

ABSTRACT

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CHARACTERISTICS ON THEIR
BEHAVIORS ACROSS DIFFERENT SPORT
MEDIA PLATFORMS

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This dissertation explores sport media consumption behavior through a series of three investigations. Using the broad U & G approach (Katz et al., 1974) as an overarching paradigm of this dissertation, the three investigations take a distinct theoretical and methodological approach in the examination of various sport media consumption behaviors across different media platforms (i.e., Internet, videogame, and print media). Study One explores factors that influence the adoption of popular online-sport phenomenon—fantasy sport leagues. Study One uses the Technology Acceptance Model (TAM; Davis, 1989) as a theoretical framework and examines how attitude toward watching football on TV, perceived ease of using the fantasy sport website, perceived knowledge of sport, and subjective norms play a role in explaining subjects' attitudes and behavioral intentions toward playing fantasy football.

Study Two revisits the satisfaction-loyalty relationship model in the context of sport video gaming (SVG). Specifically, the second study extends the well-documented satisfaction-loyalty relationship (Oliver, 1999; Suh & Yi, 2006; Yi, 1990) by incorporating brand attitudes and perceived skill in the relationship between satisfaction and loyalty. The findings of Study Two highlight the importance of customer expertise and brand attitudes in a hedonic consumption context that involves a learning component.

Study Three replicates and extends existing literature in perceived message sensation value (PMSV) and message processing (Everett & Palmgreen, 1995; Niederdeppe, 2005; Niederdeppe, Davis, Farrelly, & Yarsevich, 2007; Palmgreen, Stephenson, Everett, Baseheart & Francies, 2002), by utilizing a specific message feature (i.e., violence) in the ad stimuli. Study Three is the first known attempt to investigate the arousal-enhancing effect of violent images in the PMSV context. After successfully validating the ad stimuli manipulated by level of violence, this study explores the effect of PMSV on arousal and ad evaluations. The results of Study Three generally support the PMSV main effect on ad responses, suggesting that a high-PMSV ad elicits higher arousal and favorable A_{Ad} , and A_B than a low-PMSV ad (Donohew et al., 1991; Donohew et al., 1995; Everett & Palmgreen, 1995; Niederdeppe, 2005; Palmgreen et al., 2001; Stephenson, 2002, 2003). Meanwhile, the moderating effect of SS received limited support. Overall, Study Three provides initial evidence that violence, as a specific PMSV-enhancing feature, can elicit arousal and favorable ad evaluations among a college student cohort.

INFLUENCE OF AUDIENCE CHARACTERISTICS ON THEIR BEHAVIORS
ACROSS DIFFERENT SPORT MEDIA PLATFORMS

By

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Dedication

This dissertation is dedicated to following people:

To my wife, Suyun, thank you for your encouragement and prayers. Without your unending support and love, this project could not have been accomplished. Thank you and I love you.

To my big Dad, Dr. Byong-Sun Kwak; I honor your life, your work, and your dedication as a great scholar. I am blessed that I have a role model like you.

To my mother, Dr. Eun-Sook Jee, thank you for everything. You have taught me the greatest value of life – Faith.

To my sister, Dae Young, thank you for your cheerful encouragement and support throughout this journey.

“So do not fear, for I am with you;
do not be dismayed, for I am your God.
I will strengthen you and help you;
I will uphold you with my
righteous right hand.”

-Isaiah 41:10

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Chapter 1: Introduction

Sport has always played a critical role in media. Numerous television and radio programs and networks, magazines, videogames, and newspapers focus on sport, not to mention hundreds of Internet sites dedicated to sports (Bellamy, 2006). The ever increasing importance of sports as media programming and software is even more pronounced in the information age (Bryant & Holt, 2006). Furthermore, the explosive growth of the Internet has altered the way business is conducted in both sport and media (Mahan & McDaniel, 2006; McDaniel & Sullivan, 1998).

According to Bryant and Holt (2006), two major characteristics of media developments in the information age are: (1) the interactive platforms that allow one-to-one as well as many-to-many communication (e.g., Internet) and (2) audience fragmentation and specialization of programming. As a result of the diffusion of newer media technologies, sports media are today a major selling point for videogames (Lomax, 2006), broadband Internet service (Mahan & McDaniel, 2006; Real, 2006), and specialized networks (Bryant & Holt, 2006). For example, fantasy sport leagues are now a multi-billion dollar industry, with nearly 30 million participants in the United States and Canada accounting for more than \$2 billion spent online (Fisher, 2008). The participants compete within their league against other fantasy team owners and the contests are decided on the basis of the real-world athletes' statistical performances. High-speed computers and the Internet both revolutionized statistical calculations for fantasy sport games (Roy & Goss, 2007). Along with Internet-based fantasy sports, the video gaming industry has also grown

over the last decade. According to the Entertainment Software Association (2008), from 1996 to 2006 computer and video game sales in the United States grew from \$2.6 billion to \$7.4 billion. Among total video game sales, sport video games (SVG) account for 17% of industry sales (Entertainment Software Association, 2008). With regards to the specialization of programming, sports coverage by cable networks has become even more specialized (Bryant & Holt, 2006). Some networks cover a particular sport (i.e., mixed martial arts) or event to target specific audience segments. For the truly hardcore sport consumer, numerous boxing and MMA events are available on a periodic pay-per-view basis, with fees ranging from \$49 to \$299 per package (Bryant & Holt, 2006). It should be noted that the MMA, for instance, is the fastest growing spectator sport and has become one of the most popular forms of sport programming among networks (Miller, 2008).

Despite the emergence of interactive sport media, fantasy sport and SVG, and specialized programming such as MMA, relatively little systematic research has been conducted to explore sport media consumption from the consumer behavior perspective (McDaniel, Lim, & Mahan, 2007). In order to better understand sport consumers, this dissertation seeks to explore sport media consumption behavior across different sport media platforms through a series of three investigations. One research paradigm that is widely recognized and researched in mass communication is the uses and gratifications (U & G) paradigm (Katz, Blumler, & Gurevitch, 1974). This U & G approach shifts focus from passive audiences to the active users seeking information and gratification. The U & G approach assumes that (1) people's selection and use of media is goal-directed, purposive, and motivated; and (2) people

select and use media to satisfy their psychological needs or desires, suggesting that media consumption is not necessarily passive (Rubin, 1994). These assumptions emphasize the role of motivation – which can be defined as a general disposition that influences the actions people take to fulfill a need or want (Rubin, 1994) – as a factor that accounts for their choice and preference of certain media messages or products. Because people are said to be cognitively aware of their choices of media and technology, they are assumed to gratify their needs when using particular media or technology. Therefore, the seeking of gratification is viewed as a significant determinant of one's decision to consume media.

In fact, many studies have found significant relationships between gratification seeking and exposure to mass media communication (see Palmgreen, Wenner, & Rosengren, 1985). A line of research suggests that seeking gratification has sometimes emerged as the strongest single predictor of media exposure (Ko et al., 2005; Stafford, Stafford, & Schkade, 2004). For example, the U & G approach has been extensively researched across various media including television, video gaming, and the Internet (Greene & Krmar, 2005; Kim & Ross, 2006; Ko et al., 2006; Lin, 1999; Stafford, Stafford, & Schkade, 2004). Therefore, the U & G approach's emphasis on individual users' activities and choices makes it plausible for application to goal-directed media consumption behaviors such as participating in fantasy sport leagues, playing SVGs, and watching violent sport (MMA).

This dissertation uses the media U & G paradigm as an overarching theoretical background to investigate various sport media behaviors (i.e., sport video gaming, fantasy sports, and ad response) on different media platforms (i.e., Internet,

video games, and print media promoting a television product). Study One (Chapter 2) explores factors that influence the adoption of a popular online sport phenomenon: fantasy sport leagues. Because participation in fantasy sport leagues involves new technology (i.e., Internet) and interactive functions, the Technology Acceptance Model (TAM; Davis, 1989) serves as a theoretical framework for this study. Additional factors were selected from theory of reasoned action (Fishbein & Ajzen, 1975) and other fantasy sport league research that utilized the media U & G approach (Farquhar & Meeds, 2007).

Study Two (Chapter 3) examines the satisfaction-loyalty relationship model in the context of sport video gaming (SVG). Specifically, the study revisits the well-documented satisfaction-loyalty relation (Oliver, 1999; Suh & Yi, 2006; Yi, 1990) by incorporating perceived skill and brand attitude in the relationship between satisfaction and loyalty in the context of SVG. While the positive association between skill and loyalty is documented in the hedonic consumption context (e.g., video gaming), this study is the first known attempt to investigate the mediating role of perceived gaming skill in the satisfaction-loyalty relation.

Lastly, Study Three (Chapter 4) investigates the effect of message sensation value on emotional response and ad evaluations in the context of sport media advertising. Using the Activation Model of Information Exposure (AMIE; Donohew et al. 1998) and the Limited Cognitive Model (LCM; Lang, 2000) as theoretical frameworks, the third study examines: (1) the role of violence in perceived message sensation value (PMSV, Palmgreen et al., 1991), (2) the effect of PMSV on arousal and ad response, and (3) the potential moderating effect of individual differences (e.g.,

sensation seeking). This study is the first known attempt to examine the PMSV-enhancing effect of violent media images. The method and design of these investigations follow existing research in advertising (McDaniel, Lim, & Mahan, 2007; Palmgreen et al., 2002) and consumer behavior (Davis, 1989; Suh & Yi, 2006). Chapter 5 includes a summary of the findings of the three studies, along with their implications to the study of sport media consumption behavior.

Chapter 2: Study One

2.1. Introduction

In recent years, the explosive growth of the Internet has dramatically changed the business environment in sport and media (McDaniel & Sullivan, 1998). Increased levels of interactivity and personalization have shifted market power from suppliers to consumers (Mahan & McDaniel, 2006). In particular, the popular online-gaming phenomenon, “fantasy sport,” has gained unprecedented popularity, with nearly 30 million participants in the United States and Canada accounting for more than \$2 billion spent online (Fisher, 2008).

Fantasy sport is a newly emerged form of sport spectatorship (Davis & Duncan, 2006), where participants have a great sense of control in producing the outcome. Fantasy sport participants select and create their own teams by “drafting” actual athletes in that sport. The participants compete within their fantasy league against other team owners and the contests are decided on the basis of the real-world athletes’ statistical performances. Broadband media and high-speed computers revolutionized information accessibility and statistical calculations for fantasy sport games (Roy & Goss, 2007). Fantasy contests are now offered in almost every sport imaginable including baseball, basketball, hockey, football, golf, auto racing, and even professional fishing (Lomax, 2006; Steger, 2009). While some service providers offer fantasy games for free, most charge some fee (i.e., league entry fee) to the participant. Furthermore, monetary incentives are becoming increasingly used by the fantasy sport service providers, where they distribute cash or other prizes to

winners; moreover, there can also be wagering among participants (Birch, 2004; Thompson, 2007).

In addition to the game itself, fantasy sport business is extended to various media platforms including magazines, books, free- and pay-Internet sites that offer expert advice on whom to select and strategies for winning one's league, and television and radio programs dedicated to fantasy sport (Steger, 2009). According to the Fantasy Sport Trade Association (2007), participants spend an average of over \$460 annually and use the Internet five hours per week to manage their virtual teams online. Furthermore, a recent study showed that fantasy sport players are stronger consumers, in that they outspend the general population in many product categories (i.e., food, beer, electronic goods, etc.) (Fisher, 2008).

Given the fantasy sport industry continues to expand and the consumer segments are a lucrative target for advertisers, it is imperative for marketers to better understand fantasy sport participants (c.f., Russo & Walker, 2006). In particular, it would be important to investigate what determines the adoption of this new form of sport spectatorship (Farquhar & Meeds, 2007). However, there has been relatively little systemic research that explores fantasy sport consumers that go beyond their socio-demographic factors (Lomax, 2006). Therefore, the purpose of this study is to expand our knowledge of fantasy sport phenomena by investigating antecedents to fantasy sport participation. Specifically, this study employs the Technology Acceptance Model (TAM; Davis, 1989) as a theoretical framework to examine what determines participation intentions toward a fantasy sport league.

While the TAM is a well-documented model for explaining technology acceptance by users, the model has been unable to fully account for the adoption of hedonic-oriented technology acceptance such as online gaming (e.g., Okazaki, Skapa, & Grande, 2008). Therefore, it is necessary to consider other theoretically relevant constructs to enrich the explanation of participants' adoption of phenomena, such as fantasy sport leagues. It should be noted that fantasy sport consumption is a goal-directed media behavior, where a participant's primary goal is to achieve success in a competitive setting (c.f., Farquhar & Meeds, 2007; Roy & Goss, 2007). Likewise, there may be gratifications (i.e., enjoyment) sought through participating in fantasy games that are not explained by mere 'technology adoption' alone (Farquhar & Meeds, 2007).

One compelling theoretical framework that can complement the TAM is the media U & G approach (Katz et al., 1974; Palmgreen & Rayburn, 1979), which has been widely investigated for decades in the area of communication and media research. The U & G has effectively provided theoretical explanations in the study of gratification-seeking motives of various media consumption behaviors (Ruggiero, 2000). The main objective of the U & G approach is to explain the psychological needs that shape why people use media (Rubin, 1994). An extensive line of research has suggested that U & G has been quite effective in explaining motivations and needs for using the Internet (Ko, Cho, & Roberts, 2005; Korgaonkar & Wolin, 1999; Lin, 1999; Papacharissi & Rubin, 2000). Therefore, building on previous research on TAM and media U & G, this study explores antecedents to hedonic attitudes and participation intentions towards a fantasy sport league.

2.2. Theoretical Background

2.2.1. Technology Acceptance Model (TAM)

Among various efforts to understand the process of user acceptance of information technology systems, the TAM by Davis (1989), is one of the most researched theoretical frameworks. The TAM is theoretically grounded in the theory of reasoned action (TRA; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), which has been applied in predicting and explaining user behaviors across a wide variety of domains. According to the TRA, an individual's behavior is determined by his or her intention to perform the behavior, and behavioral intention is affected by the person's attitudes and subjective norms related to the target behavior (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Following the conceptualization of the TRA, the TAM concerns the factors that affect behavioral intention to use information or computer-mediated systems, which is presumed to be caused by two key constructs – *perceived usefulness* and *perceived ease of use* – and user's attitude, behavioral intentions, and actual system adoption (Davis, 1989). Perceived usefulness (PU) is defined as “the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context,” while perceived ease of use (PEU) refers to “the degree to which the prospective user expects the target system to be free of effort” (Davis, Bagozzi, & Warshaw, 1989, p.985).

Compared to the TRA, which is used to explain human behavior across situations, TAM tends to explain more variance in behavioral intention, especially when applied in a technology context (Davis et al., 1989). Since Davis' (1989)

introduction of the model, extensive research has been conducted to empirically support the model through validations, applications, and replications across a variety of settings for information technology acceptance (Chau, 1996; Davis, 1993; Davis et al., 1989; Moon & Kim, 2001; van der Heijden, 2004).

2.2.2. Criticisms of the TAM

Although the TAM has been widely used, some scholars have criticized the model for its inability to better account for the factors that explain users' acceptance of technology systems (cf., Park et al., 2008). For example, Davis (1989) argues that research should also incorporate additional variables that could affect user acceptance. In addition, TAM has been largely applied on utilitarian-oriented tasks, such as word processing programs, spreadsheet software, and online banking (e.g., Chau, 1996; Davis, 1993; Davis et al., 1989), while relatively little research has been conducted on the users' acceptance of hedonic information systems (van der Heijden, 2004). The consumer behavior literature distinguishes between utilitarian and hedonic products (Hirschman & Holbrook, 1982; Holbrook & Hirschman, 1982; Holt, 1995). While hedonic systems (e.g., fantasy sport) aim to provide pleasure and enjoyment, utilitarian systems (e.g., word processing) aim to provide instrumental value to the user. Therefore, some researchers have argued that the existing TAM should be extended to include additional motivational constructs to better account for hedonic system adoption (Moon & Kim, 2001; van der Heiden, 2004).

Recently, however, a handful of research has applied the TAM in the hedonic consumption context (Ha, Yoon, & Choi, 2007; Hsu & Lu, 2004; Jung, Perez-Mira, & Wiley-Patton, 2008; Kim & Forsythe, 2008; Okazaki et al., 2008), and those

studies have incorporated affective and task-oriented elements as determinants of behavioral intentions. For example, Hsu and Lu (2004) added social influence and flow experience, which are conceptualized as antecedents of both attitude and intention. They found that PEU was the most important determinant of attitude, but PU also played a minor role in attitude formation. In addition, Ha et al. (2007) incorporated other variables, such as perceived enjoyment, perceived attractiveness, and perceived lower sacrifice as antecedents of attitude toward mobile gaming adoption. They found that perceived enjoyment had the strongest influence, while PU had no impact on attitude formation. Furthermore, van der Heijden (2004) compared predictive utility of PU, PEU, and perceived enjoyment in explaining hedonic information adoption. Van der Heijden (2004) concluded that PU loses its predictive value in favor of PEU and enjoyment in hedonic systems.

Given the above findings, the predictive validity of PU in the context of hedonic-oriented technology system remains questionable and requires reconsideration when incorporating it into the research model (cf., Okazaki et al., 2008). Subsequently, from the TAM literature, PEU and perceived enjoyment are employed here as antecedents to fantasy sport adoption.

2.2.3. Fantasy sport league consumption

Fantasy sport has been argued to be a newly emerged form of sport spectatorship (Davis & Duncan, 2006), where participants can have a great sense of control in producing results of their “sporting competitions.” For instance, fantasy sport participants select and create their own teams by “drafting” actual athletes in a particular sport. The participants compete within their fantasy league against other

team “owners’ and the contests are decided on the basis of the real-world athletes’ statistical performances. Broadband media and high-speed computers have revolutionized information accessibility and statistical calculations for fantasy sport games (Roy & Goss, 2007). Fantasy contests are now offered in almost every sport imaginable, including: baseball, basketball, hockey, football, golf, auto racing, and even professional fishing (Lomax, 2006; Steger, 2009). While some service providers offer fantasy leagues for free, most charge some fee (i.e., league entry fee) to the participant. Furthermore, monetary incentives are becoming increasingly used by the fantasy sport service providers, where they distribute cash or other prizes to winners; moreover, there can also be wagering among participants (Birch, 2004; Thompson, 2007).

In a recent study on fantasy sport participants, Farquhar and Meeds (2007) found the U & G approach to be a useful paradigm. They examined the motivation associated with participation in fantasy sports, and identified arousal and surveillance as two major motivations across different types of fantasy sport players. Although their study provided a starting point for identifying the primary motivations of fantasy-sport users, they did not focus on the technology per se, and called for future research to include other potentially relevant factors in explaining media use in this context.

