings on Second-Order PE				
PE → FAIR	1.00	-	.93***	H1a
PE → ENJ	1.37***	.17	.81***	H1b
PE → EFF	1.90***	.27	.84***	H1c
PE → CONV	1.53***	.19	.99***	H1d
Loadings on Second-Order INT				
INT → INTA	1.00	-	.66***	
INT → INTW	1.08***	.15	.71***	
Direct Path Coefficients				
PE → TRU	1.42***	.19	.86***	H2
TRU → ATT	-.21	.23	-.16	H3
TRU → INT	-.06	.17	-.06	H4
PE → ATT	.85*	.39	.38*	H5
ATT → INT	.47***	.07	.69***	H6
PE → INT	.28	.27	.18	H7

Note. PE = performance expectancy; FAIR = fair judgment; ENJ = enjoyment; EFF = efficient game operation; CONV = convenient viewership; TRU = trust toward outcomes; ATT = attitude toward events; INT = intention; INTA = intention to attend; INTW = intention to watch.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4-15. Indirect effects for the hypothesized model

	Path	Standardized Coefficient	p
Indirect	PE → TRU → ATT	.14	.32
Indirect	PE → TRU, ATT → INT	.09	.54
Indirect	TRU → ATT → INT	.11	.34

Note. PE = performance expectancy; TRU = trust toward outcomes; ATT = attitude toward events; INT = intention.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4-16. Results of confirmatory factor analysis of the alternative model

Factors and Items	Λ	Critical Ratios	α	AVE	CR
Fair Judgment (4 items)			.84	.57	.83
Instant replay technology would be useful for improving fairness in officiating.	.57				
Using instant replays would improve referee's officiating performance.	.77	8.94			
Using instant replays would improve fairness in officiating.	.79	9.03			
I would find instant replays useful for fair judgment in officiating.	.87	9.50			
Enjoyment (4 items)			.87	.63	.83
In the events, it would be enjoyable to review (watch) instant replays.	.73				
I have experienced pleasure when the events have used instant replays.	.68	10.46			
It would be fun to watch when college football events use instant replays.	.89	13.79			
Watching instant replays in the events would give me enjoyment.	.86	13.29			
Efficient Game Operation (4 items)			.92	.74	.85
The use of instant replays would enable the games to operate more efficiently.	.78				
The game operation would be efficient because of instant replays.	.88	15.55			
The use of instant replays would improve efficiency in game operation.	.92	16.35			
The use of instant replays would make game operation smooth.	.86	15.08			
Convenient Viewership (4 items)			.80	.51	.78
Reviewing instant replays would be a convenient way to understand referee's decisions.	.67				
Instant replays would allow me to review a judgment several times in convenient manner.	.72	10.23			
I would find it easy to follow instant replays through the media.	.62	8.99			
Instant replays would allow me to review a referee's judgment in a convenient manner.	.83	11.58			
Attitude toward Events (3 items)			.91	.82	.89
Bad/Good	.98				
Unfavorable/Favorable	.95	17.91			
Unsatisfactory/Satisfactory	.77	17.53			
Intention to Attend (3 items)			.96	.90	.95
Impossible/Possible	.89				
Very unlikely/Very likely	.99	29.10			
Improbable/Probable	.96	26.76			
Intention to Watch (3 items)			.98	.94	.98
Impossible/Possible	.96				
Very unlikely/Very likely	.98	46.77			
Improbable/Probable	.97	41.77			

Table 4-17. Correlation matrix of the alternative model

	PE	ATT	INT
PE	1.00		
ATT	.25	1.00	
INT	.30	.72	1.00

Note. PE = performance expectancy; ATT = attitude toward events; INT = intention.

Table 4-18. Loadings and path coefficients for the alternative model

Parameter	Unstandardized	*SE*	Standardized
Loadings on Second-Order PE			
PE → FAIR	1.00	-	.91***
PE → ENJ	1.43***	.19	.83***
PE → EFF	1.94***	.24	.84***
PE → CONV	1.56***	.20	.99***
Loadings on Second-Order INT			
INT → INTA	1.00	-	.66***
INT → INTW	1.08***	.15	.71***
Direct Path Coefficients			
PE → ATT	.54***	.15	.24***
ATT → INT	.49***	.06	.69***
PE → INT	.20	.11	.13
Indirect Path Coefficients			
PE → ATT → INT	.26***	-	.17***

Note. PE = performance expectancy; FAIR = fair judgment; ENJ = enjoyment; EFF = efficient game operation; CONV = convenient viewership; ATT = attitude toward events; INT = intention; INTA = intention to attend; INTW = intention to watch.
* $p < .05$. ** $p < .01$. *** $p < .001$.