In turn, Davis and Duncan (2006) employed an in-depth interview method to explore participants’ motivation for participating in fantasy sport leagues. They found that some dedicated fantasy sport players were motivated to exhibit their sports knowledge to outperform other participants. They concluded that participants utilize

their sports knowledge (i.e., players' and game's statistical information) as a competitive advantage to compete with other players. Based on their findings, a context-specific construct such as sports knowledge seems to play an important role in predicting attitudes and behavioral intentions toward playing fantasy sport. Including constructs that reflect the context of technology and the characteristics of the target system users is in line with extended-TAM research to better predict consumers' adoption behavior (cf., Kim & Forysthe, 2008; Moon & Kim, 2001; Oh et al., 2009; Okazaki et al., 2008; Zhang & Mao, 2008).

2.3. Research Hypotheses

As previously noted, prior research models on the original TAM do not adapt easily to the field of hedonic-driven technology service acceptance (e.g., Ha et al., 2007; Okazaki et al., 2008). Specifically, studies have found that PU is not significantly related to consumers' adoption in the online gaming context (Ha et al., 2007; Okazaki et al., 2008). Given that the original TAM is conceptualized to explain the adoption of utilitarian information systems that focus on instrumental utility, the current study examines consumers' adoption of hedonic information systems (i.e., fantasy sport). As called for by Davis (1989) and other researchers (Ha et al., 2007; Okazaki et al., 2008), the current study includes context-specific attitude, perceived ease of use, perceived knowledge, and subjective norms, as antecedents to the adoption of fantasy sport leagues. In addition, previous industry reports on fantasy sport business have suggested that participation in fantasy sport games is a male-dominated behavior (FSTA, 2007; Thompson, 2007). However, some recent sources have indicated considerable demographic expansion in the fantasy sport industry

(Fisher, 2007). For example, 33 percent of more than 1.2 million people who play NASCAR fantasy games are females (Fisher, 2007). One source also indicated that 25 percent of fantasy football players in 2004 were women (Weekley, 2004). Given the apparent expansion of the female consumer base, it is imperative for sport marketers to better understand how gender plays a role in fantasy sport consumption behavior.

Attitude toward televised sport. As reviewed earlier, the TAM stems from the TRA (Fishbein & Ajzen, 1975), which posits that a positive attitude leads to favorable decisions regarding the behavior of interest. The positive link between attitude and intention has been well established in previous literature (see Kim & Hunter, 1993). Given that the fantasy sport league is an extended form of sport spectatorship (Davis & Duncan, 2006), one's attitude toward one sport media technology (watching a sport on television) would be expected to be positively associated with attitudes and intentions toward using computer technology to play a related fantasy sport. Therefore, the following hypotheses were developed:

H1a: Attitude toward televised sport will positively influence attitudes toward playing online fantasy sport.

H1b: Attitude toward televised sport will positively influence intentions to play online fantasy sport.

Perceived ease of use. Prior TAM studies have found a positive link between PEU and affective evaluation (i.e., perceived enjoyment) of the behavior (e.g., Ha et

al., 2007; van der Heijden, 2004) in the context of a pleasure-oriented service. For example, van der Heijden (2004) found that PEU contributed to enjoyment and intention toward personal Website adoption. In another study, Ha et al. (2007) found that PEU had a direct impact on intention to adopt mobile gaming service. Given the various interactive functions of fantasy sport leagues (i.e., drafts, trades, injury reports, lineups, message boards, etc.), it is important for consumers to perceive the service as easy to use. Based on previous findings, the following hypotheses were developed:

H2a: PEU will positively influence attitudes toward playing fantasy sport.

H2b: PEU will positively influence intentions to play fantasy sport.

Perceived sport knowledge. Consumers' knowledge about system content or its domain also facilitates one's decisions to adopt a particular technology or system. For instance, Alshare and Alkhateeb (2008) found that subjective knowledge about the context (i.e., computer) plays a significant role on consumers' usage of Internet. Likewise, in fantasy sport, it seems plausible that ones that are more knowledgeable about the sport would demonstrate more favorable attitudes and beliefs to adopt fantasy sport than less knowledgeable individuals. According to Davis and Duncan (2006), sports knowledge plays a critical role in playing fantasy sports. The more knowledge one has about players' statistics, injuries, or other information about the game, the stronger the sense of control and confidence in decision making becomes for fantasy sport players (Roy & Goss, 2007). Participants strive to achieve their needs for winning the league championship by utilizing their sports knowledge. From

the U & G perspective, demonstrating sports knowledge could be a gratification sought among participants, as they use knowledge as a source of empowerment to compete with other participants (Davis & Duncan, 2006). In this regard, it is not unusual to see a fantasy-sport consumer spend extra time and money to integrate statistical information and to obtain detailed player analyses (Farquhar & Meeds, 2007). Thus, it can be hypothesized that if one feels knowledgeable about the sport, a participant will likely find the fantasy sport more enjoyable, and become a fantasy sport contestant. Therefore, the following hypotheses were proposed:

H3a: Perceived (football) knowledge will positively influence attitudes toward playing fantasy sport.

H3b: Perceived (football) knowledge will positively affect intentions to play fantasy sport.

Subjective norms. Subjective norms are used to study the relevance of social context in influencing attitudes and behavioral intentions (Ajzen & Fishbein, 1980). Specifically, subjective norms refer to the extent to which an individual believes that people who are important to him or her think he or she should perform the behavior (Fishbein & Ajzen, 1975). It should be noted that participating in fantasy sport involves interaction with other people. With easy access to the game via the Internet, fantasy sport has become an attractive vehicle for social interaction with participants' family, friends, or co-workers (Roy & Goss, 2007). Furthermore, fantasy sport participants can create their own private leagues or forums that facilitate social

interactions among participants of shared interests (Roy & Goss, 2007). Thus, it could be argued that positive social support would play an important role in predicting favorable attitudes and intentions to engage in fantasy sport games. Therefore, it is hypothesized that:

H4a: Subjective norms positively influence attitudes toward playing fantasy sport.

H4b: Subjective norms positively predict intentions to play fantasy sport.

Gender. According to Davis and Duncan (2006), playing fantasy sports offers opportunities to emphasize masculine ideals such as reinforcing empowerment through sports knowledge. However, less is known about if there is meaningful difference in men and women in certain variables that influence their evaluative judgments and behavioral intentions toward fantasy sport. In order to examine potential differential effects across gender, the current study used gender as a moderating variable in the relationships between antecedents (i.e., football attitude, ease of use, football knowledge, and subjective norms) and outcome variables (i.e., attitude toward playing fantasy football and intention to play fantasy football).

2.4. Method

2.4.1. Sample and procedures

A convenience sample of college students (N = 244) at a large Eastern university responded to a self-report Web-based survey. Participants were recruited from diverse undergraduate classes in exchange for course credit. Questionnaires

were administered by using a web-based survey program. Prospective participants were informed about the purpose of the study, the process of participation, and course credit. An invitation email was delivered to prospective participants with the URL of the online survey attached. Data collection started two weeks prior to the kickoff of the 2006 NFL season and continued for three weeks, since most fantasy sport service providers begin their services around this time of the year. The final sample consisted of 244 students (male = 121, female = 123) that completed the questionnaires. Mean participant age was 22.03 ($SD = 2.03$) and 66% identified themselves as Caucasians, 17% as Asian-Americans, 10% as African-Americans and 7% as other ethnic minorities.

Among various types of fantasy sport games, fantasy football was selected for the current study because it is the most popular form of fantasy sport leagues (FSTA, 2007). According to a survey by FSTA (2007), 82% of total fantasy sport participants played fantasy football. Therefore, fantasy football was deemed appropriate for this study.

2.4.2. Measures

Independent Variables.

Attitude toward televised sport. Attitude towards consuming sport via another technology system (i.e., television) was measured, by asking respondents to rate their overall affective enjoyment toward watching football on television (FBATT), on a five-point Likert type scale. A five-item hedonic attitude scale was adapted from Voss, Spangenberg, and Grohmann (2003), and dimensions were: fun, exciting, delightful, thrilling, and enjoyable.

Perceived knowledge (of the sport). A measure of participants' perceived football knowledge (PFK) was adapted from Flynn and Goldsmith's (1999) subjective consumer knowledge scale. It required the respondents to use a seven-point Likert scale to respond to the following three statements: "Rate your knowledge of the fantasy football league compared to the average consumer," "Rate your confidence in using the fantasy football league compared to the average consumer," and "I feel confident about my ability to comprehend the fantasy football league".

Perceived ease of use. A four-item perceived ease of use (PEU) scale was employed to measure the degree to which a person believes that using a fantasy-league Website would be free from effort. PEU is part of the larger TAM (Davis, 1993) and the following statements were made for five-point Likert-type scale: "Playing fantasy football leagues online would be easy," "For me, the ease of playing fantasy football leagues online is important," "Learning how to play fantasy football leagues online would be easy," and "For me, learning how to play fantasy football leagues online is important."

Subjective norms. A two-item subjective norms (SN) scale is adapted from Karahanna, Straub and Chervany (1999). Subjective norms are part of the TRA (Fishbein & Ajzen, 1980) and have been applied in previous TAM research (see Schepers & Wetzels, 2007). The following statements were used with five-point Likert-type scales: "Most people who are important to me think it is a good idea to play fantasy football league," and "Most people who are important to me would play fantasy football league."

Attitude toward (fantasy football) technology system. The measure for respondents' hedonic attitude toward participating in an online fantasy football league is adapted from Voss et al. (2003). Respondents were asked to rate their overall evaluation on a five-point Likert-type scale based on the following five dimensions: delightful, enjoyable, fun, interesting, and exciting.

Behavioral intentions. Behavioral intentions, for system use (to play fantasy sport), is adapted from Yi (1990) and the measure uses three five-point items anchored by very likely/very unlikely, probable/improbable, and possible/impossible.

2.4.3. Data analysis

The research hypotheses related to an expected main effect between independent variables (football attitude, perceived football knowledge, perceived ease of use, and subjective norms) and dependent variables (attitudes and intentions to play fantasy football), as well as the potential moderating effect of gender. These relationships were tested using moderated multiple regression, or MMR (Cohen & Cohen, 1983). Research indicates MMR is an appropriate technique to assess the effects of categorical moderator variables (e.g., gender) that augment the additive multiple regression model (Aguinis, 2004; Irwin & McClelland, 2001). The MMR allows the relationship between the dependent variable and an independent variable to depend on (i.e., moderated by) the level of another independent variable. The procedure involves creating a new variable that consists of the cross-product term between the predictor and the moderator variable. As suggested by Aguinis (2004), the predictor and the moderator (i.e., gender) are entered in the first block and the product term is entered in the second block. Thus, hierarchical regression models

were then run for each of the dependent variables (attitudes toward playing fantasy football and behavioral intentions to play fantasy football), by entering first order effects (FBATT, PFK, PEU, SN, and gender), followed by the addition of the lower-order interactions (FBATT \times gender, PFK \times gender, PEU \times gender, and SN \times gender) in the second block.

If the cross-product term is significant, the strength of the moderator's influence can be assessed by examining the increase in R-square from first to second block. The results of MMR indicate the specific classification of the moderator variable as well as its explanatory power as determined by the increase in R-square.

2.5. Results

Reliability tests of all scaled measures resulted in Cronbach alpha. Coefficient alpha was .96, .97, .86, .83, .98, and .98 for FBATT, PFK, PEU, SN, attitudes toward fantasy football, and behavioral intentions, respectively.

2.5.1. Attitudes toward fantasy football system results

The hypotheses regarding the main effects of four independent variables and the potential moderating effect of gender were tested using MMR. Table 1 shows the results of hypothesis testing. The regression coefficients suggest that all main effects were significant ($p < .05$), supporting hypotheses 1a through 4a. Gender also had a significant main effect on attitudes toward fantasy football, indicating that males reported higher attitudes toward fantasy football than females.

Table 1. Results of Moderated Multiple Regression Analysis for Attitudes toward Fantasy Football.

Variable	Main Effect (Beta/t-value)	Interaction Effect (Beta/t-value)	Model R ²
FBATT	.23/3.71**		
PFK	.23/3.09**		
PEU	.15/2.40*		
SN	.13/2.47*		
Gender	-.18/-3.23**		.48
Gender × FBATT		-.25/-.72	
Gender × PFK		-.11/-.35	
Gender × PEU		.01/.02	
Gender × SN		-.25/-1.26	.49
			$\Delta R^2 = .01$

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

The regression estimates for the main effects were .30, .22, .19, .13, and -.18 for PFK, FBATT, PEU, SN, and gender, respectively and the model was significant [$F(5, 235) = 45.23, p < .001$]. The five predictors explained 48% of the variance in the dependent variable. The test of the moderating effect of the gender was a continuation of the process detailed above, with FBATT × gender, PFK × gender, PEU × gender, and SN × gender interaction terms entering into the second step of the hierarchical regression model. As shown in Table 1, the significance of the regression estimates for the individual interaction terms was not significant ($p > .05$). Thus, the moderating effect of gender was not significant. Further, results show that addition of

interaction terms did not significantly improve the variance explained in the model ($p > .05$).

2.5.2. Behavioral intentions results

Similar to the steps mentioned above, first order variables and lower-order interaction terms were entered hierarchically to examine the effects on behavioral intentions to play fantasy football. Table 2 shows the results of hypothesis testing. The regression coefficients suggest that PFK, PEU, and SN were significant ($p < .05$), supporting hypotheses 2b through 4b. However, FBATT was not a significant factor ($p > .05$) explaining behavioral intentions, failing to support hypothesis 1b.

Table 2. Results of Moderated Multiple Regression Analysis for Behavioral Intentions.

Variable	Main Effect (Beta/t-value)	Interaction Effect (Beta/t-value)	Model R ²
FBATT	-.10 /-1.87		
PFK	.41/6.39**		
PEU	.27/5.04**		
SN	.13/2.79**		
Gender	-.25/-5.24**		.61
Gender x FBATT		.06/.26	
Gender x PFK		-.32/-1.84	
Gender x PEU		-.25/-1.39	
Gender x SN		-.08/-.50	.63
			$\Delta R^2 = .02^*$

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

The regression estimates for the main effects were .41, .27, .13, and -.25 for PFK, PEU, SN, and gender, respectively. Gender also had a significant main effect on behavioral intentions to play fantasy football. The direction of the beta coefficient suggests that males have more favorable behavioral intentions than female. The five predictors explained 61% of the variance in intentions to play fantasy football [$F(5, 234) = 76.78, p < .01$].

The relationship concerning the moderating effect of gender on behavioral intentions was then tested by adding the interaction terms (FBATT \times gender, PFK \times gender, PEU \times gender, and SN \times gender) on the second step of the model. Addition of the interaction terms shown to have a significant additional effect on the variance explained in behavioral intentions to play fantasy football [$\Delta R^2 = .02$]. However, the significance of the regression estimates for individual interaction term was not significant ($p > .05$). Only the PFK \times gender interaction was marginally significant ($\beta = -.32 (-1.84), p = .06$). Therefore, male and female respondents did not have significant differences on the effects of antecedents to fantasy sport participation intentions.

2.6. Discussion

2.6.1. Theoretical implications

The current study examines the antecedents to attitudes and intention to play fantasy sport by extending the TAM (cf., Davis, 1989). While the TAM has been mainly focused on explaining utilitarian information systems adoption (cf., Chau, 1996; Davis, 1993; Davis et al., 1989; Moon & Kim, 2001; Van der Heijden, 2004),

fantasy sports on the internet involve a hedonic-based technology system that aims to provide consumers with pleasure and enjoyment, rather than an instrumental benefit (Childers et al., 2001). Therefore, the current study employs the media U & G approach (Katz et al., 1974) to identify additional motivational factors (i.e., perceived football knowledge, subjective norms) to better explain the acceptance of fantasy sports. In particular, the current study investigates how attitude toward televised sport (FBATT), perceived sport knowledge (PFK), perceived ease of use (PEU), and social support (SN) play a role in explaining attitudes and behavioral intentions toward accepting an interactive sport media technology. Overall, the above antecedents explained a total of 48% of variance in survey participants' hedonic attitudes toward fantasy football, and 61% of variance in their behavioral intentions. This is considered large for social science research (Cohen, 1988). The variance explained in the current model is similar to previous TAM research (cf., Hong, Thong & Tam, 2006; Venkatesh & Ramesh, 2006).

In terms of predicting hedonic attitudes toward technology system use (playing online fantasy football), PFK and FBATT had the strongest effect, followed by PEU and SN. The findings suggest that consumers might tend to view fantasy sport sites as pleasurable and enjoyable, when they perceive they are more knowledgeable about the sport, have more favorable attitudes towards related sport media consumption, feel comfortable using the (online fantasy sport) system, and when family and/or friends also use the technology. With regards to behavioral intentions, PFK, PEU, and SN were significant factors but their attitude toward televised football (FBATT) was not. As shown in Table 2, the estimates of regression

coefficients suggest that PFK was the most powerful predictor of intentions to play fantasy football online. This finding is in line with the notion that fantasy sport consumers use sports knowledge as empowerment (cf., Davis & Duncan, 2006). For instance, Davis and Duncan (2006) found that maintaining solid sport knowledge about players and statistical information strengthens consumption of fantasy sports.

The results of this study also provide some interesting findings regarding the effects of using other media technology for related sport consumption. While respondents' attitude toward watching football was significantly associated with their positive attitudes toward playing fantasy football online, the construct did not have a significant effect in explaining their behavioral intentions for the latter. This finding suggests that when it comes to making behavioral decisions, positive hedonic attitudes toward a more traditional form of sport media, such as television, are necessary but not sufficient, in adopting interactive technology that offers a different type of fan experience. In other words, even though respondents might like televised football, consumption of this arguably more passive form of media does not always translate into their playing fantasy sport on the internet. Rather, the TAM findings of current study imply that domain specific and task-relevant factors such as football knowledge and ease of system use, as well as social influence, were significant in explaining amounts of variance in behavioral intentions. However, it should be noted that football is the most popular sport in the United States and thus findings might have been different for other types of sports (i.e., baseball, golf, etc.). Therefore, future studies should replicate and extend this research to different types of sport (i.e., baseball, golf, etc.) before any firm conclusions can be drawn on the relationship

between attitude toward televised sports and use of information technology systems, such as the internet.

Lastly, the results of this study also support the notion of the U & G approach that consumers are motivated to gratify their needs in consuming mediated fantasy sports (Davis & Duncan, 2006; Farquhar & Meeds, 2007; Roy & Goss, 2007). For instance, findings show other forms of sport media consumption, sports knowledge and positive social support all motivate consumers to form favorable attitudes and intentions to engage in online fantasy sport. Therefore, this study suggests that participating in internet fantasy sport leagues is a goal-directed media behavior and participants are driven by specific hedonic needs, such as pleasure and entertainment (Farquhar & Meeds, 2007). Thus, the study also contributes to our understanding of how sports fans use new media in this context (Mahan & McDaniel, 2006).