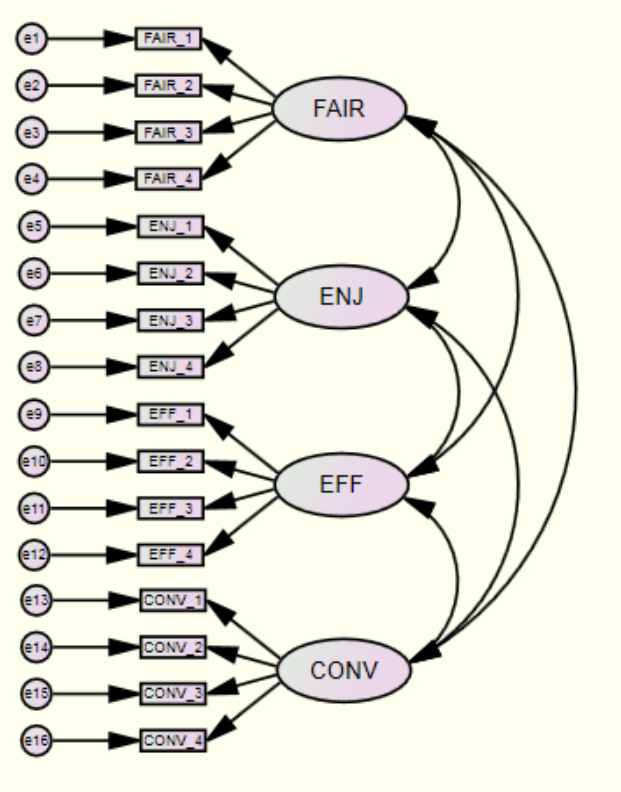

Figure 4-1. First-order measurement model for performance expectancy. *Note.* FAIR = fair judgment; ENJ = enjoyment; EFF = efficient game operation; CONV = convenient viewership.

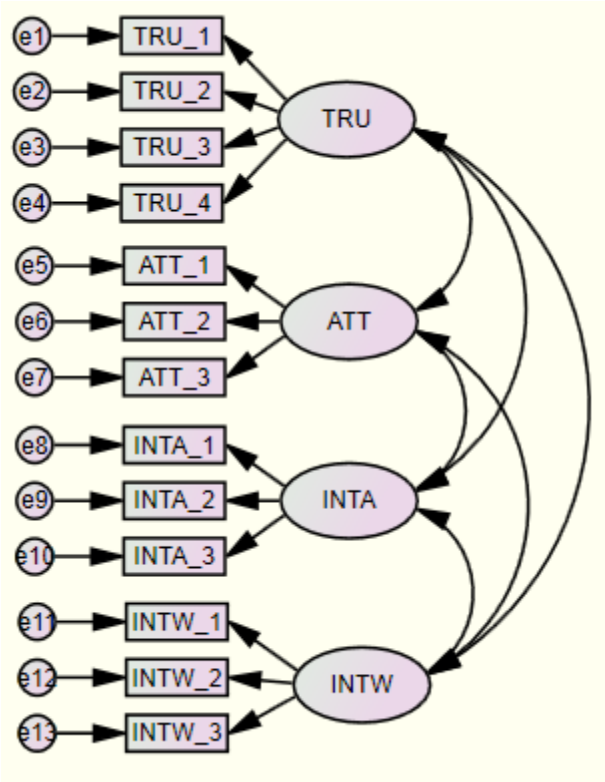

Figure 4-2. First-order measurement model for trust toward outcomes, attitude toward events, and behavioral intention. *Note.* TRU = trust toward outcomes; ATT = attitude toward events; INT = intention; INTA = intention to attend; INTW = intention to watch.

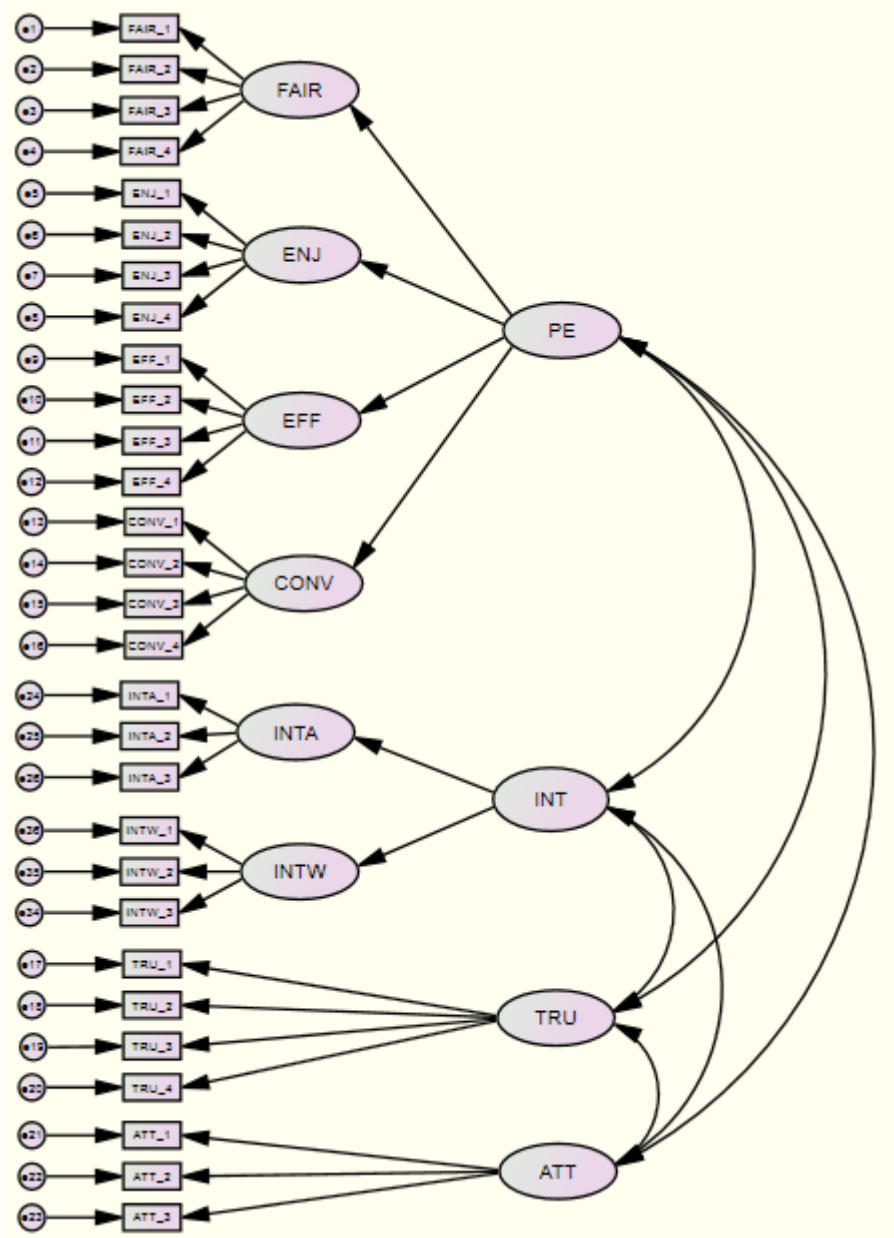

Figure 4-3. Second-order measurement model. *Note.* PE = performance expectancy; FAIR = fair judgment; ENJ = enjoyment; EFF = efficient game operation; CONV = convenient viewership; TRU = trust toward outcomes; ATT = attitude toward events; INT = intention; INTA = intention to attend; INTW = intention to watch.

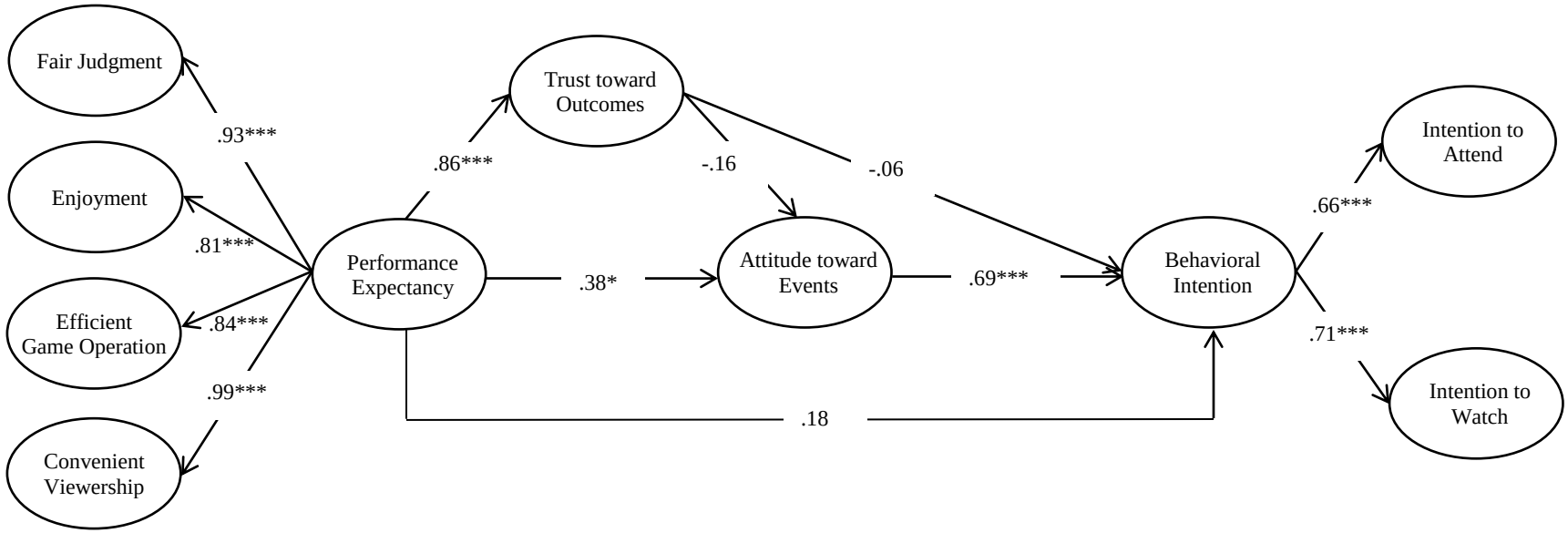

Figure 4-4. Results of hypotheses test. *Note.* * $p < .05$. ** $p < .01$. *** $p < .001$.