2.6.2. Moderating role of gender

The findings also add to sport marketing research on the moderating role of gender in fantasy sport consumption. Given that fantasy sport is a male-dominant activity (FSTA, 2007), the results of this study showed that gender had a significant main effect on both attitudes and intentions toward fantasy football (see Table 1 and 2). These findings confirm that males have more favorable attitudes and are more willing to participate in fantasy sport than their counterparts. However, the current investigation found no support for hypotheses that gender can moderate attitudes and intentions. As Table 1 and Table 2 suggest, gender had no significant moderating effects on both attitudes and intentions to play fantasy sport. This provides support for the notion that influence of attitude toward watching football on TV, sport

knowledge, ease of using the service website, and social support on fantasy sport consumption behavior is equally important across gender. However, no firm conclusions can be drawn, until more research is conducted in this area.

In an effort to better understand fantasy sport adoption processes, future studies might consider additional moderators potentially relevant in the TAM framework. For instance, consumer behavior research suggests that prior experience with a service or product has a substantial impact on choices for subsequent purchases of the service (Kim, Lim, & Bhargava, 1998). Specifically, Kim et al. (1998) found that prior experience with the service moderated the impact of affect and cognition on attitude formation. Therefore, it would be interesting to further examine the potential moderating role of prior experience on attitudes and behavioral intentions to engage in fantasy sports.

2.6.3. Limitations

While the current study adds to the body of sport marketing research that explores antecedents to online fantasy sport consumption, there are certain limitations that need to be acknowledged. For example, this study is limited in terms of generalizability because the data were collected from a convenience sample of college students. Future research should seek to confirm the proposed model with data collected from a randomized sample. Further, these findings should be replicated with different types of fantasy sports (e.g., baseball or golf). Given that internet-based fantasy sport is a relatively new phenomenon, future studies should continue to examine fantasy sport consumption motivations and behaviors using various behavioral indicators (i.e., vicarious achievement, player identification).

Overall, findings of the current study are in line with the previous TAM research, providing support to the notion that positive attitudes, ease of use, task-specific knowledge, and social support positively influence favorable beliefs and behavioral intentions towards a hedonic-based technology system. The TAM model employed herein also adds to our understanding of the uses (ease of use) and gratifications (favorable beliefs and behavioral intentions) of fantasy sport participants, which supports the utility of these paradigms in examining the fantasy sport consumption community.

Chapter 3: Study Two

3.1. Introduction

Study Two revisits the relationship between satisfaction and loyalty in the context of sport video gaming (SVG). A considerable amount of consumer behavior research has documented the positive relationship between customer satisfaction and brand loyalty (Oliver, 1999; Suh & Yi, 2006; Xu, Goedegebuure, & van der Heijden, 2006; Yi, 1990). In particular, customer satisfaction is thought of as an immediate antecedent to customer loyalty (Anderson & Sullivan, 1993). In turn, customer loyalty should translate into increasing shareholder value and asset efficiency (Reichheld, 1996; Rust & Oliver, 1994), which is linked to a continuous stream of profit, reduction of marketing costs, growth of per-customer revenue, and increase in referral (Reichheld & Teal, 1996).

Prior research on loyalty in the consumer behavior literature has been mainly focused on the relationship between customer satisfaction and repurchase intention (Reichheld & Teal, 1996). However, some researchers have contended that customers' satisfaction with a product is not enough to influence their loyalty (e.g., Jones & Sasser, 1995; Reichheld, 1996; Xu, Goedegeburne, & Van der Heijden, 2006), suggesting that the satisfaction-loyalty relationship might be more complex than expected (Anderson & Srinivasan, 2003; Hennig-Thurau & Klee, 1997). For example, some studies have examined additional constructs that mediate the satisfaction-loyalty relationship (Garbarino & Johnson, 1999; Singh & Sirdeshmukh,

2000). Likewise, Yi and La (2004) called for more research to identify potential mediators that influence customer satisfaction and loyalty.

Although the above studies have contributed to the understanding of the satisfaction-loyalty model, less is known about the nature of this relationship in a hedonic consumption setting that involves a learning element (e.g., video game, participant sports). The study of hedonic consumption focuses on emotional and experiential aspects (e.g., feelings, fantasies, and fun) of consumer behavior (Holbrook & Hirschman, 1982). For example, Holbrook and colleagues (1984) note that enjoyment of a playful consumption experience (i.e., video game) depends on one's gaming performance. More recently, researchers have found that consumer expertise plays a pivotal role in developing loyalty in instances where learning or a skill set are required, as it helps alleviate potential barriers to consumption (Matzler, Fuller, & Faullant, 2007; Murray & Bellman, 2007).

Although some researchers have identified the predictive utility of consumer expertise in explaining brand loyalty, no prior research has examined the role of consumer expertise within the satisfaction-loyalty relationship model. Thus, the questions of how and when consumers' perceived (video gaming) skills affect the customer satisfaction-loyalty relationship remains unanswered. Further, prior studies have examined brand attitude as a mediator in the satisfaction-loyalty link (Bolton & Drew, 1991; Suh & Yi, 2006). Based on the previous literature, the purpose of this study is to extend existing knowledge of the relationship between satisfaction and loyalty, by incorporating factors, such as consumer expertise and hedonic brand

attitude, as mediators in modeling the above phenomena in a sport video game (SVG) setting.

The current study contributes to the marketing research by developing a conceptual model that reflects the experiential view of consumption (cf., Holbrook & Hirschman, 1982) within the satisfaction-loyalty relationship framework. In particular, the proposed model departs from existing research by focusing on emotional and skill-relevant elements of consumption experience. Further, the current study also adds to the SVG literature by providing implications of factors associate with game satisfaction and loyalty.

3.2. Theoretical Background

3.2.1. Sport video games

Video games are a multibillion dollar industry, taking in more money than the film industry (Wolf, 2006). According to the Entertainment Software Association (2007), from 1996 to 2006 computer and video game sales in the United States grew from \$2.6 billion to \$7.4 billion. SVGs ranked second in total number of units sold in 2006, accounting for 17% of industry sales (Entertainment Software Association, 2007).

To date, a handful of studies have investigated the sport video gaming behavior (Kim & Ross, 2006; Kim, Walsh, & Ross, 2008). For example, Kim and Ross (2006) developed a scale to identify motivating factors of SVG players. The authors conducted focus groups to list primary motives and seven factors emerged from a survey involving 207 individuals. Seven prevailing motivations included:

identification with sport, entertainment, fantasy, knowledge applications, social interaction, competition, and diversion (Kim & Ross, 2006). In another study, Kim and his colleagues (2008) examined the psychological and consumptive behaviors of sport video gamers. They found that the majority of heavy gamers are highly identified sport fans who engage in more sport consumptive behavior (e.g., watch sports on TV, read sports paper, play sports, and visit sport news website) than light gamers. These findings indicate that those playing sport video games are avid sport fans.

Although there have been some efforts to better understand sport video gaming behavior from a consumer behavior perspective, little research has been conducted to examine the behavior within the satisfaction-loyalty link. Understanding the determinant of gaming loyalty would provide practitioners with insights to strengthen their relationships with consumers. Consequently, this study aims to provide additional insights into the sport video gaming literature by investigating how and when consumers' perceived gaming skill affects the customer satisfaction-loyalty relationship.

3.2.2. Customer satisfaction

Extensive studies have been conducted on customer satisfaction (Oliver, 1997; Xu et al., 2006; Yi, 1990). Oliver (1997) defines customer satisfaction as a pleasurable level of consumption-related fulfillment. According to Yi (1990), customer satisfaction is generally conceptualized as an attitude-like evaluative judgment following a series of purchase or consumer-product interactions. Customer satisfaction has long been regarded as a primary determinant of consumer loyalty

(Oliver, 1980) such as repeated purchase, positive word of mouth, and willingness to pay more to stay with the business (Carpenter, 2008; Xu et al., 2006). It is the result of a consumer's perception of the value received in a transaction or relationship (Blanchard & Galloway, 1994) and can be interpreted as the customer's overall evaluation of the performance of the product (Johnson & Fornell, 1991).

In this study, customer satisfaction is defined as an overall evaluation of the performance of the product (cf., Johnson & Fornell, 1991). Therefore, customer satisfaction is operationalized based on the quality of the product (i.e., graphics, functions, and overall quality) rather than the evaluation of personal experience with the product (Johnson & Fornell, 1991).

3.2.3. Customer loyalty

Oliver (1999) defines brand loyalty as “a deeply held commitment to re-buy or re-patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior” (p. 34). Other researchers conceptualize loyalty on a multidimensional basis by including an attitudinal component to a behavioral loyalty concept (Chaudhuri & Holbrook, 2001). Thus, some researchers have operationalized customer loyalty in two ways – attitudinal and behavioral. The first definition is attitudinal loyalty that deals with cognitive and emotional attachment to a product, service, or organization (Hallowell, 1996). The second definition of loyalty is behavioral and customer loyalty is assessed as recommendations (Boulding et al., 1993; Xu et al., 2006), repurchase intentions (Anderson & Sullivan, 1993; Suh & Yi, 2006), and willingness to pay a premium

price premium (Xu et al., 2006; Zeithaml et al., 1996). Similarly, in the current study, customer loyalty is indicated by positive word of mouth and repurchase intentions.

3.2.4. Perceived gaming skill

The current study examines the satisfaction-loyalty relationship model in the hedonic context involving a learning component. It should be noted that hedonic consumption focuses on experiential elements such as fantasies, feelings, and fun (Holbrook & Hirschman, 1982). It differs from utilitarian consumption behavior, which involves consumer decision making based on the instrumental qualities of the product/service. To date, much of the research on the satisfaction-loyalty paradigm has focused on the latter, such as making choices for products/services (cf., Suh & Yi, 2006; Yi & La, 2004). Conversely, playing a video game is clearly a hedonic consumption behavior that fun, enjoyment, and sensory pleasures are involved during the consumption experience (Holbrook et al., 1984).

Further, video games and other leisure activities (e.g., participant sport) constitute a particular type of consumer experience that often involves a learning (i.e., skill acquisition) component that facilitates consumption. Consumer expertise or skill has been found to be an important factor in continuing consumption when the context involves skill acquisition (e.g., video gaming, leisure service) (Holbrook et al., 1984; Matzler et al., 2007; Murray & Bellman, 2007). In one of the earliest studies on video game players, Holbrook and colleagues (1984) found that a consumer's skill-relevant factor (e.g., video game performance) was a key determinant in their emotional response (i.e., pleasure) following their consumption experience. Given the primary motivation in a hedonic consumption experience is fun and pleasure (Holbrook &

Hirschman, 1982), consumer expertise would play an important role in examining the relationship between satisfaction and loyalty.

Therefore, the current investigation employs a skill-relevant factor in modeling the relationship between customer satisfaction and loyalty. Specifically, this study incorporates consumers' gaming skill as a mediator in the satisfaction-loyalty relationship. Therefore, it is expected that consumers' SVG skill is likely to affect satisfaction-loyalty relations by mediating the influence of satisfaction on repurchase intentions and positive word of mouth intentions.

3.3. Research Hypotheses and Proposed Model

While the practical importance of customer loyalty has been well established in the consumer behavior literature, little research has examined the satisfaction-loyalty relationship model in a hedonic-consumption setting. Prior consumer behavior studies have suggested that customer loyalty is largely influenced by attitudes toward brands, customer satisfaction (Chaudhuri & Holbrook, 2001; Fournier & Yao, 1997; Suh & Yi, 2006), as well as by customer skills (Matzler et al., 2007; Murray & Bellman, 2007). Therefore, building upon Murray and Bellman's (2007) study involving video gaming and skill acquisition, this research aims to answer the following research questions: (1) Does the satisfaction-loyalty relationship paradigm hold true in the hedonic-consumption setting? (2) When and how does perceived gaming skill affect the satisfaction-loyalty relationship? Aiming to answer those questions, the proposed model (Figure 1) incorporates perceived gaming skill in the satisfaction-loyalty relationship model (cf., Suh & Yi, 2006).

Prior marketing research has suggested that attitude and satisfaction both lead to customer loyalty (Chaudhuri & Holbrook, 2001; Suh & Yi, 2006). It should be noted that brand attitudes and satisfaction are regarded as distinct concepts in the customer satisfaction literature (Oliver, 1980, 1997; Yi, 1990). According to Oliver (1981), customer satisfaction is relatively transaction specific, whereas attitudes are relatively enduring over time. Although conceptually distinct, Suh and Yi (2006) found that satisfied customers have a favorable attitude toward the product. Also, Bolton and Drew (1991) treated attitude as a consequence of satisfaction. Thus, it can be hypothesized that both brand attitudes and satisfaction will have unique contributions to loyalty, while satisfaction has a positive direct effect on attitude.

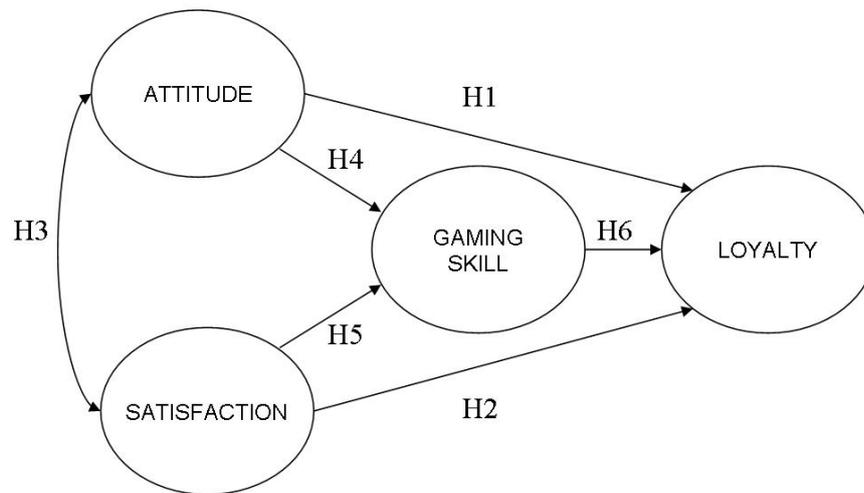


Figure 1. *The Proposed Structural Model.*

H1: Attitude toward the game will have a positive effect on loyalty.

H2: Satisfaction will have a positive effect on loyalty.

H3: There will be a positive relationship between attitudes toward the game and satisfaction.

Some consumer behavior researchers have found a positive relationship between consumer expertise or skill and product and/or service evaluations (e.g., Maheswaran, Sternthal, & Gürhan, 1996; Matzler et al., 2007). For example, if consumers have favorable attitudes toward the game and continue playing, it is likely that the perceived level of their gaming skill will increase. Likewise, satisfied customers tend to use a service more often than those who are not satisfied (Bolton & Lemon, 1999), which would lead to an increased level of perceived gaming skills. Therefore, it could be hypothesized that favorable evaluations and customer satisfaction will enhance consumers' perceived gaming skills.

H4: Attitudes toward the game will have a positive influence on perceived gaming skill.

H5: Satisfaction will have a positive influence on perceived gaming skill.

In a recent study, Murray and Bellman (2007) found that consumers' gaming skills play a critical role in developing game playing loyalty. This finding suggests that a skill-relevant factor is important in predicting customer loyalty in the hedonic and experiential consumption context. Thus, it can be hypothesized that customers' perceived gaming skills will have a direct effect on loyalty.

H6: Perceived gaming skill will have a positive effect on loyalty.

3.4. Method

3.4.1. Sample and procedure

A convenience sample ($N = 328$) of FIFA Soccer video-game players were recruited both online (42%) and offline (58%) from a metropolitan area in Korea. Overall, 98% of the respondents were males; the mean age was 21.6 years old, ranging from 18 to 33. The FIFA soccer video game (i.e., FIFA 2006) is a series of soccer games released annually by Electronic Arts (EA), one of the leading video gaming brands in the world (Zuniga, 2007). The FIFA soccer video game was chosen for this study because it is one of the top sellers of the EA products (Fisher, 2007), and to control for potential confounding effects from other types of soccer video games.

Online respondents ($N=138$) were recruited from an on-line video gaming forum. A banner advertisement with a direct link to the online survey was placed on the main webpage. When members clicked the banner, they were asked if they had previously played the FIFA Soccer game. If so, they could proceed with the survey. Offline participants ($N = 190$) were recruited from a large national university in Korea. Similar to the online recruitment procedures, students were asked if they had previously played any of the FIFA Soccer game. Only those who had prior experience playing the FIFA soccer game were given questionnaires to participate in the study.

3.4.2. Measures

Multi-item scales that had shown good psychometric properties in the prior research were utilized for this study. These selected items underwent an additional review and were translated into Korean. Then a panel of two scholars and one graduate student in sport management examined the items for content validity. The resultant questionnaire consisted of four main variables: hedonic attitude toward game, satisfaction, perceived gaming skill, and loyalty.

Hedonic attitudes toward game. A five-item hedonic attitude scale was adapted from Voss et al. (2003). Respondents were asked to rate their overall hedonic attitude toward playing FIFA Soccer game, using the following dimensions: fun, exciting, delightful, thrilling, and enjoyable, on a five-point Likert-type scale (1 = strongly disagree; 5 = strongly agree).

Satisfaction. Customer satisfaction was examined with three measures adapted from Bitner and Hubbert (1994). Respondents were asked to rate their satisfaction regarding the game's (1) graphic and sound quality, (2) functions and structural features, and (3) overall quality, on a five-point Likert-type scale (1 = strongly disagree; 5 = strongly agree).

Perceived gaming skill. The perceived gaming skill measure examined respondents' perception of their skill level playing the FIFA Soccer game. A four-item perceived skill scale was adapted from Pavlou and Fygenon's (2006) study and respondents were asked to rate their game playing skills on five-point Likert-type scales. The four items were: (1) If I wanted to, I could become skillful at playing FIFA Soccer game, (2) Becoming skillful would make it (much more difficult/easier)

for me to get information about this product, (3) If I wanted to, I could easily become knowledgeable about getting all relevant information about playing FIFA Soccer game, and (4) Becoming knowledgeable about getting information would make it (much more difficult/easier) for me to play FIFA Soccer game well.

Loyalty. Customer loyalty was examined with three five-point Likert-type items (Anderson & Sullivan, 1993; Xu et al., 2006; Yi, 1990). Two measures gauged repurchase intentions and one item queried them on word-of-mouth intention. Repurchase intention was measured by asking whether the respondents would like to purchase newer version of the game in the future, and how possible it is that they would like to purchase a newer version of the game. Word-of-mouth intention was measured by asking whether the respondents would be willing to recommend the product to their friends.

3.4.3. *Data analysis*

Following existing research on the satisfaction-loyalty link, the current study employs a Structural Equation Modeling (SEM) technique to examine the structural relationship among the constructs of interest (Carpenter, 2008; Suh & Yi, 2006; Xu et al., 2006). SEM was employed because it allowed the researchers to specify and test both the path (structural) model of the latent variables and the measurement model between the latent variables and the observed variables (see, Kline, 2005). The use of SEM is justified given that the purpose of this study is to examine the relations among the psychological factors, along with measurement errors.

For testing the hypotheses, a two-step approach was used. First, a confirmatory factor analysis (CFA) was conducted to examine psychometric

properties of the measures using the EQS 6.1 statistical package. After the CFA was conducted, general Structural Equation Modeling (SEM) was utilized to examine the structural relationships among satisfaction, attitudes, perceived skills, and loyalty. SEM was employed because it allows researchers to specify and test both the path (structural) model of the latent variables and the measurement model between the latent variables and the observed variables (c.f., Bollen, 1989; Kline, 1998). For each scale, internal consistency measures (Cronbach alpha) were calculated to indicate reliabilities. In addition, the average variance extracted (AVE) value was measured, which demonstrates whether each of the items contribute to the scale's underlying theoretical construct. Further, model comparison among competing models allows researchers to determine the best model fit among them (Baron & Kenny, 1986).

3.5. Results

3.5.1. The measurement model

Table 3 shows correlations, means, and standard deviations of the measures. In the measurement model, each indicator variable was predicted to load on just one latent factor. CFA for the measurement model of attitude, satisfaction, skill, and loyalty yielded a satisfactory fit. The chi-square value for the measurement models was significant ($\chi^2 = 315.99$, $df = 84$, $p < .001$), and standard root mean square residual (SRMR) = .05, non-normed fit index (NNFI) = .93, comparative fit index (CFI) = .95. The selection of fit indices and their cutoff criteria was based on Hu and Bentler's (1999) suggestions, and the results indicated that the measurement model fit well to the data.

The reliability of the measures was assessed using Cronbach alpha and AVE estimates. Table 4 presents Cronbach alpha and AVEs for each construct. All reliabilities are acceptable ranging from .78 to .92 and percentages of variance extracted by the latent construct ranged from .69 to .82 (greater than 0.50). AVE values above 0.50 indicated that the scales have good reliability (Fornell & Larcker, 1981). Given the acceptable CFA model fit, high factor loadings (0.69 to 0.96) demonstrate that the measures of each construct possess convergent validity. In all cases, correlations among constructs ranged from 0.52 to 0.72, providing evidence that attitude, satisfaction, skill, and loyalty are distinct constructs.

Table 3. Descriptive Statistics and Zero-order Correlations of the Measures.

	Att1	Att2	Att3	Att4	Att5	SAT1	SAT2	SAT3	Skill1	Skill2	Skill3	Skill4	Loyal1	Loyal2	Loyal3
Att1															
Att2	0.59*														
Att3	0.41*	0.64*													
Att4	0.56*	0.50*	0.38*												
Att5	0.66*	0.49*	0.38*	0.73*											
SAT1	0.32*	0.29*	0.28*	0.28*	0.32*										
SAT2	0.26*	0.28*	0.24*	0.22*	0.25*	0.45*									
SAT3	0.44*	0.38*	0.30*	0.36*	0.47*	0.51*	0.64*								
Skill1	0.30*	0.30*	0.20*	0.16*	0.16*	0.24*	0.13*	0.05							
Skill2	0.26*	0.18*	0.17*	0.21*	0.22*	0.13*	0.03	0.06	0.66*						
Skill3	0.29*	0.19*	0.21*	0.13*	0.22*	0.16*	0.04	0.11*	0.61*	0.62*					
Skill4	0.42*	0.36*	0.21*	0.28*	0.36*	0.20*	0.17*	0.21*	0.42*	0.42*	0.43*				
Loyalty1	0.46*	0.35*	0.29*	0.30*	0.42*	0.26*	0.16*	0.27*	0.38*	0.29*	0.42*	0.39*			
Loyalty2	0.49*	0.41*	0.34*	0.29*	0.42*	0.26*	0.15*	0.28*	0.35*	0.29*	0.39*	0.37*	0.89*		
Loyalty3	0.47*	0.40*	0.35*	0.33*	0.42*	0.26*	0.22*	0.35*	0.38*	0.27*	0.35*	0.35*	0.72*	0.74*	
<i>Mean</i>	3.98	3.44	3.24	3.63	3.92	3.59	3.49	3.46	3.73	3.67	3.86	4.06	3.49	3.42	3.39
<i>SD</i>	0.78	1.01	1.01	0.91	0.88	0.92	0.83	0.83	0.92	0.89	0.88	0.88	1.17	1.2	1.09

Note: * $p < 0.05$.

Table 4. *Reliability and Variance Extracted of Latent Variables.*

Construct	Cronbach alpha	Average variance extracted
Attitudes	0.85	0.69
Satisfaction	0.78	0.72
Skill	0.82	0.71
Loyalty	0.92	0.82

3.5.2. *The structural model*

The results of the structural model indicate that the model fits the data well ($\chi^2 = 316.00$, $df = 84$, $p < .001$; CFI = .95; NNFI = .93; SRMR = 0.05). Figure 2 demonstrates standardized parameter estimates for the structural model incorporating attitude, satisfaction, skill, and loyalty.

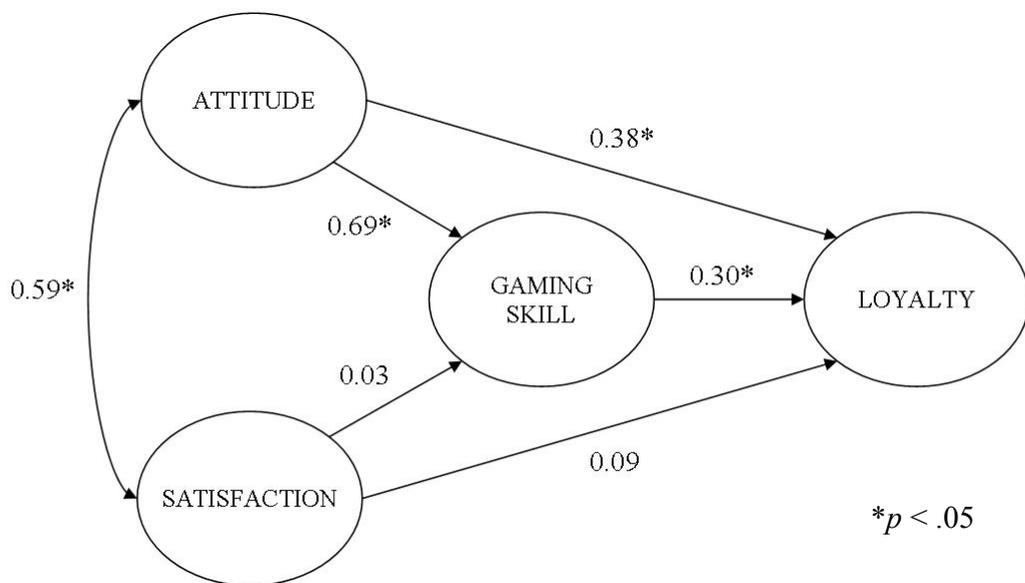


Figure 2. *Standardized Path Coefficients for Hypothesized Model.*

The results indicate that attitudes are positively related with satisfaction (H3; 0.59, $z = 8.89$). The impact of attitudes on skill is significant (H4; 0.69, $z = 9.38$). Attitudes are shown to have significant impact on loyalty (H1; 0.38, $z = 4.31$). With respect to the perceived skill effect on loyalty, the results were supportive (H6; 0.30, $z = 4.28$). However, satisfaction did not play significant roles in predicting perceived skill or loyalty. The standardized parameter estimates in Figure 2 show that constructs of attitudes, satisfaction, and skill explained 47 per cent of the variance in loyalty. The proposed research hypotheses were all supported except for H2 and H5.

Findings indicate that any covariance between satisfaction and both skill and loyalty was accounted for by other factors in the model. In order to further investigate the nature of the relationship among constructs, an exploratory model was created by eliminating the nonsignificant paths between satisfaction and both skill and loyalty (Figure 3). The fit of this model ($\chi^2 = 332.26$, $df = 86$, $p < .001$; CFI = .94; NNFI = .93; SRMR = 0.05) was similar to the hypothesized model. Similarly, the exploratory model explained 47 per cent of the variance in loyalty.

3.5.3. Nested model comparison

Following Mowen and Spears (1999), nested model tests were conducted to compare the hypothesized model and exploratory model. For nested model comparison, the chi-square difference test allows to test competing structural equation models (Loehlin, 1997). If the chi-square difference test is significant, it indicates adding more parameters among constructs (i.e., more complicated model) significantly improves the model fit. A comparison between the two models produced

a significant chi-square difference ($\Delta\chi^2 = 16.26$, $df = 2$, $p < .05$), indicating support for the more complex hypothesized model (i.e., Figure 2).

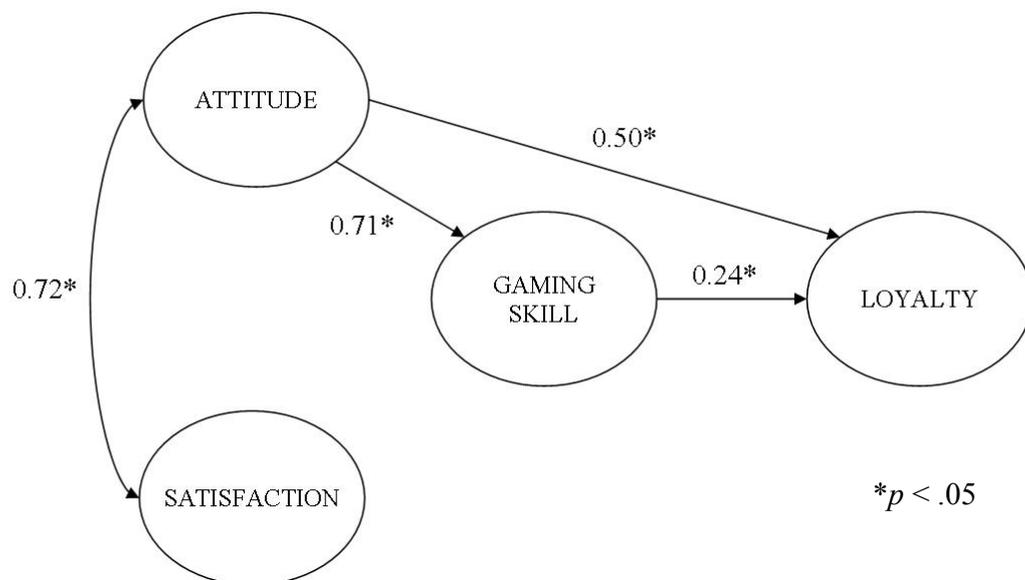


Figure 3. *Exploratory Model based on Re-specification.*

3.6. Discussion

The purpose of this study was to revisit the satisfaction-loyalty relationship in a hedonic consumption context (i.e., video gaming). While previous research on the satisfaction-loyalty paradigm has been conducted on a variety of consumption behaviors (e.g., service, retailing) (cf., Carpenter, 2008; Xu et al., 2006), few studies have been conducted to examine the relationship in a hedonic consumption setting that involves a learning component. Specifically, this study incorporated consumers' perceived gaming skill and hedonic attitudes toward the brand in the relationship

between satisfaction and loyalty for an SVG brand. The current investigation used survey data pertaining to actual users of the FIFA soccer SVG. An SEM technique was employed and standardized parameter estimates were used, along with model comparison via chi-square differences.

The current study adds to the marketing literature, by developing a conceptual model that certain aspects of experiential consumption (cf., Holbrook & Hirschman, 1982). In particular, the proposed model departs from existing research in the satisfaction-loyalty paradigm, by focusing on hedonic and skill-relevant elements of consumption. Further, the current study also adds to the SVG literature by providing implications of factors associate with game satisfaction and loyalty.

3.6.1. Theoretical implications

The data support four of the study's six research hypotheses (see Figure 2). These results are consistent with previous work on the satisfaction-loyalty model, as well as studies on video gaming. For example, attitudes towards the SVG are shown to have significant impact on game loyalty (H1) (Suh & Yi, 2006). In addition, satisfaction had a positive effect on brand attitude (H3) (Bolton & Drew, 1991; Suh & Yi, 2006). The impact of attitudes on skill was also significant (H4). With respect to the effect of perceived game skill on loyalty, the results were also supportive (H6). Consequently, the above findings are in line with previous satisfaction-loyalty literature, in that brand attitudes have a significant direct effect on loyalty (Ajzen & Fishbein, 1980; Suh & Yi, 2006). Furthermore, attitudes had a positive effect on perceived gaming skills. Thus, the study provides additional evidence that favorable attitude toward the brand is positively associated with customer satisfaction, gaming

skill, and loyalty. In addition, the findings of this study add to the literature that perceived gaming skill acted as a mediator between attitude and loyalty. Perceived gaming skill in turn had a direct influence on loyalty (Matzler et al., 2007; Murray & Bellman, 2007). Standardized path coefficients in the hypothesized model show that perceived gaming skill also partially mediated the relationship between attitude and loyalty. This finding suggests that, for the respondents in this study, satisfaction with the performance of the product (e.g., video game) is likely to lead to repurchase and recommending the game, when they have favorable attitudes toward the brand and perceive themselves to have adequate gaming skills.

Some of the SEM results (H5) depart with existing literature in this paradigm, however, as there was no significant direct effect of customer satisfaction on loyalty, (cf., Suh & Yi, 2006; Xu et al., 2006). Further, the direct path coefficient from satisfaction to perceived gaming skill was not significant (.03, $p > .05$), which lead to the rejection of H2 (see Figure 2). The findings suggest that consumers' gaming skills and loyalty may not be a function of their satisfaction with a game's instrumental qualities. Rather, the path estimates (Figure 2) show that satisfaction is mediated through hedonic brand attitude to influence gaming skill, which subsequently lead to loyalty. Satisfaction only indirectly influenced loyalty through its relationship with brand attitudes and gaming skill, suggesting the latter two constructs were more important than game satisfaction in influencing loyalty in this particular hedonic consumption context (c.f., Murray & Bellman, 2007).

One possible explanation for the lack of significance between satisfaction and loyalty path is the malleable and unstable nature of customer satisfaction

(Boulding et al., 1993; Oliver, 1999; Yi, 1990). According to Oliver (1999), customer satisfaction is easily and significantly updated as each new consumption experience occurs. Some researchers have noted that satisfaction is spontaneously elicited by subsequent exposure to the brand that is largely based on past experience with the product, but is rather transient and is consumption specific (Boulding et al., 1993). Conversely, brand attitudes largely result from a more deliberative evaluative summary of product-related experience (c.f., Suh & Yi, 2006). In this regard, brand attitudes seem to be more responsible in predicting loyalty than customer satisfaction alone for the respondents in this study.

Another potential explanation for the lack of a significant relationship between satisfaction and loyalty might have been the measurement of customer satisfaction employed here. For instance, the present study assessed customer satisfaction based on the customer's overall evaluation of performance (c.f., Johnson & Fornell, 1991) rather than on the consumption-specific experience. Therefore, it is possible that customer satisfaction with the instrumental quality of the product would not always translate into positive emotional reactions to consumer-product interactions (c.f., Yi, 1990). In other words, in hedonic consumption settings (e.g., video gaming), where the primary motivation is pleasure (Holbrook & Hirschman, 1982; Holbrook et al., 1984), satisfaction with the product's performance might be less important in determining consumers' repurchase intentions or word-of-mouth intentions. Instead, more consumption-specific variables such as perceived gaming skill (e.g., Murray & Bellman, 2007) could be more responsible in influencing loyalty than product based evaluations. This could be because the enjoyment of certain

hedonic experiences (e.g., video gaming) can depend on a consumer's skill-relevant factors (Holbrook et al., 1984; Matzler et al., 2007; Murray & Bellman, 2007). Therefore, if (game) satisfaction were operationalized to focus on the customers' experience rather than the performance of the product (i.e., a video game title), there might have been different outcomes. For example, even if a consumer is satisfied with the quality of the product, they could still be overwhelmed or frustrated using the product, by not having the appropriate skill sets. This is quite different than the process of utilitarian consumption behavior, where the focus is on making cognitive and rational purchase decisions (cf., Holbrook & Hirschman, 1982; Voss et al., 2003). During hedonic consumption, however, consumers are much more concerned about the quality of the experience (Murray & Bellman, 2007). In this regard, when further examining the relationship between satisfaction and loyalty in hedonic consumption, where a learning component is involved, it seems important to gauge customer satisfaction based on customer-product interactions (cf., Xu et al., 2006). Therefore, future research might want to measure both product-specific and experience-based satisfaction, to better explain their influence on loyalty. Further, it seems important to incorporate hedonic brand attitudes and consumer expertise as mediators in the customer satisfaction-loyalty link.

3.6.2. Practical implications

The findings also show that positive brand attitudes and gaming skills are important indicators for customer loyalty. According to the current findings, managers need to understand the important role of attitudes and gaming skill in order to be able to predict loyalty. With regards to brand attitudes, this study employed a

hedonic attitude scale (e.g., Voss et al., 2003) that captures experiential and pleasure-oriented dimensions of attitudes. Thus, managers should focus on marketing communication strategies (promotional activities and advertising messages) that emphasize fun, exciting, and arousing attributes of the game to enhance consumers' brand attitudes. As gaming skill was an important determinant to loyalty, managers need to be aware of the hedonic learning experience (e.g., Murray & Bellman, 2007). In particular, managers should offer options to customize the level of gaming difficulty as well as training sessions or online tips to help improve consumers' perceived gaming skills. Providing games that allow consumers to play in a more customizable setting might also help them increase their gaming expertise.

3.6.3. Limitations and future directions

There are obvious limitations to the study which limit its generalizability. Although respondents were actual users of the FIFA soccer game, the sample may not reflect the general sport video gaming population. The findings relative to the sport of soccer may not be applicable to other sports such as football, basketball, and baseball. Further, game players in Korea may not be representative of the gaming population in other regions. Therefore, another venue for future research would be to examine a variety of sports in different cultures would enhance sport marketers' and researchers' abilities to generalize the findings beyond one SVG.

In addition, the results of this study are applicable to a particular type of hedonic consumption experience – i.e., one that has a learning component. Many other domains of activity beyond video game playing (e.g., leisure services or

gambling) share these criteria and extending the concept from this study into those areas would be another interesting avenue for future research.

Overall, this study is the first known work to examine the satisfaction-loyalty relationship in a hedonic context that involves a learning component (SVG). Based on the existing consumer behavior research, the current investigation proposed a conceptual model that incorporates hedonic attitudes toward the game, satisfaction, perceived gaming skill, and loyalty. This study used survey data pertaining to actual users of an SVG (i.e., FIFA soccer). The SEM analysis showed that attitudes and perceived gaming skill both had direct effects on loyalty while satisfaction only had indirect effects through attitudes and gaming skill. The findings signify the importance of attitudes and gaming skill as mediators in the relationship between satisfaction and loyalty (cf., Murray & Bellman, 2007).

From the media U & G perspective, the findings of this study show that satisfaction with the product may not be a main motivator in influencing gaming brand loyalty. Rather, hedonic components such as fun, excitement, and enjoyment, and (gaming) skill acquisition, appear to be critical gratifications sought among game playing consumers. Consequently, the satisfaction-loyalty paradigm appears to offer a fruitful direction for SVG research. Likewise, research on hedonic consumption can add more to our understanding of the relationship between satisfaction and loyalty.