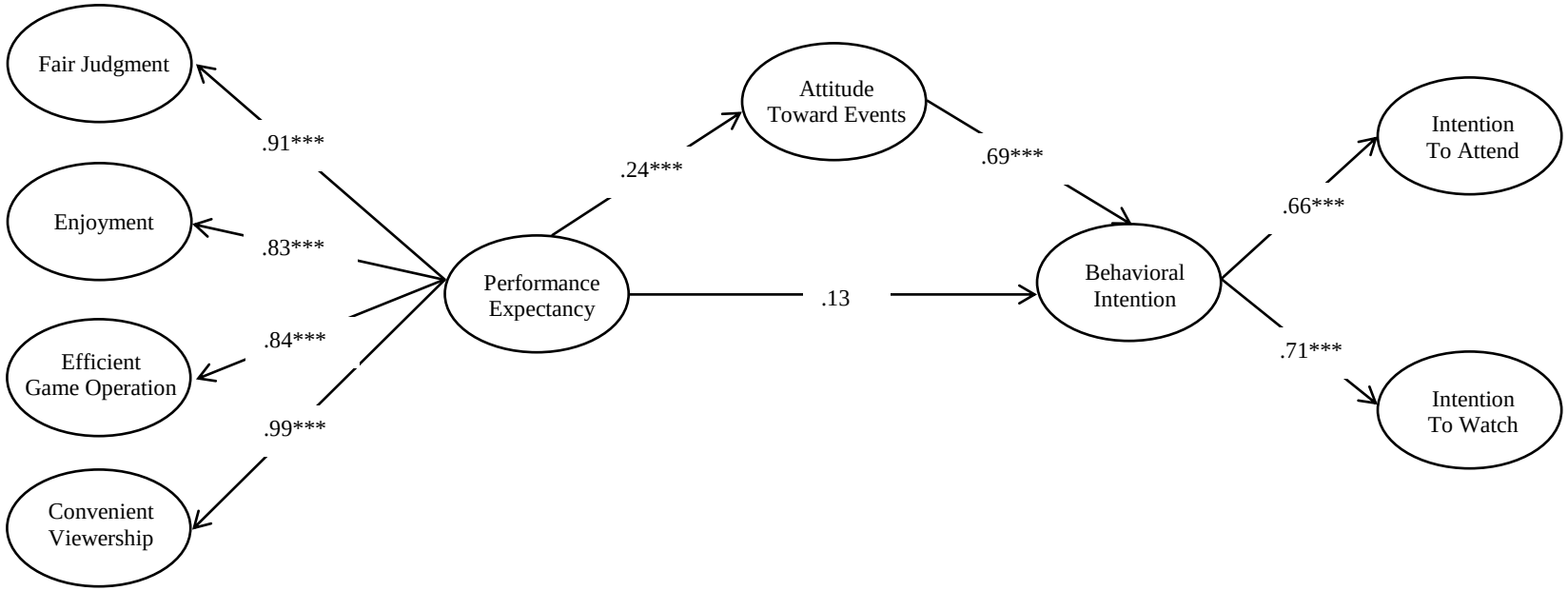

Figure 4-5. Results of path analysis of alternative model *Note*. * $p < .05$. ** $p < .01$. *** $p < .001$.

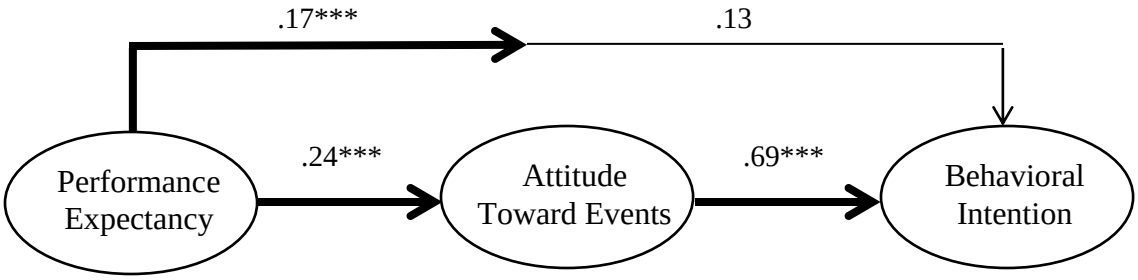

Figure 4-6. Results of the test for mediation on the relationship between performance expectancy and behavioral intention. *Note.* * $p < .05$. ** $p < .01$. *** $p < .001$. *Note.* A decrease in the boldness of the lines denotes a change in significance.

CHAPTER 5
DISCUSSION

For the current study, the conceptual framework was developed based on previous research findings in sport consumer behavior and technology acceptance behavior in various literatures. This section is presented in the following order: (1) Measurement Model, (2) Structural Model and Hypotheses Testing, (3) Implications, (4) Limitations and Future Research, and (5) Conclusion.

Measurement Model

One of the main purposes of this study was to investigate what is spectator's performance expectancy when using officiating technology in controversial game situations. Also, how should performance expectancy between officiating technology and sport consumers be conceptualized and measured? With respect to the performance expectancy variables, this study attempted to identify the factors for performance expectancy. Based on previous research, the current study initially proposed four sub-dimensions for performance expectancy, including fair judgment, enjoyment, efficient game operation, and convenient viewership. To test the measurement model for performance expectancy, different analyses were performed including calculating content validity values, internal consistency values, construct reliability values, and discriminant validity values. The results of the measurement model for performance expectancy were greater than the widely accepted cut-off criterions.

With respect to trust toward outcomes, attitude toward events, and behavioral intention, the results of the measurement model indicated that confirmatory factor analysis values were greater than the cut-off criterion. In other words, the scales used in this study proved reliable to examine the study purposes. Moreover, these constructs and scales could add to support future studies.