Chapter 4: Study Three

4.1. Introduction

Persuasive message designers, such as advertisers, have long been interested in the way in which message features influence the effectiveness of the message (Hoeken, 2003). As a result, they are interested in studies that identify which message features are effective in getting attention and inducing attitudinal and behavioral changes in an increasingly cluttered media environment (Ha, 1996). In communication and media research, the effectiveness of persuasive messages has been studied in terms of message content and format (Kang, Capella & Fishbein, 2006). In general terms, content refers to the story, topic, theme, or argument the message presents, whereas format refers to the way in which the story, topic, or theme is presented. While the content and format are often infused in a single advertisement, studies have been conducted to identify which content and/or format features increase message effectiveness (Donohew, Lorch, & Palmgreen, 1998; Lang, 2000; Niederdeppe, 2005).

Several scholars have theorized predictors and moderators in processing of stimulating messages (e.g., Donohew et al., 1998; Lang, 2000; Southwell, 2005). Researchers attempted to identify stylistic features and content of the mediated message that increased *message sensation value* (MSV). The concept of MSV suggests that messages high in perceived-MSV (PMSV) are presumed to elicit arousal, attention, and affective responses (Everett & Palmgreen, 1995; Palmgreen, Donohew, Lorch, Rogus, Helm, & Grant, 1991), and they are effective in generating

positive ad evaluations (Donohew, Lorch, & Palmgreen, 1991), enhancing ad recall (Palmgreen et al., 1991), facilitating favorable message processing (Stephenson, 2002, 2003), and engendering desired behavioral intentions (Everett & Palmgreen, 1995). Empirical findings have documented arousal-enhancing effects of certain visual features (edits and cuts), audio features (sound effects and music), and content features (intensive messages) in public service television announcements (PSAs) (Morgan, Palmgreen, Stephenson, Hoyle, & Lorch, 2003).

Two arguably somewhat similar theoretical frameworks, guide psychological explanations of stimulating message processing: the Activation Model of Information Exposure (AMIE; Donohew et al., 1998) and the Limited Capacity Model (LCM: Lang, 2000) of information processing. AMIE posits that one's level of need for sensation is a fundamental motivation determining the likelihood that the individual will elaborate stimulating messages. In turn, compared to the AMIE approach, LCM research examines short-term outcomes (i.e., physiological responses, attention, and recall) rather than long term attitude or behavior change. While the studies working within the LCM framework have explored the effects of specific visual and audio formats on attention and processing (e.g., Lang, 2000; Morgan et al., 2003; Southwell, 2005), research supporting the LCM is subject to methodological limitations. In many studies, laboratory experiments are employed and attention is forced, raising concerns about external validity (Niederdeppe, 2005).

The underlying mechanism for processing stimulating messages, in the above models, is derived from the sensation-seeking (SS) personality paradigm (Zuckerman, 1994; Zuckerman & Kuhlman, 2000). From a theoretical standpoint, high and low

levels of SS should yield differential outcomes on consumers' responses to arousal-enhancing messages. It is because high sensation seekers (HSSs) desire more novel and intense stimuli than low sensation seekers (LSSs) (Zuckerman, 1994). Empirical studies have supported the notion that that high-PMSV messages are more effective for HSSs than LSSs (Donohew, et al., 1991; Lorch et al., 1994; Morgan et al., 2003), suggesting that SS moderates the effect of arousal-enhancing messages.

However, the findings on the moderating effect of SS on PMSV ad processing have been mixed (cf., Niederdeppe, Davis, Farrelly, & Yarsevich, 2007). For example, while some studies found no interaction between PMSV and SS on visual attention to ads (Lorch et al., 1994), other studies found PMSV-enhancing message processing in both HSS and LSS (Palmgreen et al., 2002; Stephenson & Palmgreen, 2001; Stephenson, 2002; 2003). Inconsistent findings in this area could have been caused in part by certain methodological confounds. As Lang, Chung, Lee, Schwartz, and Shin (2005) contended, the PMSV scale (e.g., Palmgreen et al. 1991) includes all items related to message structure, content, affect, cognition, and persuasion in the same measure. Likewise, previous research on PMSV has often been criticized for failing to control for potential confounding effects of other message features (Niederdeppe et al., 2007). Thus, it remains unclear which aspects of structure and/or content have differential effects on the affective and cognitive processing of stimulating messages. In a similar vein, O'Keefe (2003) argued that many of these studies assess effects of messages that arouse some type of response without systematically exploring the message features that generate the induced response. In this regard, Niederdeppe et al. (2007) called for further studies to isolate the effects of

specific message features and to compare the valence of those effects based on an individual's arousal-seeking tendencies (e.g., SS).

Furthermore, studies suggest that high-MSV structural features (e.g., strong sound effects, fast pace, etc.) and high-MSV content features (e.g., arousing or fear appeals) elicit differential self-reported and physiological arousal responses. For instance, Donohew et al. (1991) found that structural features contribute little to distinguishing the preferences between HSS and LSS audiences, but message content such as novelty or fear appeals did. One type of message feature that has been examined in PMSV research is message intensity, such as the use of powerful images (Morgan et al., 2003; Niederdeppe et al., 2007). Niederdeppe et al. (2007, pg., 279) characterized intense images as “intense, grotesque, disgusting or horrifying.”

Although studies in the PMSV paradigm have examined the use of intense imagery, such as those related to fear appeals, one type of intense imagery that has not been examined is the use of violent images, which have implications to the marketing messages used in entertainment industries such as film and sport (McDaniel, Lim, & Mahan, 2007; Xie & Lee, 2008). Specifically, the current study uses print ads promoting what is arguably one of the most violent, yet increasingly popular, spectator sports of our time – mixed martial arts (MMA). Given its explicitly violent nature, MMA competitions are banned in some states in the U.S. (Jackson, 2009). Consequently, applying the PMSV paradigm, to investigate the effect of intense (violent) ad imagery would answer calls for research on the promotion of sport media (McDaniel, 2004; McDaniel et al., 2007). Likewise, it could also

advance our understanding of intense imagery effects in the PMSV literature (Morgan et al., 2003; Niederdeppe et al., 2007).

In an effort to address the aforementioned calls for research and certain criticisms in the PMSV literature, the purposes of Study Three are: (1) to test the arousal-enhancing effect of a specific content feature (i.e., intense imagery: violence) in the PMSV framework, (2) to examine the effect of PMSV on ad response and ad evaluations, and (3) to investigate the potential moderating role of SS on the effects of PMSV on ad response in this context.

4.2. Theoretical Background

Two arguably similar theoretical frameworks guide the explanation of the relationship between PMSV and message processing: the AMIE (Donohew et al., 1998) and the LCM (Lang, 2000).

4.2.1. Activation Model of Information Exposure

AMIE posits that preferences for specific mediated programs or information is a function of the correspondence between one's need for sensation and the level of stimulation provided by the message or the program (Krcmar & Greene, 1999; McDaniel, 2004; McDaniel et al., 2007; Niederdeppe, 2005; Zuckerman & Litle, 1986). OSL theory suggests that individuals have biologically-based optimal states of arousal at which they feel most comfortable, and they seek information to achieve or maintain that state. If individuals do not achieve and maintain their OSL during message exposure, they will seek other sources of stimulation to achieve their desired state. The innate drive to consume certain types of media, such as spectator sport, is

consistent with the notion of an active audience, in the U & G paradigm (Krcmar & Greene, 1999).

Activation theory has been applied to the study of MSV and the SS personality. The SS traits refers to the desire to seek “varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experiences” (Zuckerman, 1990. p.315). Based on the above definition, HSS individuals need considerably more novelty and stimulation to hold their attention than those who are LSS. Prior research suggests that messages perceived to be novel, complex, intense, unusual, fast-paced, and suspenseful are considered high in PMSV, which elicits greater levels of stimulation among teens and young adults (Donohew et al., 1998).

In a series of experiments and controlled community interventions, studies have found that high-PMSV antidrug TV ads are effective in generating positive ad evaluations (Donohew et al., 1991), enhancing ad recall (Niederdeppe et al., 2007; Palmgreen et al., 1995), facilitating message processing (Stephenson, 2002), promoting negative attitudes, and intentions to avoid drug uses (Everett & Palmgreen, 1995), and reducing actual marijuana use (Palmgreen et al., 2001).

Although a handful of studies have found results consistent with the AMIE, many are argued to be subject to confounding effects. For example, Niederdeppe et al. (2007) contended that it is impossible to determine whether the effects of PSAs resulted from the stylistic design of the ads, the use of verbal arguments, or the fact that the ads were embedded in programs frequently viewed by HSS groups. Further, most studies of AMIE failed to identify specific stylistic features that enhance

message attention and processing. Thus, there has been a call for further research to isolate the independent effects of specific message features and compare the magnitude of these effects on HSS and LSS viewers (e.g., Niderdeppe et al., 2007).

4.2.2. Limited Capacity Model

Another theoretical perspective that explains the relationship between MSV and information processing is the LCM (Lang, 2000), which identifies specific message features that enhance attention and arousal. The LCM proposes that attention to television is governed by both goal-directed and involuntary processes evoked by features of the message itself (Lang, 2000). According to the LCM, viewers choose to focus attention on specific aspects of television, based on their intentions and interests, but also as a result of automatic mechanisms, elicited by specific content (e.g., story) and structural features (e.g., pacing or movement). That indicates that a television viewer must allocate his or her limited cognitive resources to the cognitive tasks related to processing a message.

The LCM posits that allocation is distributed in two ways (Lang et al., 2005). One allocation mechanism is automatic and stimulus-driven; the other is viewer-oriented and controlled. An automatic resource allocation is related to an orienting response and is an involuntary physiological and behavioral response that directs one's attention toward novel or stimulating information (Lang, 1990). Research shows that many structural features (e.g., cuts, edits, and graphics) and certain content (e.g., arousing images, sexual words and risky products) of the television message elicit orienting responses in viewers (Lang, 2000; Lang, Bolls, Potter, & Kawahara, 1999).

In addition to automatic resource-allocation mechanisms, viewers can also allocate cognitive resources voluntarily. Controlled allocation is driven by the viewers' motivations, needs, interests, or goals (Lang et al., 2005). In terms of the relationship between SS and processing of stimulating messages, research suggests that SS may influence both controlled and automatic allocation of resources during viewing. For example, if HSSs prefer messages high in PMSV, they would theoretically allocate more controlled effort to process high-sensation-value messages. Also, if HSSs are more involved with the content of the message, then they should allocate more resources to the message, compared to LSSs.

Previous research has found that specific stylistic features (e.g., unrelated cuts, edits, and intense imagery) increase visual attention, generate arousal, enhance recall, and promote effortful processing of televised messages (Lang, 2000; Lang et al., 2005; Niederdeppe et al., 2007). Compared to the AMIE approach, LCM research examines short-term outcomes (i.e., physiological responses, attention, and recall) rather than long term attitude or behavior change. With regards to the relationship between MSV and SS, Lang et al. (2005) examined whether differences in SS moderates the effects of MSV on message processing. However, the study found no support for the hypothesis. Thus, it remains unclear whether messages containing different PMSV-enhancing features increase attention and processing compared to other behavior. Lang (2000) contended that the overuse of extensive stylistic features can cause cognitive overload and expend cognitive resources and inhibit both recall and processing. Nevertheless, it is possible that HSS individuals have a higher

stimulation threshold that allows the processing of intense images and features without cognitive overload.

However, much like AIME, LCM-related studies have been also criticized for certain methodological limitations. For instance, attention is usually forced in artificial settings of laboratory experiments, raising concerns over ecological validity (Niederdeppe et al., 2007). Moreover, some studies focus on one or two features without controlling for other features and/or content (e.g., Biener, Ji, Gilpin, & Alpers, 2004; Southwell, 2005), making it difficult to conclude which features are responsible for message effectiveness.

Overall, both AMIE and LCM theories guide the research on consumer SS levels and their response to MSV in ads. The two theoretical perspectives provide psychological explanations on how stylistic and stimulating message features promote message attention, processing, and persuasion. Specifically, the above paradigms help explain the relationship between MSV and individual's need for sensation. According to both frameworks, HSSs are more involved with arousing and intense messages while LSSs prefer messages in low sensation value. While AMIE focuses on content, LSM focuses on both content and structural features, in processing stimulating messages. However, previous studies have been inconsistent in supporting the theories' central proposition that SS moderates the effectiveness of PMSV-enhancing messages (see Niederdeppe et al., 2007). Therefore, in an effort to address earlier criticisms on PMSV and message processing research, the current study isolates the independent effects of a specific message feature (i.e., violence) to

examine the effects of PMSV and SS on viewers' ad evaluation and emotional response (e.g., Niederdeppe et al., 2007).

4.3. Research Hypotheses

Based on the preceding review of the literature, the current study investigates (1) the effect of violence as a PMSV-enhancing feature, (2) the influence of PMSV on ad evaluations, and (3) the potential moderating effect of SS on message processing. Media-violence researchers have long focused on the potential effects of violent media on arousal (Carnagey, Anderson, & Bartholow, 2007). Thus, intense (violent) images in mediated messages will have a significant arousal-enhancing effect, which will subsequently relate to an increase in PMSV (Morgan et al., 2003; Niederdeppe et al., 2007). Since previous research has documented that messages high in PMSV elicit arousal and are more persuasive (Donohew et al., 1998; Lang, 2000; Morgan et al., 2003), it is hypothesized that, following exposure to a high-PMSV ad, subjects will report higher levels of arousal, more favorable attitude toward the ad (A_{Ad}), attitude toward the brand (A_B), and purchase intentions (PI) than after exposure to a low-PMSV ad, when controlling for the personal relevance of the product category depicted. Thus, the following hypotheses were developed:

H1: Subjects will report significantly higher levels of arousal after viewing a high-PMSV than they will after viewing a low-PMSV ad.

H2: Subjects will report significantly higher levels of A_{Ad} after viewing a high-PMSV than they will after viewing a low-PMSV ad.

H3: Subjects will report significantly higher levels of A_B after viewing a high-PMSV than they will after viewing a low-PMSV ad.

H4: Subjects will report significantly higher levels of PI after viewing a high-PMSV than they will after viewing a low-PMSV ad.

According to AMIE and LCM research, the effectiveness of messages with different levels of PMSV may vary depending on an audience's SS level (Donohew, Finn, & Christ, 1988; Donohew et al., 1998; Zuckerman, 1979). Therefore, it is also hypothesized that OSL (SS) will moderate the effect of PMSV level on viewers' ad evaluations, when controlling for the personal relevance of the advertised product category:

H5: HSS subjects, viewing a high-PMSV ad, will report more favorable A_{Ad} than they will after viewing a low-PMSV ad, whereas for LSS subjects, viewing a low-PMSV ad, will lead to more favorable A_{Ad} than will viewing a high-PMSV ad.

H6: HSS subjects, viewing a high-PMSV ad, will report more favorable A_B than they will after viewing a low-PMSV ad, whereas for LSS subjects, viewing a low-PMSV ad, will lead to more favorable A_B than will viewing a high-PMSV ad.

H7: HSS subjects, viewing a high-PMSV ad, will report higher purchase intentions than they will after viewing a low-PMSV ad, whereas for

LSS subjects, viewing a low-PMSV ad, will result in higher purchase intentions than will viewing a high-PMSV ad.

Following Kang and Cappella (2008), this study employs a mixed design with a repeated exposure to ads varying in PMSV levels, where the potential effects of ad presentation order is explored. Since theirs is one of the only works to examine such phenomena, little is known about the potential of such effects. This issue may be particularly important, when investigating the effects of ad manipulations that involve intense imagery, such as graphic violence. Therefore, the following research question is posed:

R1: Does the order of exposure to ads differing in PMSV levels (i.e., image intensity) impact subjects' responses to them?

4.4. Method

Similar to Kang and Cappella (2008), this study employs a 2 (PMSV) \times 2 (SS) \times 2 (ad presentation order) mixed design to examine the differential effects of MSV and personality, in the processing of and response to print advertisements. While the first factor (PMSV) is a within-subjects factor, two others (SS and ad presentation order) were between-subjects factors. The data collection for this study was conducted in several phases. First, a pilot study (Pilot Study One) was conducted to select MMA to be used in the ad stimuli. Pilot Study One ($N = 33$) used a survey methodology to identify the perceived level of violence (i.e., image intensity) for pre-selected MMA images (Appendix O). Based on the results of Pilot Study One, four images were selected from three groups of MMA photos (i.e., nonviolent, moderately

violent, and violent action) to construct ad manipulations. In order to validate proposed ad manipulations, a second pilot study (Pilot Study Two) was performed using a sample of undergraduate college students ($N = 66$). Participants viewed three ads (Appendix P) in a random order and responded to the PMSV scale for each. Once the validity of ad manipulations were assessed, the main study ($N = 274$) was carried out with two ads (Appendix C) selected from Pilot Study Two. The following sections describe these data collection procedures in detail.

4.4.1. Pilot study one

The purpose of the first pilot study ($N = 33$) was to examine the perceived level of violence in pre-selected images of MMA, to help ascertain image intensity. MMA was selected for this study since it is one of the fastest growing sports and has become one of the most popular forms of sport programming among networks (Miller, 2008). For example, a leading MMA property – Ultimate Fighting Championship (UFC), drew 5.1 million pay-per-view sales in 2007, which increased dramatically from 14,500 in 2001 (Miller, 2008). Given the growing popularity and aforementioned violent nature of the sport, MMA seems appropriate for investigating the arousal-enhancing effects of a certain type of image intensity (i.e., sport violence) in the PMSV framework.

Prior to the data collection, 30 images of MMA were selected a priori from a large pool of images on MMA Web magazines (e.g., www.mmasportsmag.com), and classified into three subgroups, based on their content: nonviolent action, moderately violent action, and violent action. Images in the nonviolent action group were selected because they showed no attempts of any violent physical contact (e.g., punching,

kicking, or clinching) between two athletes. In the moderately violent action group, images were selected based on depiction of physical action (e.g., throwing a punch, kicking, or clinching) without the presence of clear violent contact between the athletes. By comparison, in the violent action group, images were selected that included clear physical contact (e.g., a punch or a kick landing on one's face) and depictions of pain and harm (e.g., blood loss, anguished grimaces). The latter would seem to be consistent with aforementioned qualities of intense imagery, as characterized by Niederdeppe et al., (2007). Two expert judges evaluated ten images from each subgroup to ensure that these images correspond to the aforementioned classification scheme. Following expert evaluation, 18 images (six images per group) were selected for testing the perceived level of violence (see Appendix O¹). All 18 images were in a black-and-white format to help control for potential color confounds. In addition, images selected for the study were modified to remove any association with a particular brand, media, or event, similar to other studies in the ad processing literature (e.g., Miller & Stoica, 2003). Moreover, an effort was made to avoid the use of any high-profile MMA athletes, to help circumvent any related affinity effects.