Structural Model and Hypotheses Testing

As noted earlier, the instruments were reliable and valid to measure the proposed model. In order to examine the hypothesized relationships between performance expectancy, trust toward outcomes, attitude toward events, and behavioral intention, a structural model was suggested. The results of the CFA indicated that fit of the second-order factor model for performance expectancy was good and all factor loadings were significant at $p < .001$ level. This means that H1a, H1b, H1c, and H1d were statistically significant and a positive relationship existed between the primary dimension and the sub-dimensions: fair judgment ($\beta = .93$, $p < .001$), enjoyment ($\beta = .81$, $p < .001$), efficient game operation ($\beta = .84$, $p < .001$), and convenient viewership ($\beta = .99$, $p < .001$). The results of the current study provide meaningful implications that further our knowledge of spectators' expectations of officiating technology.

All four sub-dimension factors were found to be predictive of the latent variable of performance expectancy. The sub-dimension of convenient viewership was shown to be the most important factor. What spectators expect from calls made using officiating technology is convenient viewership. "Convenient" means that spectators can review calls made using officiating technology whenever they wish or watch it in slow motion. Also, when a spectator misses calls made that require officiating technology, they expect to be able to review the plays that they wish to watch. Fair judgment is the fundamental reason for the introduction of officiating technology. Thanks to the leaps and bounds made in media technology, moments that were hard to judge with only the eyes of the referee can now be seen through a HD-TV or HD-Screen. The use of officiating helps to maintain fairness. Calls made using officiating technology can make up for referees' shortcomings or negate biased-decisions. It instead creates an expectation of fair calls. Before the introduction of officiating technology, whenever there was a dispute regarding a referee's call, a sport event would often be delayed due to complaints made

by players or coaches. Today, there is often time allotted for the use of officiating technology in order to make accurate calls, and spectators expect a smooth or efficient game operation. Lastly, spectators received an entertaining element in their attending or watching a sporting event due to the use of officiating technology. These findings were consistent with previous findings that perceived usefulness, perceived ease of use, and perceived enjoyment are the primary beliefs why users accept information systems (Davis et al., 1992; Igbaria et al., 1997; O'Cass & Fenech, 2003; Venkatesh & Davis, 2000).

One of the purposes of the current study was to test the role of trust toward outcomes. Trust was defined as "a willingness to rely on an exchange partner in whom one has confidence" (Moorman et al., 1992, p. 315). In this study, trust toward outcomes represented "the degree of trust placed in calls made by referees using officiating technology." Using previous research as a foundation, the current study hypothesized that performance expectancy has a positive effect on trust toward outcomes. The hypothesis was supported by the path analysis of the proposed model. This finding provides empirical evidence that supports Hypothesis 2. This result was consistent with Gefen et al. (2003) finding that the perceived ease of use should increase trust through the perception that the company is devoted to the relationship. Because first time consumers visiting for the first time have limited information, their expectations about performance reflect how they value information on a Web site. Similarly, the expectations of spectators in the use of officiating technology have a positive effect on the trust toward outcomes made by referees.

Through Hypothesis 3 and Hypothesis 4, it was proposed that trust toward outcomes has a significant effect on attitude toward events and intend to attend or watch. Empirical support was not found for either hypothesis. There is a possibility of an existing variable in the

relationship between trust toward outcomes and attitude toward events and behavioral intention. For fans whose loyalty and attachment to sports is high, although they may acknowledge that accurate calls made using officiating technology could be an element in making the game more enjoyable, they may not think that the element could be significant enough to affect their intention to attend or watch a sport event. Another reason could be because the implementation of officiating technology is not done directly by the fans, but rather is implemented indirectly. Therefore, because of the differences that exist between direct and indirect implementation, the results could be different. Future studies should offer a clearer picture of how trust toward outcomes made by referees using officiating technology affects spectators' attitude toward events and behavioral intention.

With Hypotheses 5 and 7 it was proposed that performance expectancy would have a direct effect on attitude toward events and future intention to attend or watch. In support of Hypothesis 5, the results show sports spectators who had a high level of performance expectancy directly influenced their attitude toward events ($\beta = .38$, $p < .001$). This is consistent with prior technology acceptance studies that highlighted the importance of performance expectancy in predicting attitude and intention (Hsu et al., 2005; Slyke et al., 2004). However, the result of the path analysis showed that a direct effect of performance expectancy on intention to attend or watch was not statistically significant. It is possible that performance expectancy may not be an independent factor of spectators' intention to attend or watch a sport event. Performance expectancy variables may be a mediator or moderator factor rather than directly influencing behavior intention. Furthermore, there is a possibility of the existence of a mediator variable in the relationship between performance expectancy and behavioral intention.

Hypothesis 6 proposed that attitude toward events directly influences behavioral intention. According to the results, interaction with attitude toward events had a significant effect on behavioral intention (β = .69, p < .001). A positive attitude increased intention to attend or watching a sport event. This finding provides support for Hypothesis 6. The connection between attitude and behavioral intention has been well established in the literature including in the field of sport management. Numerous studies have shown that attitude is an important indicator of behavioral intention (Ajzen & Fishbein, 1975; Shimp, 1981; Slyke et al., 2004).

An Alternative Model

Because the direct effects of trust toward outcomes on attitude toward events and behavioral intention were not significant, an alternative model was proposed in order to examine the role of attitude toward events as a mediating variable between performance expectancy and behavioral intention. The overall model fit of the alternative model was acceptable (Chi-square = 657.353; Degree of freedom (*df*) = 267, $\chi 2/df$ = 2.466, p = .000, RMSEA = .076, CFI = .936, and SRMR = .057).

The results of the path analyses indicated that the relationship between performance expectancy and attitude toward events was statistically significant (β = .24, p < .001) and the relationship between attitude toward events and behavioral intention was also statistically significant (β = .69, p < .001). The indirect path from performance expectancy through attitude toward events to behavioral intention was significant (β = .17, p < .001) as well. This result suggests that the strength of the indirect path from performance expectancy through attitude toward events to behavioral intention was significantly greater than the direct path from performance expectancy to behavioral intention. These results provide support that attitude toward events mediates between the performance expectancy and behavioral intention (Iacobucci et al., 2007). In addition, the direct path from performance expectancy to behavioral intention

was not statistically significant (β = .13, p > .001). This suggests that attitude toward events plays a full-mediating role between performance expectancy and behavioral intention.

In sum, performance expectancy cannot be a direct predictor for behavioral intention but it can indirectly affect behavioral intention through a mediating variable which was attitude toward events. This is consistent with previous research showing that attitude mediates the effect of perceived ease of use and perceived usefulness on the acceptance of a system (Davis et al., 1992; Hsu & Lu, 2004; Moon & Kim, 2001). The findings of this study expand the understanding of the link between performance expectancy and behavioral intention. Spectators' who have a positive attitude toward events are more likely to attend or watching a sport event. The results of the current study provide additional support for previous findings. That is, spectators' attitude toward events plays a significant role when spectators are planning to attend or watching a sport event.

Implications

For years, sport businesses have considered and introduced officiating technology into sport events, with the idea of making calls more accurate and reducing incorrect calls made by referees. In 1986, video officiating technology was adopted by the NFL. The use of officiating technology allowed spectators watching at home to second guess officials' calls on controversial plays. Recently, additional sport businesses have announced plans for extending officiating technology usage in their sport events. Officiating technology adoption has been a controversial issue in many facets. The current study contributes to the understanding of sport spectator's perception and acceptance of officiating technology and provides a practical marketing tool for evaluating their behavioral intentions, giving academic and managerial implications.

Research Implications

For an academic standpoint, this research has shed new light on the established field of sport technology in a manner not previously discussed in the research and will contribute to the body of knowledge by extending our understanding of technology effectiveness in officiating, particularly focused on spectator's perception of officiating technology adoption. Furthermore, there have been only a few studies applying consumer behavior theories to officiating technology adoption. This research is expected to help fill the gap between the field of sport management and management information systems. In other words, the conceptual framework will provide a fundamental explanation for understanding sport spectator's consumption behavior when officiating technology is used.

The current study provides an empirical examination of the performance expectancy framework in officiating technology usage in sports and in a sport consumption context. As noted earlier, previous studies focused on consumer's technology adoption by measuring their behavioral intention. Up to now, academic research toward technology acceptance has been mostly centered on the direct acceptance of technology by consumers. However, the current study centered on the usefulness of such officiating technology and the indirect acceptance of officiating technology by spectators through trust toward outcomes under officiating technology. These empirical findings extend our understanding of performance expectancy in officiating technology usage.

The current study attempted to develop and test a scale to measure performance expectancy of officiating technology perceived by sport spectators. In the field of management information systems, numerous researchers have studied scales to measure consumer's adoption. However, no scale has been developed to measure the performance expectancy of officiating technology usage. The results of the measurement model indicate that the proposed model fit the

data well. Thus, the developed scale in this study will assist future research on officiating technology usage in sports.

Managerial Implications

Many sport businesses are interested in officiating technology adoption or extending officiating technology usage. In addition, there has been growing dissatisfaction among fans due to poor officiating and that has led to mixed reactions when it comes to the introduction or extension of officiating technology. Recently, there have been fervent debates taking place in the sports community regarding the introduction of officiating technology. The current study looked into the relationship between performance expectancy and behavioral intention. Performance expectancy of spectators regarding the introduction of officiating technology was shown to increase in trust toward outcomes when officiating technology was used, and a positive attitude toward events. Thus, these results can be used by the sports businesses and organizations when deciding to introduce or extend officiating technology.

Additionally, spectators can be entertained further by using various media technology that show clips of the plays that are being decided upon and the decision itself, and can make watching sports events more convenient. This can be used as a marketing strategy for attracting more fans.

Limitations and Future Research

This study was conducted with some limitations. First of all, the researcher did not collect data from the entire population. The data used in this study were college students. This results in a lack of generalizability of the findings due to the lack of random sampling from the entire population of the participants. Therefore, future study should be conducted by using broader sampling in order to increase generalizability of the findings.

The current thesis focused on only football league officiating technology for the empirical test. There are a variety of officiating technologies in sports, including instant replay, Hawk-Eye system, Goal-line technology, and so on. Thus, the results might be different than we expected. Future research should examine whether there is any difference in the findings based on different sports (i.e., team sports vs. individual sports, basketball vs. baseball).

Finally, future research needs to examine the qualitative aspects of spectator's perceptions toward officiating technology usage in sports. In-depth interviews or qualitative research may provide insight why spectators want to adopt officiating technology or not.