First, participants ($N = 33$) were recruited from sport management course in the Department of Kinesiology at a large East Coast research University. The researcher went into the classroom and introduced the purpose of the study and asked student volunteers to sign an informed consent form. Then the survey, containing images and questionnaires, were handed out to students. The order of image groups was randomized to control for potential ordering effects. The survey took

¹ Appendices are used for Study Three to provide additional information about the scales, ad manipulations, and statistical findings.

approximately 10 to 12 minutes for students to complete. Participants responded to a four-item perceived violence scale (Oliver et al., 2003) for the MMA images. The scale asked respondents to rank how (a) violent, (b) disturbing, (c) scary, and (d) aggressive they perceive the image to be, on a 7-point Likert-type scale ranging from 1 (*not at all*) to 7 (*very much*). After viewing and responding to six images per category, participants were then asked to rank six images from least violent to most violent within each group of photos.

Scores for perceived violence were summed and averaged for each image group. A one-way repeated analysis of variance (ANOVA) procedure was utilized to test differences in perceived violence between nonviolent action, moderately violent action, and violent action image groups. As expected, ANOVA results showed significant differences between the nonviolent action ($Mean = 5.86, SD = 1.79$), moderately violent action ($Mean = 8.98, SD = 2.29$), and violent action groups ($Mean = 14.03, SD = 3.25$) [$F(2, 64) = 221.91, p < .05$].

In order to select the images for creating ad manipulations that would provide appreciable contrasts in PMSV (image intensity), mean perceived violence scores were used to determine four images within each category of violence. For instance, the four highest rated images were selected from the violent group. In the moderately violent action group, four images between the highest and the lowest rated images were selected. In turn, the four lowest rated images were selected in the nonviolent action group. These selected images were placed in mock advertisements and then subjected to a second pilot study for the purpose of validating the intended PMSV manipulations.

4.4.2. Pilot study two

The purpose of Pilot Study Two was to construct and validate ad stimuli that differ in terms of PMSV. Using the images selected from Pilot Study One, three print ads promoting a DVD featuring MMA events were created, varying only the images of the ad across conditions: nonviolent, moderately violent, and violent action (Appendix P). Images selected from Pilot Study One were inserted in the ads to manipulate PMSV levels. All ad features including layout and size of the picture were identical across the ads (c.f., Thompson & Hamilton, 2006). In order to control for potential confounds, all ads were in black-and-white and contained a fictitious brand (i.e., MMA on DVD vol. 7). Print ads were used for this study since it is easier and more effective to control for other stylistic features (e.g., sound effects, motion, edits, etc.) in ad manipulations, as called for by Niederdeppe et al. (2007). Participants viewed three ads in a random order to assess the subjective MSV measured by the PMSV scale (Palmgreen et al., 2002).

Using the treatment booklets, the second pilot study ($N = 66$) was conducted to validate the ad manipulations based on the PMSV scale. Each participant was given a booklet containing the Positive and Negative Affect Schedule (PANAS) scale, three ads and a questionnaire. Prior to viewing ads, participants responded to a 20-item PANAS scale (Watson, Clark, & Tellegen, 1988) (see Appendix A). The PANAS scale is a valid and reliable measure that assesses one's individual mood state (Watson et al., 1988). The PANAS scale consists of two 10-item mood scales that comprise: 1) positive (i.e., enthusiastic, interested, excited, etc.); and 2) negative (i.e., scared, afraid, upset, etc.) affect. The PANAS scale was used to explore the

relationship between subjects' pretest mood state and subsequent ad response. According to Petty and Cacioppo (1986), the presence of positive mood should decrease message elaboration and thereby reduce the impact of argument strength on subsequent decisions. However, little is known about the influence of mood state on subjective MSV evaluations. After completing the 20-item PANAS scale, participants viewed the ad stimuli in random order. Following the viewing of each ad, participants responded to a set of questionnaires including the 15-item PMSV scale (Palmgreen et al., 2002) (see Appendix B). It should be noted that two items (i.e., strong/weak sound track, strong/weak sound effects) from the original scale were eliminated for this study since they were deemed inappropriate a study on print ads. The entire session required about 15 minutes to complete. At the end of the session, subjects were debriefed and thanked for their participation.

Reliability for PANAS subscales (i.e., PA and NA) was .88 and .90, respectively. Both the Leven's test (nonviolent ad, $F(5, 59) = 2.11, p = .08$; moderate violence ad, $F(5, 59) = 1.21, p = .32$; violent ad, $F(5, 59) = 1.03, p = .41$) and the Box's M-test (Box's M = 49.37, $p > .05$) confirm the assumption of homoscedasticity. A one-way repeated ANOVA was employed to compare PMSV scores in the three ads. As shown in Figure 4, the results indicate significant differences on PMSV scores between the nonviolent ad ($Mean = 2.68, SD = 1.03$), the moderate violence ad ($Mean = 3.37, SD = 1.09$), and the violent ad ($Mean = 5.31, SD = .88$) [$F(2, 59) = 150.18, p < .01$]. Despite the random rotation of ad images across subjects, there was still a significant ad order \times ad interaction effect on PMSV [$F(5, 59) = 2.46, p < .05$].

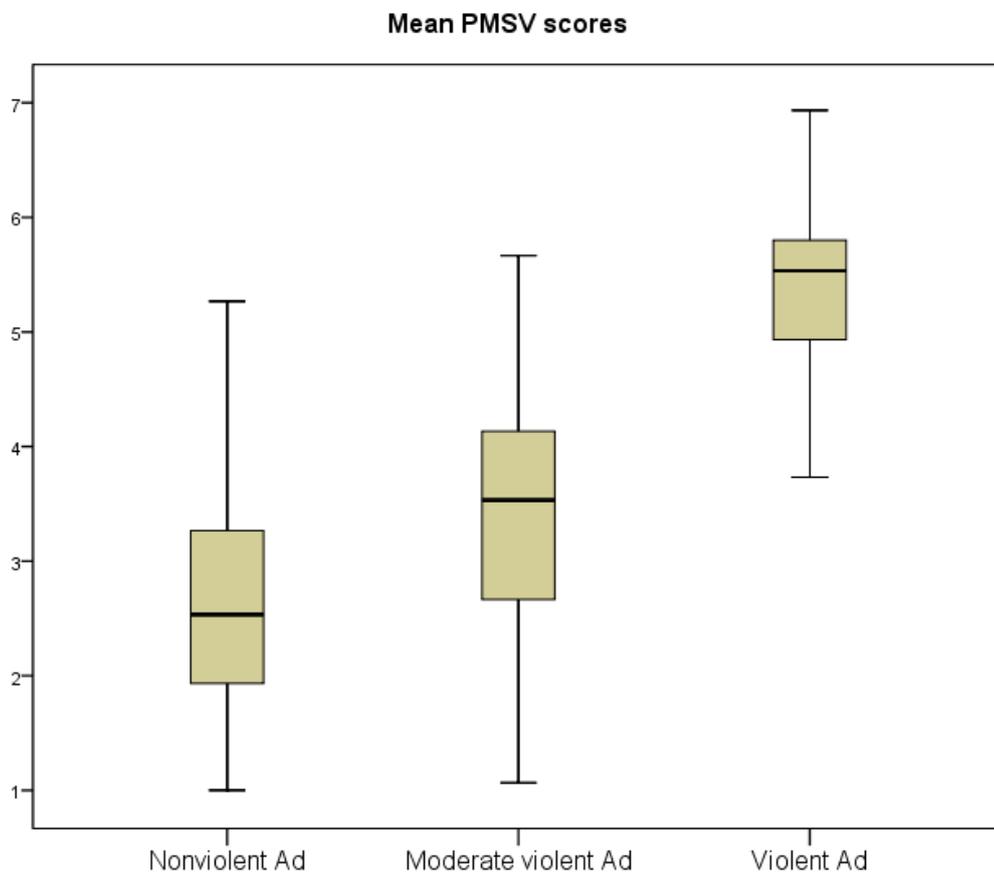


Figure 4. *Boxplots of Mean PMSV Scores across Ad Conditions.*

Pearson correlations were also computed to explore the associations between mood state (i.e., positive affect and negative affect) and PMSV. No significant relationships were found between PANAS subscales and PMSV suggesting that mood state did not have any significant influence on reported levels of PMSV (all p 's > .10).

As expected, these results support the validity of the MMA ad stimuli, by demonstrating significant differences in PMSV scores across ads as a function of image intensity (level of violence depicted). Based on the findings presented in

Figure 4, two ads (i.e., nonviolent and violent) depicting the largest contrast in image intensity were selected for the main study. This follows existing advertising research employing a two-level (high and low) ad manipulation (e.g., Donohew et al., 1998; Kang & Cappella, 2008).

4.4.3. Main study

Participants and design. Table 5 shows descriptive information about the participants in the main study. A convenience sample ($N = 273$) of undergraduate students currently enrolled at a major East Coast research University was used for this phase. The participants were 49% female participants ($N = 133$) and 71% Caucasian, with a mean age of 20.78.

Table 5. *Descriptive Statistics of Gender, Race, and Age by Ad Presentation Order.*

Variables	Order (N)		Total N (%)
	$N \rightarrow V$	$V \rightarrow N$	
Gender			
Male	71	69	140 (51%)
Female	66	67	133 (49%)
Race			
Caucasian	96	99	195 (71%)
African-American	10	12	22 (8%)
Asian	15	7	22 (8%)
Hispanic	9	8	17 (6%)
Other	7	10	17 (6%)
Mean age	20.72	20.83	20.78

Total $N = 273$.

A 2 (PMSV: high/low) \times 2 (SS: high/low) \times 2 (ad presentation order) mixed design was used to test the hypotheses. While PMSV is a within-subject factor, SS and ad presentation order are between-subject factors. In each session, participants viewed two ads in a random order with one containing the least intense (nonviolent) MMA imagery and the other portraying the most intense (violent) sport photos, based on results of the pilot testing.

Stimuli. To test the proposed hypotheses, two ads (scored lowest and highest in PMSV) were selected from the second pilot study (see Appendix C). All graphic elements, including size of the picture and text were identical across two ads except for the images used. Pilot Study Two verified that the ads had significant differences on PMSV scores. In order to ensure that the sample of the main study perceived the ad stimuli differently in terms of message sensation value, the PMSV scale (Everett & Palmgreen, 1995) was employed as a validity check.

Procedures. The main study consisted of three phases. In the first phase, executed in a classroom setting, groups of subjects ($M_{\text{group size}} = 27$) were informed that they were participating in the study of an ad promoting an MMA product. After completing the informed consent forms, participants were given a booklet containing two black-and-white print ads. Participants were then instructed to view the ads for 60 seconds each. After each timed ad viewing, participants were allowed approximately five minutes to complete self-report questionnaires including PMSV, perceived level of violence, and dependent measures (A_{Ad} , A_{B} , purchase intention, and arousal). Two possible orders of ad presentation (least intense-most intense images or most intense-least intense images) were utilized across the sample, in an effort to control for

ordering effects (Kang & Cappella, 2008). Further, following Miller and Stoica (2003), a three-minute distracter task (consisting of simple math problems; see Appendix D) was employed prior to exposure to the second ad, in an attempt to control for possible carry-over effects from the first ad. After completing ad response measures, subjects responded to scales that gauged their SS levels, personal relevance with MMA (PII), and demographic variables. At the end of the session, participants were debriefed and thanked for their participation. The duration of the session was approximately 25 minutes.

Measures

Independent measures: PMSV. A 15-item revised PMSV scale from Everett and Palmgreen (1995) was used to assess the PMSV (see Appendix B). The scale is designed to measure affective, sensory, and arousal responses to messages on bipolar pairs of adjectives such as “novel-ordinary,” “emotional-unemotional,” “exciting-boring,” and “strong visuals-weak visuals.” Each pair is assessed with a seven-point Likert-type scale. Similar to Pilot Study Two, two items measuring audio effects (i.e., great/weak sound effects and great/weak sound track) were eliminated from the original scale.

Brief sensation seeking scale. Subjects’ SS trait levels were measured with the eight-item BSSS-8 (Hoyle, Stephenson, Palmgreen, Lorch, & Donohew, 2002) (see Appendix E). BSSS-8 is composed of an eight-item Likert-type questionnaire with the four dimensions of SSS-V represented by two items each. Existing research indicates that this BSSS is positively related to risky behaviors (i.e., drug use) and the scale is valid and reliable in assessing individual’s arousal-seeking tendencies (Hoyle

et al., 2002). Responses were indicated on seven-point Likert-type scales. To compare the effects of PMSV by SS level, the respondents were categorized as HSSs or low LSSs based on a median split. Given that SS theory posits gender differences, the median split was also adjusted by gender, to account for significant gender differences (e.g., Niederdeppe et al., 2007; Palmgreen et al., 2002; Stephenson & Palmgreen, 2001).

Covariate and validity measures. In order to negate the potential influence of sport-specific affinities (c.f., McDaniel et al., 2007), Zaichkowsky's (1994) Personal Involvement Inventory (PII) was adapted in the current study. A five-item adaptation estimates both the cognitive and affective dimensions of personal relevance (Martin, Lang & Wong, 2003). Items include: important-unimportant; of concern-of no concern; matters to me-does not matter; significant-insignificant; means a lot to me-means nothing to me. In order to assess the validity of the PMSV scale, Oliver et al.'s (2003) perceived violence scale was used. Respondents were asked to rank how (a) violent, (b) disturbing, (c) scary, and (d) aggressive they perceive the ad to be on a 7-point Likert-type scale ranging from 1 (*not at all*) to 7 (*very much*).

Dependent measures. The outcome measures of this study include arousal, A_{Ad} , A_B , and PI (see Appendix F). Arousal was assessed by employing the Self-Assessment Manikin (SAM) (Lang, 1980). SAM is a quick, image-based method of quantifying subjective feeling states on the three fundamental dimensions of emotions (i.e., pleasure, arousal, and dominance). A series of graphical figures are used to elicit a single rating for arousal (ranging from extremely aroused to extremely calm). The

version of the SAM used in the present study used a single item with icons associated with a 9-point scale for arousal (Lang, Bradley & Cuthbert, 1997).

All other dependent variables (A_{Ad} , A_B , and PI) are presented in semantic differential format as consistent with existing advertising research (e.g., McDaniel et al., 2007; Petrova & Cialdini, 2005). A_{Ad} is assessed with four items (good/bad; interesting/uninteresting; like/dislike; pleasant/unpleasant). A_B is measured with three items (like-dislike; unfavorable/favorable; good/bad). Similarly, PI is estimated with three items (probable/improbable; likely/unlikely; possible/impossible). A seven-point scale was used for A_{Ad} , A_B , and PI.

Data analyses. Given the main study is a $2 \times 2 \times 2$ mixed design with one within-subject factor (i.e., PMSV), and two between-subject factors (i.e., BSSS and order), a repeated general linear model (GLM) was selected for testing hypotheses (c.f., Kang et al., 2008). A repeated GLM allows researchers to simultaneously assess the main effects of within-subjects factor and between-subjects factors, as well as any potential interaction effects. PMSV was defined as a within-subjects factor with two levels (high and low image intensity) and BSSS (high and low) and ad presentation order (low PMSV- high PMSV or high PMSV-low PMSV) were employed as between-subjects factors in the model. Further, in order to control for personal relevance with the sport of MMA, PII was employed as a covariate in the analyses (McDaniel et al., 2007).

4.5. Results

4.5.1. Scale reliability

Internal consistency coefficients (Cronbach alpha) for multi-item measures including PII, BSSS, PMSV, perceived violence, A_{Ad} , A_B , and PI were calculated, to examine construct reliability. PII and BSSS were measured once, while PMSV and ad response items were measured following each of the ad exposures. For PII ($Mean = 3.49$, $SD = 1.84$) and BSSS ($Mean = 4.69$, $SD = 1.15$), Cronbach alphas were .78 and .83, respectively. Table 6 indicates the mean, standard deviation, and Cronbach alpha coefficients for scales repeated across ad conditions.

Table 6. Means, Standard Deviations, and Cronbach Alpha Coefficients of Scaled Measures Across Ad Conditions

Variables	Ad type					
	Low-PMSV ad			High-PMSV ad		
	<i>Mean</i>	<i>SD</i>	<i>a</i>	<i>Mean</i>	<i>SD</i>	<i>a</i>
Perceived violence	2.22 ^a	1.08	.83	5.32 ^a	1.35	.83
PMSV	2.77 ^b	.80	.86	4.99 ^b	.79	.84
Arousal	3.15 ^c	1.79	--	5.31 ^c	2.10	--
A_{Ad}	3.63 ^d	1.18	.86	3.71 ^d	1.47	.91
A_B	3.95 ^e	1.37	.94	3.54 ^e	1.60	.96
PI	2.33	1.43	.91	2.59	1.72	.95

Note. Means with similar superscripts differ significantly from one another at $p < 0.05$.

Overall, Cronbach alpha levels of all scaled measures ranged from .83 to .96, aligning with previous research in personality and advertising using these constructs (Hoyle et al., 2002; McDaniel et al., 2007; Palmgreen et al., 2005; Petrova & Cialdini, 2005).

4.5.2. Scale validity

Construct validity. Given the ad stimuli were manipulated based on the level of image intensity (i.e., violence), the validity of the PMSV scale was demonstrated by its correlation with perceived violence levels associated with each ad. The data support construct validity of PMSV as both the low-PMSV ad ($r = .48, p < .01$) and the high-PMSV ad ($r = .29, p < .01$) were significantly associated with perceived violence. In addition, the construct validity of the BSSS scale was demonstrated by its significant gender differences ($t = 3.77, df = 270, p < .01$). The data suggested that males ($Mean = 4.94, SD = .98$) reported significantly higher mean BSSS levels than females ($Mean = 4.42, SD = 1.26$). These results are in line with the literature on SS theory, where males generally report higher scores than females (Zuckerman, 2007).

Internal validity. Given that the presentation order was randomly assigned to respondents, one-way ANOVA tests were conducted to confirm that there are no mean differences in terms of PII and BSSS across presentation orders. The results support that PII [$F(1, 269) = 1.30, p = .25$] and BSSS [$F(1, 270) = .41, p = .53$] had no significant differences across presentation order groups.

4.5.3. Manipulation check

According to O’Keefe (2003), for a better understanding of how message features influence the persuasion process, it is best to (1) describe the manipulation of the message features independent of their intended effects and (2) measure the processes that are believed to underlie the effects of the message features as well. Following O’Keefe’s (2003) suggestion for manipulation checks, in experimental message effect research, both PMSV and perceived violence scales were utilized here. This approach also answers a call from Niederdeppe et al. (2007), to use continuous measures to gauge ad content such as image intensity.

As in Pilot Study Two, univariate repeated ANOVA results indicated significant effects of ad type on PMSV. Likewise, in the main study, follow-up analysis demonstrated that PMSV scores ($Mean = 4.99, SD = .79$), for the ad stimuli intended to depict the most intense imagery, were significantly higher than for ad intended to contain the least intense imagery ($Mean = 2.77, SD = .80$). As shown in Table 7, perceived level of violence was also significantly higher for the ad with violent sport images ($Mean = 5.32, SD = 1.35$) than for the ad with nonviolent images ($Mean = 2.22, SD = 1.08$).