Conclusion

Officiating technology usage in sports has grown as an important issue to sport business organizations and sport fans. The results of the study indicate that spectator's expectancy of officiating technology performance consists of fair judgment, enjoyment, efficient game operation, and convenient viewership. Moreover, the findings of the study confirmed the relationships of performance expectancy and certain psychological factors, trust toward outcomes, which influence the decision of the spectator's future intention. This provides valuable information for better understanding officiating technology usage in sports.

However, even if trust toward outcomes is high, there must be further discussion on the attitudes toward events and the miniscule impact of bad-calls on intention to attend or watch such sporting events. The fact that there is not much of a negative impact from bad-calls on the attitudes toward events and behavioral intention can be attributed to the loyalty fans have toward their team and their enjoyment of a sporting event itself. Even though fans may be disappointed by bad-calls, these will not have a negative impact on the attitude toward events and behavioral intention.

APPENDIX A
COVER LETTER AND SURVEY FOR PANEL OF EXPERTS

Dear Participant:

I am a master's degree student in the Department of Tourism, Recreation and Sport Management. I would greatly appreciate it if you would please complete the following questionnaire. The collected information in this survey will be used to examine spectators' attitude toward the use of technology in officiating. There are no known risks to you if you decide to participate in this survey and we guarantee that your responses will not be identified with you personally. Nor will we share any information that identifies you with anyone outside my research group.

Completing the questionnaire should take about 5-10 minutes. There are no direct benefits or compensation for your participating in the study. Your participation is voluntary and there is no penalty if you do not participate. Regardless of whether you choose to participate, please let me know if you would like a summary of my findings. If you have any questions about this research protocol, please contact my faculty supervisor, Dr. Yong Jae Ko, at (352) 294-1665. Questions or concerns about your rights as a research participant may be directed to the IRB02 office, University of Florida, Box 112250, Gainesville, FL 32611; (352) 392-0433. Thank you again for your cooperation and the valuable information you are providing in this survey.

Sincerely,

Fair Judgment	Relevance	Representativeness	Clarity
	Low High	Low High	Low High
The use of technology would improve fairness in officiating.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Using officiating technology would decrease referees' blown-calls.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Using technology would enhance the quality of judgment.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Using technology is useful for fairness in officiating.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Enjoyment	Relevance	Representativeness	Clarity
	Low High	Low High	Low High
Using technology in officiating gives enjoyment to me.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
It is fun to watch when a sport event uses this technology in officiating.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
It is enjoyable to watch review using this technology.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Using technology in officiating entertains me.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Efficient Game Operation	Relevance	Representativeness	Clarity
	Low High	Low High	Low High
Using technology in officiating would reduce game delay.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Using technology in officiating would make game operation smooth.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Using technology in officiating would improve efficiency in game operation.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
The game operation is efficient due to adapting this technology.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Convenient Viewership	Relevance	Representativeness	Clarity
	Low High	Low High	Low High
Reviewing judgment through officiating technology would not require a lot of mental effort.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Using technology in officiating would be a convenient way to review referees' decision.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Using technology in officiating would allow me to review judgment several times through the media in convenient manner.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Attitude	Relevance	Representativeness	Clarity
	Low High	Low High	Low High
Attitude toward events – refers to your feeling toward events when officiating technology is used for the calls made by referees *In general, my attitude toward events is:*			
Good / Bad	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Unfavorable / Favorable	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Positive / Negative	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Unsatisfactory / Satisfactory	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Attendance Intention	Relevance	Representativeness	Clarity
	Low High	Low High	Low High
I am more likely to attend future game.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
I intend to attend the game.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
I will attend the game in the future.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
The likelihood that I will attend the game in the future is high.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Watch Intention	Relevance	Representativeness	Clarity
	Low High	Low High	Low High
I am more likely to watch future game(s) through the media (e.g., TV, Internet, Smart Phone, etc.)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
I intend to watch the game(s) through the media (e.g., TV, Internet, Smart Phone, etc.)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
I will watch the game(s) through the media (e.g., TV, Internet, Smart Phone, etc.) in the future	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
The likelihood that I will watch the game(s) through the media (e.g., TV, Internet, Smart Phone, etc.) in the future is high.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Trust	Relevance	Representativeness	Clarity
	Low High	Low High	Low High
Using technology in officiating is trustworthy	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
I trust using technology in officiating	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
I have trust using technology in officiating	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Comments:

APPENDIX B
COVER LETTER AND SURVEY FOR MAIN STUDY

Dear Participant:

I am a master's degree student in the Department of Tourism, Recreation and Sport Management. I would greatly appreciate it if you would please complete the following questionnaire. The collected information in this survey will be used to examine spectators' attitude toward the use of technology in officiating. There are no known risks to you if you decide to participate in this survey and we guarantee that your responses will not be identified with you personally. Nor will we share any information that identifies you with anyone outside my research group.

Completing the questionnaire should take about 5-10 minutes. There are no direct benefits or compensation for your participating in the study. Your participation is voluntary and there is no penalty if you do not participate. Regardless of whether you choose to participate, please let me know if you would like a summary of my findings. If you have any questions about this research protocol, please contact my faculty supervisor, Dr. Yong Jae Ko, at (352) 294-1665. Questions or concerns about your rights as a research participant may be directed to the IRB02 office, University of Florida, Box 112250, Gainesville, FL 32611; (352) 392-0433. Thank you again for your cooperation and the valuable information you are providing in this survey.