Table 7. Manipulation Check Means of PMSV and Perceived Violence

Measure	Ad type		<i>t</i>	<i>P</i>
	Low-PMSV Ad	High-PMSV Ad		
PMSV	2.77	4.99	37.05	.00
Perceived violence	2.22	5.32	33.32	.00

4.5.4. Hypotheses testing – PMSV main effects

Prior to testing the hypotheses, data were examined for normality, linearity, and homogeneity of variance. Histograms with normal curve, standardized residual scatter plots, Levene statistics, and Box's tests confirmed linearity, normality, and homoscedasticity. For example, the Levene statistics and Box's tests showed no difference on all dependent variables (all p 's > .05), confirming the assumption of homoscedasticity of all dependent measures.

The first four hypotheses proposed that PMSV levels associated with ads influence subsequent emotional response and ad evaluations such that the high-PMSV ad will elicit greater arousal (H1) and will lead to more favorable A_{Ad} (H2), A_B (H3), and PI (H4), when controlling for the personal relevance (PII) of MMA. With regards to the covariate, PII showed significant effects on arousal [$F(1, 264) = 315.83, p < .01$], A_{Ad} [$F(1, 264) = 44.69, p < .01$], A_B [$F(1, 265) = 56.63, p < .01$], and PI [$F(1, 265) = 62.03, p < .01$]. Subjects' PII levels explained the greatest amount of variance in all of their responses to ad manipulations. The results also indicate significant PMSV main effects for arousal [$F(1, 264) = 46.20, p < .01$], A_{Ad} [$F(1, 264) = 5.99, p < .05$], and A_B [$F(1, 265) = 19.41, p < .01$], supporting H1, H2, and H3 (see Appendices G, H, and I). The significant mean differences in ad responses by PMSV level can be seen above in Table 6. After accounting for the effects of PII, the PMSV factor explained 15% of the variance in arousal, 2% in A_{Ad} and 7% in A_B . Although, PMSV did not have a significant main effect on PI [$F(1, 264) = .09, p > .05$], failing to support H4 (see Appendix J). Consequently, for the subjects in this study, differences in PMSV levels significantly affected the majority of their ad responses.

4.5.5. Hypotheses testing – PMSV \times SS interaction effects

The remaining four hypotheses predicted an interaction between PMSV and SS levels, on the dimensions of emotional and ad responses. Specifically, SS was posited to moderate the effects of PMSV on A_{Ad} (H5), A_B (H6), and PI (H7). As shown in Figure 5, only H5 was supported, as data analysis showed significant PMSV \times SS disordinal interaction effects on A_{Ad} . After accounting for other significant effects, the above interaction explained 2% of the variance in the model. HSSs reported more favorable A_{Ad} in the high-PMSV ad condition ($M = 3.79$, $SD = 1.48$) than for the low-PMSV ad manipulation ($M = 3.51$, $SD = 1.17$).

In turn, LSSs reported more favorable A_{Ad} in the low-PMSV ad condition ($M = 3.70$, $SD = 1.18$) than in the high-PMSV ad condition ($M = 3.64$, $SD = 1.45$) (see Figure 5). However, the results of the study revealed that, contrary to the research hypotheses, there was no significant interaction effect between PMSV and SS on respondents' arousal, A_B , and PI. These non-significant findings are shown in Appendices G, I, and J. Therefore, no support was demonstrated for H5, H7, and H8. Based on the results of these analyses, subjects' SS levels appear to moderate PMSV effects on ad evaluations, but only in terms of likeability (A_{Ad}).

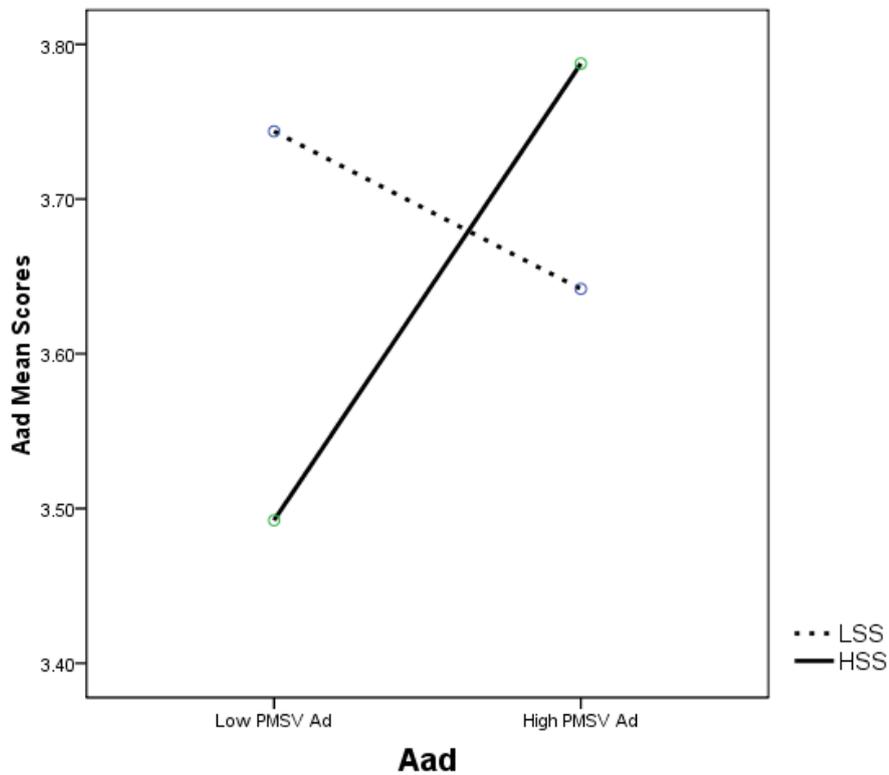


Figure 5. *Interaction Effect of PMSV × SS on A_{Ad}*

4.5.6. Presentation order effects

While an effort was made to avoid possible ordering effects, by rotating the presentation of ads in this study, it is still possible that the differences in PMSV levels (image intensity) produced an ad ordering effect (cf., Kang & Cappella, 2008). In order to explore this research question (R1), ad presentation order was part of the factorial design. Despite randomizing ad exposures, analyses indicate that ad presentation order still had a significant main effect on PI [$F(1, 264) = 10.34, p < .01$], which explained 13% of the variance that variable. Participants in the low PMSV-high PMSV ad order group, who viewed the ad with nonviolent images prior to the ad

containing violent images, reported more favorable PI than participants in the high PMSV- low PMSV ad ordering group.

In addition, there were significant PMSV \times order interaction effects on all ad response measures: arousal [$F(1, 264) = 10.34, p < .01$], A_{Ad} [$F(1, 264) = 13.59, p < .01$], A_B [$F(1, 264) = 20.38, p < .01$], and PI [$F(1, 264) = 38.37, p < .01$]. (see Appendices K, L, M, and N). After accounting for other significant effects in the models, the above interaction explained 7% of the variance in arousal, 4% in A_{Ad} and 7% in A_B and 13% in PI. However, the nature of the interaction effect on arousal (Appendix K) differed from the other results (Appendices L, M, and N). As shown in Figure K1, PMSV \times ad order had an ordinal interaction effect on arousal. Although, there were slight differences between the ad-sequence groups, in terms of arousal levels reported for the two different ads, subjects reported higher levels of arousal for the ad with the most intense imagery than for the ad containing the least intense imagery, regardless of ad presentation order. Conversely, the patterns of means for all ad evaluation measures indicate disordinal interactions (see Figures L1-N1). In other words, participants in the low PMSV-high PMSV ad presentation group responded more favorably toward the high-PMSV ad, whereas participants in the high PMSV-low PMSV ad imagery group reported more favorable evaluations toward the low-PMSV ad. Therefore, for the participants in the current study, effects of PMSV levels on their ad responses were significantly moderated by the order in which the manipulations were presented to them.

4.6. Discussion

The purpose of this research was to investigate the PMSV-enhancing effect of a specific message feature (i.e., image intensity) and its influence on responses to ads promoting sports entertainment. Following the existing literature on MSV and ad processing (e.g., Donohew et al., 1998; Niederdeppe et al., 2007), this study isolated the independent effects of image intensity (i.e., violence) and compared the related valence on ad responses across individuals' arousal-seeking levels (i.e., SS). As such, it is the first known attempt to examine PMSV effects for commercial advertising (vs. PSAs).

According to Niederdeppe and colleagues (2007), previous research testing the AMIE and LCM has repeatedly failed to support key theoretical propositions (e.g., Stephenson, 2002, 2003), by not identifying which message features enhance attention and/or message processing (Palmgreen et al., 2002). While empirical studies have identified multiple structural and content features that contribute to PMSV, Donohew et al. (1991) found that message content features such as novelty or fear appeals help distinguish the preferences between HSSs and LSSs. Therefore, this study explored the potential arousal-enhancing effects of PMSV, by isolating the content feature of image intensity (i.e., sport violence).

Compared to previous PMSV research on television PSAs, this investigation utilized print ads to examine the effects of PMSV and individual trait (SS) on message processing. Print ads were used in this study in an effort to control for potential confounding effects from various stylistic features (e.g., audio and visual effects) used in television commercials (Niederdeppe et al., 2007). Since this is the

first known attempt to test the AMIE and LCM theories in a print ad context, a set of pilot studies were conducted to construct and validate the ad stimuli that significantly vary in terms of level of violence (e.g., Donohew et al., 1998). As shown in Figure 4, the results support that the PMSV levels significantly differed across ad conditions. After successfully validating the ad stimuli, two ads were selected in the main study to test the research hypotheses. The design and method are in line with other print advertising research (e.g., Millet & Stoica, 2003; O’Keefe, 2003).

4.6.1. Influence of PMSV on ad response

The current study replicates and extends the MSV literature by examining the influence of PMSV on affective ad response. According to the previous literature, messages high in MSV should elicit an audience’s arousal, attention, and favorable ad evaluations (Donohew et al., 1998; Everett & Palmgreen, 1995; Stephenson & Palmgreen, 2001). Consequently, the first four hypotheses posited that PMSV levels in ad manipulations promoting an MMA product would have a significant positive influence on respondents’ arousal (H1), A_{Ad} (H2), A_B (H3), and PI (H4), after controlling for their involvement with the sport (MMA). In line with existing literature, the repeated GLM results showed significant PMSV main effects on participants’ self-reported arousal, A_{Ad} , and A_B scores (Everett & Palmgreen, 1995; Stephenson & Palmgreen, 2001). Specifically, the findings indicated that the high-PMSV ad manipulation elicited higher arousal levels and more favorable ad evaluations than the low-PMSV ad, supporting H1, H2, and H3 (see Table 6). However, PMSV did not have a significant influence on PI (H4). Although PI was not associated with PMSV levels, the other results appear to support the notion that high-

PMSV ads are effective in generating positive ad response (Donohew et al., 1991), facilitating favorable ad processing and evaluations (Everett & Palmgreen, 1995; Stephenson, 2002, 2003).

4.6.2. Influence of SS × PMSV on ad response

According to SS theory, HSSs should preferentially select arousing and intense messages for processing over calm and less stimulating messages since they are high in sensation value (Zuckerman, 1994). Previous studies on SS and message processing (Donohew et al., 1991; Lorch et al., 1994, Morgan et al., 2003) suggest that SS moderates the effect of PMSV on ad response. Therefore, based on the existing literature, it was hypothesized that there would be significant interaction effects between PMSV and SS on subjects' A_{Ad} (H5), A_B (H6), and PI (H7) levels. The results of the study indicate the significant moderating influence of SS on A_{Ad} , supporting H5. As shown in Figure 5, HSS subjects reported more favorable attitudes toward a high-PMSV ad than for a low-PMSV ad, while LSS subjects reported more favorably toward a low-PMSV ad than they did for a high-PMSV ad. The above results support the notion that message effectiveness of ads with different levels of MSV may vary as a function of audience SS levels (Palmgreen et al., 2001). This finding is in line with SS theory, in that HSSs prefer stimuli that are novel, complex, and ambiguous eliciting strong emotional reactions, whereas LSSs prefer less intense and realistic stimuli (c.f. Zuckerman, 1994).

The moderating influence of SS on the effect of PMSV on ad response was not evidenced in results for arousal, A_B , and PI measures. However, the failure to detect significant moderating effects of SS on PMSV messages, for the above

measures, is consistent with some prior research in this domain. Studies that have explicitly examined the interaction effect between PMSV and SS have had mixed results (c.f., Niederdeppe et al., 2007). For example, Lorch et al. (1994) found no moderating effect of SS on visual attention to antidrug ads. Further, Stephenson and Palmgreen (2001), Palmgreen et al. (2002), and Stephenson (2002, 2003) all found that PMSV-effects on message processing was evidenced in their subjects, regardless of SS level, suggesting a lack of interaction effects. Although Palmgreen et al. (1991) found a $PMSV \times SS$ interaction effect in intention to call an antidrug hotline, this relationship was only marginally significant ($p = .06$). Similar to the current study, Harrington et al. (2003) found a main effect of PMSV on anti-marijuana PSA attitude, intentions, and behavior, but found only one significant moderating effect of SS on attitude towards an anti-marijuana PSA. In research incorporating physiological measures, Lang and colleagues (2005) found no significant interactions between PMSV and SS on physiological arousal and message recognition. In a more recent work, Niederdeppe et al. (2007) isolated stylistic message features (i.e., number of edits and unrelated cuts) to examine $PMSV \times SS$ interaction effects on ad recall, but no differential effects were observed by SS.

As such, a number of previous empirical studies have failed to demonstrate the AMIE theory's central proposition – the moderating effect of SS on response to PMSV ads. The current study also found limited support for the moderating role of SS on PMSV message processing, in the ad context examined here. Only A_{Ad} was moderated by SS that a high-PMSV ad was more favored by HSSs compared to LSSs. Perhaps, high-PMSV messages would be effective in attracting attention rather than

processing among HSSs. Paying more attention does not necessarily entail putting more cognitive effort into processing the message. However, in most studies involving message processing, attention is forced, and, therefore, assumed (Niederdeppet et al., 2007). In examining the attentional effects of MSV, Kang, Cappella, and Fishbein (2006) found that MSV features were unrelated to focus on the argument quality of the message, suggesting that the effects of MSV features may be separate from processing of central arguments. Therefore, further studies should consider examining both attention and processing of a particular message features to demonstrate the AMIE's central proposition that SS moderates the influence of PMSV message processing (c.f., Niederdeppe et al., 2007).

Another possible explanation for the lack of a significant SS moderating effect SS would be an arguably arbitrary categorization of SS. As SS is difficult to manipulate at the individual participant level, the researcher used a multi-item measure to capture differences in SS among participants. It should be noted that most PMSV studies performed a median split to categorize participants as HSS and LSS (Niederdeppe et al., 2007; Palmgreen et al., 2002; Stephenson & Palmgreen, 2001), as was the case here. Although, using a median split might obscure important differences between groups with more extreme differences in SS and thus could potentially lead to misleading interpretations of the hypothesized relationship (Fitzsimons, 2008). Therefore, further studies might consider using alternative approaches to treating the SS variable in statistical analyses. For example, using upper and lower quartiles (Ball & Zuckerman, 1992; Joseph, Liu, Jiang, Lynam, &

Kelly, 2009) or selecting one standard deviation above and below the mean (Fitzsimons, 2008) is suggested in future research.

4.6.3. Influence of presentation order on ad response

The findings of this study also suggest that ad presentation order in repeated ad exposures can significantly influence ad response, when using intense images, such as sport violence. The results (see Appendices K, L, M, and N) showed that presentation order had a significant main effect on PI as well as significant interaction effects with PMSV on all dependent variables; although, the nature of the interactions differed, as arousal results were ordinal and the other results were disordinal. For example, the pattern of means in Figure K1 (Appendix K) suggest that, while mean arousal levels for the high-PMSV ad were greater for the low PMSV-high PMSV group, those in the high PMSV-low PMSV condition reported slightly higher arousal than their counterparts, in response to the low-PMSV ad. Nevertheless, it should be noted that, no matter the presentation order, the ad with the most intense images evoked higher levels of arousal than the ad with the least intense images. In terms of ad evaluations, subjects who viewed the low-PMSV ad first responded less favorably towards it than those who viewed the high-PMSV treatment first. Conversely, the respondents initially exposed to the high-PMSV manipulation, gave it less favorable evaluations, when compared to those who saw the low-PMSV ad prior to it (see Figures L1-N1).

In other words, the nature of subjects' ad evaluations was dependent upon the sequence in which they viewed the PMSV ad manipulations and this effect appears to be associated with arousal levels related to ads, based on the patterns of

mean ad responses. For example, subjects in the low PMSV-high PMSV ad ordering group reported more favorable evaluations for the ad with the imagery they found to be most stimulating; meanwhile, for those assigned to the other ad condition, where they were exposed to the high-PMSV ad first, their arousal levels appear to be inversely related to their ad evaluations. Thus, the results of this research suggest that presentation order of PMSV manipulations matters in message effectiveness associated with certain intense images (e.g., graphic sports violence). Previously, few PMSV studies have employed a mixed design with repeated exposures, where ad ordering effects were examined. For instance, Kang and Cappella (2008) used repeated exposures to examine the effects of MSV appraisal on AIDS and antiviolence PSAs. Their participants viewed two sets of PSAs that varied the valence (positive vs. negative) in a random order. Similar to the current experiment, they used ad presentation order as a within-subjects factor in their mixed design model. However, they found that the order in which ads were presented did not have significant main or interaction effects on message effectiveness, in that ad context (Kang & Cappella, 2008).

In consumer psychology research, relatively few studies have examined the effect of presentation order in message persuasiveness (c.f., Buda & Zhang, 2000; Haugtvedt & Wegener, 1994). Although, a compelling and widely recognized psychological theory on behavioral activation systems might help to explain the PMSV \times ad presentation order interaction effects found here (Gray, 1987; Watson, Wiese, Vaidya, & Tellegen, 1999). According to Watson and colleagues (1999), there are two broad forms of activation and behavior that mediate goal-directed approach

and withdrawal behaviors. The primary function of the Behavioral Inhibition System (BIS) is to help organisms avoid aversive stimuli. The BIS concentrates on analyzing and avoiding certain stimuli, especially novel stimuli that could indicate negative feelings such as danger or risk (Gray, 1987). For example, the results for PMSV x ad presentation order interactions on ad evaluations showed that participants viewing the most intense ad imagery first reported more favorable evaluations toward the following ad, containing less intense imagery. Therefore, when subjects viewed the most arousing stimuli first, BIS might have been activated, inducing them to avoid and defend against the stimuli. Thus, when they were exposed to the low PMSV manipulation in the following sequence, the ad imagery might have been perceived as *safe*, given they reported lower arousal levels and more favorable ad evaluations after viewing it. This type of phenomena has also been evidenced in advertising research that uses fear appeals (Dillard & Peck, 2001). Some researchers propose that the negative graphic depiction of threat in a fear appeal can evoke disgust (Woody & Teachman, 2000). Psychologists have recognized that fear and disgust from intense stimuli interact in threat appraisal and defensive avoidance (Sawchuk, Lohr, Lee, & Tolin, 1999; Woody & Teachman, 2000).