Your participation is entirely voluntary and you have to be over 18 years of age to participate.

I have read the procedures described above for the study. I voluntarily agree to participate in the study.

Agree : □ Disagree : □

The National Collegiate Athletic Association (NCAA) utilizes INSTANT REPLAY TECHNOLOGY in their college football events for officiating.
Below, we ask about your perceptions toward the use of technology in officiating the game of your favorite COLLEGE FOOTBALL TEAM.
(Please list the name: *example: University of Miami:* _____)

1. Section I

Please read each question carefully and rate the extent to which you DISAGREE or AGREE with each item by choosing the appropriate number in the scale beside each statement.

Items	Strongly disagree						Strongly agree
Instant replay technology would be useful for improving fairness in officiating.	①	②	③	④	⑤	⑥	⑦
In the events, it would be enjoyable to review (watch) instant replays.	①	②	③	④	⑤	⑥	⑦
The use of instant replays would enable the games to operate more efficiently.	①	②	③	④	⑤	⑥	⑦
Reviewing instant replays would be a convenient way to understand referee's decisions.	①	②	③	④	⑤	⑥	⑦
The outcome of the events is trustworthy because of instant replays.	①	②	③	④	⑤	⑥	⑦
I have experienced pleasure when the events have used instant replays.	①	②	③	④	⑤	⑥	⑦
Instant replays would allow me to review a judgment several times in convenient manner.	①	②	③	④	⑤	⑥	⑦
Using instant replays would improve referee's officiating performance.	①	②	③	④	⑤	⑥	⑦
The game operation would be efficient because of instant replays.	①	②	③	④	⑤	⑥	⑦
I trust the outcome of the events when instant replays are used.	①	②	③	④	⑤	⑥	⑦
I would find it easy to follow instant replays through the media.	①	②	③	④	⑤	⑥	⑦
Using instant replays would improve fairness in officiating.	①	②	③	④	⑤	⑥	⑦
It would be fun to watch when college football events use instant replays.	①	②	③	④	⑤	⑥	⑦
The use of instant replays would improve efficiency in game operation.	①	②	③	④	⑤	⑥	⑦
The outcome of the events is dependable due to instant replays.	①	②	③	④	⑤	⑥	⑦
Instant replays would allow me to review a referee's judgment in a convenient manner.	①	②	③	④	⑤	⑥	⑦
I would find instant replays useful for fair judgment in officiating.	①	②	③	④	⑤	⑥	⑦
Watching instant replays in the events would give me enjoyment.	①	②	③	④	⑤	⑥	⑦
The use of instant replays would make game operation smooth.	①	②	③	④	⑤	⑥	⑦
I can rely on the outcome of the events due to instant replays.	①	②	③	④	⑤	⑥	⑦

2. Section II

In this section there are more items to ask your involvements, attitudes and future intentions. Again there may be similar, but slightly different items, so please read each question carefully and rate the extent to which you DISAGREE or AGREE with each item by circling the appropriate number in the scale beside each statement.

Please circle the appropriate number in the scale beside each statement

In general, attitude toward my favorite college football team's events is:

Bad	1	2	3	4	5	6	7	Good
Unfavorable	1	2	3	4	5	6	7	Favorable
Unsatisfactory	1	2	3	4	5	6	7	Satisfactory

My future intention to attend my favorite college football team's events is:

Impossible	1	2	3	4	5	6	7	Possible
Very unlikely	1	2	3	4	5	6	7	Very likely
Improbable	1	2	3	4	5	6	7	Probable

My future intention to watch my favorite college football team's events is: (e.g., TV, Internet, Smart Phone, etc.)

Impossible	1	2	3	4	5	6	7	Possible
Very unlikely	1	2	3	4	5	6	7	Very likely
Improbable	1	2	3	4	5	6	7	Probable

3. Section III - Demographic Information

Please either check the appropriate box or fill in the blank for the items below.

Gender: M ☐ F ☐ Age:

How many your favorite Football team games did you ATTEND during 2011-2012 season?

① None ② 1~2 times ③ 3~4 times ④ 5~6 times ⑤ more than 7 times

How many your favorite Football team games did you WATCH during 2011-2012 season? (e.g., TV, Internet, Smart Phone, etc.)

① None ② 1~2 times ③ 3~4 times ④ 5~6 times ⑤ more than 7 times

Ethnicity

☐ American Indian/Alaskan Native ☐ Asian ☐ Black

☐ Hawaiian/Pacific Islander ☐ Hispanic/Non-White ☐ White/Hispanic

☐ White/Non-Hispanic ☐ Other

If you have any offer comments, please use the space below.

Thank You!!!

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BIOGRAPHICAL SKETCH

Jihoon Kim earned his Master of Science degree in the College of Health and Human Performance (sport management) from the University of Florida in August 2012. He received his Bachelor of Science in business administration at Dongguk University, Seoul, South Korea in February 2010. His research goal is to improve and expand both the quantity and quality of the understanding of sport consumer behavior. Especially, he is interested in technological and psychological factors that affect sport consumer behavior related to sport marketing, media, and technology by drawing upon theories. Beginning fall 2012, he will continue his graduate study as doctoral student of sport management at the University of Georgia.