By comparison, the participants in the current study receiving exposure to the low-PMSV ad first, rated the high-PMSV ad which followed, as more arousing and subsequently more favorable than the former. This particular pattern of responses might be attributable to the goal-directed Behavioral Activation System (BAS), which is an appetitive system of behavioral approach (Palmgreen et al., 2002). BAS affects an individual's approach to novel stimuli and enhances engagement with such

environment. Therefore, it is possible that, when one is exposed to a non-stimulating message first, it could then be viewed as *boring*, subsequently making the following (more intense) ad content more appealing. The results suggest that respondents in the low PMSV-high PMSV ad condition group responded more favorably toward the ad with the violent images, as shown in Figures L1, M1, and N1. Consequently, the order effects findings could be viewed as supportive of individual differences in BIS and BAS, where people differ in the seeking and avoidance of particular kinds of stimuli and messages (Palmgreen et al., 2002). Such a pattern was demonstrated by two types of image intensity (high- and low-PMSV), presented in different orders. However, conclusions should be made with caution since the study manipulated PMSV as a function of image intensity (i.e., type and level of sport violence depicted). Other content features and/or presentation styles can also have differential effects on the message response (Miller & Lehsner, 2007; Newhagen, 1998). Therefore, further studies should manipulate similar (and other) PMSV-enhancing message features and directly test the mechanisms through which MSV affects ad evaluations (cf., Kang & Cappella, 2008).

4.6.4. Promotion of mediated violence

Given that image intensity (PMSV) in this study was manipulated by the level of spectator sport violence depicted in ads, the findings of this study also have implications on the promotion of mediated violence (c.f., Grier, 2001; Krcmar & Greene, 1999; McDaniel, 2004; McDaniel et al., 2007). Consistent with expectations, varying ad content in the above fashion was effective in influencing subjects' arousal levels and subsequent ad evaluations (see Appendices G, H, and I). While the

identification of a message content feature (e.g., intense imagery: violence) that enhances message persuasiveness helps inform marketing practitioners and scholars, there are also important public policy issues inherent in this line of research. Given its explicitly violent nature, some states have strong opposition against promoting MMA events (Jackson, 2009). Despite its regulation in certain parts of the U.S., MMA continues to expand globally and access to its coverage is increasingly easy via the Internet (Miller, 2008). Therefore, findings of this study add to research on the promotion and consumption of violent entertainment media, which might inform policy in this area (McDaniel, 2004; McDaniel et al., 2007). This research also contributes to our knowledge base in the U & G paradigm, when applied to the study of sport media, which adds to the literature in this area (Krcmar & Greene, 1999; McDaniel, 2004; McDaniel et al., 2007).

4.6.5. Limitations and future directions

Although the current study is grounded in existing research on PMSV and ad response (c.f., Everett & Palmgreen, 1995; Niederdeppe et al., 2007; Palmgreen et al., 2002; Stephenson, 2002; Stephenson & Palmgreen, 2001), it has certain limitations that should be noted. First, the study used a homogenous undergraduate student sample from one region of the country. Thus, the results of the study may not be generalized to college students in other areas. In addition, the findings cannot be generalized to non-student populations. Therefore, it is proposed that future research should include heterogeneous populations. In addition to limitations related to sampling procedures, another potential limitation is that the current study examined the arousal-enhancing effect of violence in a specific spectator sport context (e.g.,

MMA). Whether the arousal-enhancing effects of violence observed herein will also occur with different sports (e.g., football, auto racing) or in different media contexts (e.g., movies or news) remains to be investigated. Further replications should vary types of sports or entertainment contexts to better understand the nature of mediated violence in the PMSV paradigm.

The present study used a repeated measures design to examine the influence of PMSV on ad response (cf., Kang & Cappella, 2008). Each participant was given a booklet that contained both low-PMSV and high-PMSV ads in a random order. The results showed that presentation order had significant interaction effects with PMSV on all outcome measures. Using repeated measures can preclude a definitive causal conclusion about the relationship between specific content feature and ad response. Thus, in order to control for potential carry-over effects resulting from repeated exposures, subsequent studies will need to employ between-subjects designs in studying PMSV ad processing.

In addition, future studies should consider including gender in the model. From a theoretical standpoint, gender plays an important role in explaining preferences for (violent) media entertainment. For instance, media violence research has well documented that males tend to enjoy violent (sport) media more than females (Bryant & Raney, 2000; McDaniel, 2004; McDaniel et al., 2007; Sargent, 2003). Furthermore, such group-level (i.e., gender) differences appear to be more salient in the sport context (c.f., McDaniel et al., 2007; Sargent, 2003). Thus, subsequent studies should incorporate gender in the model to examine if males and females respond differently to the PMSV messages.

Finally, the current study used arousal and ad evaluations as indicators of message effectiveness. Although emotional response, attitude and behavioral intention are a reasonable proxy for message effectiveness (Altsech, 1997; Garnder, 1985; Holbrook & Batra, 1987), more outcome measures should be incorporated to assess the message effectiveness. Empirical evidence shows that advertisement-evoked imagery often mediates cognitive and affective responses to advertising (c.f., Miller, Hadjimarcou & Miciak, 2000). Furthermore, Everett and Palmgreen (1995) suggested that MSV features can function independently and in combination to attract attention. Therefore, it remains to be examined whether high-PMSV ads facilitate more imagery processing than low-PMSV ads. Future studies will need to focus on viewers' attention to, as well as imagery processing of, stimulating message (Miller & Leshner, 2007; Miller et al., 2000). Lastly, future studies should also consider using physiological measures, such as heart rate, blood pressure, and skin conductance (Detenber, Simons, & Reiss, 2000; Lang, 1999), to better capture respondents' arousal and emotional response.

4.6.6. Conclusion

In conclusion, the current study responds to calls for research regarding the identifying of specific message feature that enhances PMSV and its influence on ad response (Lang et al, 2005; Niederdeppe et al., 2007). A PMSV-enhancing effect of ad image intensity (violence) was validated and confirmed by preceding pilot studies. The main study sought to explore the effect of PMSV on arousal and ad evaluations by manipulating image intensity in the ad stimuli. The results of the study generally supported PMSV main effects on ad responses, suggesting that a high-PMSV ad

elicited more arousal and favorable A_{Ad} , and A_B than a low-PMSV ad (Donohew et al., 1991; Donohew et al., 1995; Everett & Palmgreen, 1995; Niederdeppe, 2005; Palmgreen et al., 2001; Stephenson, 2002, 2003). However, there was limited support for the AMIE and LCM's central proposition that SS moderates the PMSV effect on ad response. Only the PMSV effect on A_{Ad} was moderated by individual differences in need for sensation. Future studies might consider using alternative SS categorization approaches to further examine the potential moderating role of SS in the PMSV message processing. Consequently, methodological limitations notwithstanding, this study provides initial evidence that violence as a specific PMSV-enhancing feature elicits arousal and favorable ad evaluations among college students, in the promotion of certain sport media. Therefore, it suggests that the PMSV paradigm has utility in the study of commercial advertising and violent entertainment.

Chapter 5: Summary and Conclusion

Despite the emergence of interactive sport media, such as fantasy sport and SVGs, or the popularity of specialized programming (e.g., MMA), relatively little systematic research has been conducted to explore sport media consumption from a consumer behavior perspective (McDaniel et al., 2007). In order to better understand sport consumers, this dissertation explored sport media consumption behavior across different settings, through a series of three investigations. Using the broader U & G approach (Katz et al., 1974) as an overarching paradigm, these studies investigated what person-related factors (e.g., knowledge, skill, individual differences, etc.) determine acceptance, loyalty, and information processing in sport media consumption contexts. While Study One and Study Two examined interactive sport media consumption (i.e., Internet and video game), Study Three focused on print media promoting a televised sport product.

Further, each study took a different methodological approach in testing the proposed hypotheses. In particular, Study One used an online survey method to collect the data and employed an MMR statistical technique test the proposed hypotheses. Study Two involved actual users of a specific SVG (FIFA soccer games), to examine the structural relationships among satisfaction, attitudes, gaming skill, and loyalty. Actual users of the game were queried through online and offline surveys. In turn, Study Three used an experimental design to examine the effectiveness of ad promoting MMA product. Using a college student sample, Study Three was divided

into three phases to construct and validate ad manipulations based on image intensity, as well as testing information processing theories (i.e., AMIE and LCM). A $2 \times 2 \times 2$ mixed design is used to test the hypotheses. Therefore, the three investigations illustrate how different research designs and modeling techniques can be used to help us understand a variety of sport media behaviors (and consumers). The theoretical frameworks, empirical findings, and implications of each study will be discussed below.

Study One examined factors that predict the adoption of fantasy sport leagues. The popular online sport phenomenon, fantasy sport leagues, uses interactive media technology (i.e., Internet) and the acceptance of the system demands context-specific attitudes, knowledge, and familiarity about the system. Therefore, Study One used TAM (Davis, 1989) as the main theoretical framework; the study extended the model by adding several context-specific variables. Specifically, the study examined how attitude toward the televised sport (football), perceived ease of using a related fantasy sport website system, perceived knowledge of the sport, and subjective norms play roles in explaining attitudes and behavioral intentions toward playing fantasy football. Overall, the above antecedents explained moderate amounts of variance in both hedonic attitudes toward fantasy football and behavioral intentions to participate. These findings are in line with the previous TAM research, providing support to the notion that favorable attitudes, ease of use, domain-specific knowledge, and social support positively influence favorable beliefs and behavioral intentions towards a particular technology system (Alshare, Grandon, & Miller, 2005; Ha et al., 2007; Jung et al, 2008; Zhang & Mao, 2008). The TAM model employed herein also adds

to our understanding of the uses (ease of use) and gratifications (favorable beliefs and behavioral intentions) of fantasy sport participants, which supports the utility of combining these paradigms in examining this consumption community.

Study Two revisits the satisfaction-loyalty relationship in an SVG context. Specifically, this study incorporated consumers' perceived gaming skill and brand attitude in the relationship between satisfaction and loyalty in a hedonic consumption setting that involves a learning component, such as becoming proficient with an SVG. This study used survey data pertaining to actual users of a popular SVG (e.g., FIFA soccer game). Although a considerable amount of studies have examined the relation between customer satisfaction and loyalty (c.f., Oliver, 1990; Suh & Yi, 2006), this is the first known attempt to examine the satisfaction-loyalty link in a hedonic consumption context that involves a learning element, which extends the work of Murray and Bellman (2007) on the study of video game participants. Contrary to expectations, this investigation found no significant direct effect of customer satisfaction on loyalty. However, satisfaction indirectly affected loyalty through positive brand attitude and perceived gaming skill. The SEM model employed herein explained a moderate level of the variance in respondents' self-reported loyalty to a specific SVG.

The findings of the Study Two contribute to the consumer behavior literature, by highlighting the importance of mediating variables such as customer expertise and hedonic brand attitudes on customer loyalty. The results suggest that customer satisfaction with the product/service quality did not directly influence loyalty, for the respondents in this study, as has been the case in other work in this

area (Bagozzi et al., 1992; Oliver, 1997); conversely, in this technology context, satisfaction effects were mediated through hedonic brand attitudes (i.e., associated fun, interest, excitement) and customer expertise. Further, the results of this study might be applicable to a particular type of hedonic consumption experience that has a learning component (e.g., participant sports), where lack of expertise could act as a barrier to consumption. Thus, replicating the current findings in other domains of activity beyond video gaming would be an interesting avenue for future research.

Study Three replicates and extends existing literature in PMSV and message processing (Donohew et al., 1991; Everett & Palmgreen, 1995; Niederdeppe, 2005; Niederdeppe et al., 2007; Palmgreen et al., 2002) by utilizing a specific message feature in the ad stimuli. It answers calls by PMSV researchers (Niederdeppe et al., 2007), to isolate the effects of certain content elements, such as image intensity, on ad response. This study is the first known attempt to investigate the arousal-enhancing effect of mediated violence, as a form of image intensity, in the PMSV context. After successfully validating PMSV ad manipulations, this study explored the effect of PMSV on arousal and ad evaluations. The results generally supported the PMSV main effect hypotheses on ad responses, suggesting that a high-PMSV ad (one with more intense images) elicited higher arousal and more favorable A_{Ad} , and A_B than a low-PMSV ad (Donohew et al., 1991; Donohew et al., 1995; Everett & Palmgreen, 1995; Niederdeppe, 2005; Palmgreen et al., 2001; Stephenson, 2002, 2003). However, the moderating effect of SS received limited support, which warrants methodological considerations such as using different approaches to categorizing SS levels, and using a between-subjects design in subsequent studies.

While the design of the third study attempted to control for ordering effects, it is important to note that the sequence of exposure to ads containing either violent or nonviolent sport images significantly impacted subjects' responses to them, which is counter to the findings of Kang and Cappella (2008). As previously mentioned, the intensity levels of the (violent) ad imagery could have played a role in the significant PMSV x ad presentation order interaction effects on ad responses, which could be a function of innate human BIS and BAS functions that influence response to intense stimuli. Consequently, further exploration of ordering effects from (intense) imagery is warranted (c.f., Kang & Cappella, 2008). Overall, Study Three provides initial evidence that mediated violence, as a specific PMSV-enhancing feature, elicits arousal and favorable ad evaluations among college students. Based on these results, the PMSV paradigm has implications to the study of sport and violent media, as we continue to better understand the uses and gratifications of their audiences (cf., Krcmar & Greene, 1999, McDaniel, 2004; McDaniel et al., 2007).

Each study also contributes to sport media research by extending well-established marketing and communication theories in the study of such audiences. Specifically, given that the major motivation for sport media consumption is entertainment (McDaniel, 2004), each study advances scholarship in this area by emphasizing the hedonic nature of such phenomena. For instance, Study One examined how context-specific constructs play a role in hedonic attitudes and intention toward fantasy sport system adoption. While previous TAM research has been focused on utilitarian-oriented system adoption, Study One modified and extended the original TAM to better explain the consumer acceptance of a fantasy

sport league. Likewise, Study Two investigated how hedonic brand perceptions and gaming skill could mediate the relationship between customer satisfaction and brand loyalty for an SVG. This study highlights the importance of hedonic and experiential elements of consumer behavior in developing media brand loyalty. Lastly, Study Three investigated the role of intense imagery (i.e., sport violence) as an ad feature, to investigate its potential effect on affective response to media promotions. The results showed that highly intense images provoke more arousal and subsequently more favorable ad evaluations. Overall, these findings suggest that the hedonic and experiential perspective of audience behavior (Holbrook & Hirschman, 1982) is a valid approach in the study of sports fans. Further research in this area should continue to investigate the determinants and consequences of these hedonic-oriented motivations, to better understand sport media consumption.

In addition to theoretical implications, these investigations also have applied implications that help inform sport and media marketers. Understanding why people consume specific sport media is a key concern for practitioners. Specifically, sport marketers can benefit from Study One and Study Two to understand what determines consumer adoption and brand loyalty in interactive sport media consumption settings. Further, the findings of Study Three provide practical implications for sport marketers as well as public policy makers, with regards to the use of intense imagery in promoting (violent) sport.

Overall, the collective findings help explain why people choose and continue to consume specific sport media, which is consistent with the U & G paradigm in audience research. The U & G approach forgoes the notion of a passive audience to

view them as active media users seeking information and gratification. One of the central tenets of this paradigm is that media use is purposive and consumers select and use media to satisfy certain social and psychological needs or desires (Rubin, 1994). These assumptions emphasize the role of motivation as a factor that accounts for their choices and preferences for certain media messages or products, which the studies herein support. Based on the investigations in this dissertation, researchers should continue to find the U & G framework useful in continued exploration of various psychological and behavioral motivations that underlie the consumption of sports entertainment, by combining it with other theories of consumer behavior.

Appendix A

Positive And Negative Affect Scale (PANAS) (Watson, Clark, & Tellegen, 1988)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Use the following scale to record your answers.

1	2	3	4	5
Very slightly or not at all	A little	moderately	Quite a bit	Extremely
Interested	_____	Determined	_____	
Distressed	_____	Attentive	_____	
Excited	_____	Jittery	_____	
Upset	_____	Active	_____	
Strong	_____	Afraid	_____	
Guilty	_____	Nervous	_____	
Scared	_____			
Hostile	_____			
Enthusiastic	_____			
Proud	_____			
Irritable	_____			
Alert	_____			
Ashamed	_____			
Inspired	_____			

Appendix B

Perceived Message Sensation Value (PMSV) Scale (Palmgreen et al., 2002)

I thought the ad was:

Unique	1	2	3	4	5	6	7	Common
Powerful impact	1	2	3	4	5	6	7	Weak impact
Didn't give me goose bumps	1	2	3	4	5	6	7	Gave me goose bumps
Novel	1	2	3	4	5	6	7	Ordinary
Emotional	1	2	3	4	5	6	7	Unemotional
Boring	1	2	3	4	5	6	7	Exciting
Strong visuals	1	2	3	4	5	6	7	Weak visuals
Not creative	1	2	3	4	5	6	7	Creative
Not graphic	1	2	3	4	5	6	7	Graphic
Arousing	1	2	3	4	5	6	7	Not arousing
Unusual	1	2	3	4	5	6	7	Usual
Involving	1	2	3	4	5	6	7	Uninvolving
Not intense	1	2	3	4	5	6	7	Intense
Undramatic	1	2	3	4	5	6	7	Dramatic
Stimulating	1	2	3	4	5	6	7	Not stimulating

Appendix C

Treatment Ads:

Low-PMSV Ad
High-PMSV Ad

Low-PMSV Ad

Mixed Martial Arts on DVD Vol. 7



MMA ON DVD VII



www.extrememma.com

This DVD release contains 14 intense matches and over 2 hours of content featuring some of the best fighters in MMA.

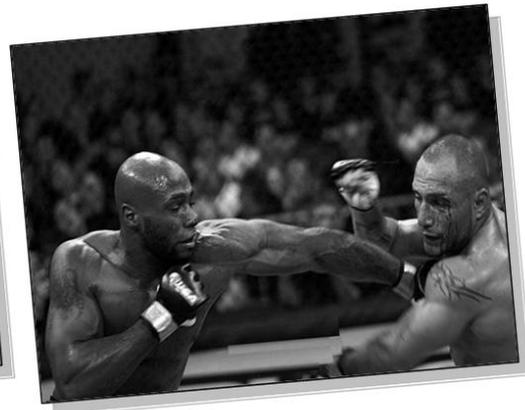
UPC: 7871210288

Available 5.4.09

\$14.⁹⁸ MSRP

High-PMSV Ad

Mixed Martial Arts on DVD Vol. 7



MMA ON DVD VII



www.extrememma.com

This DVD release contains 14 intense matches and over 2 hours of content featuring some of the best fighters in MMA.

UPC: 7871210288

Available 5.4.09

\$14.⁹⁸ MSRP

Appendix D

Please solve these math problems.

$3 \times 4 =$	$7 \times 2 =$
$2 \times 1 =$	$4 \times 5 =$
$7 \times 0 =$	$5 \times 1 =$
$8 \times 3 =$	$7 - 3 =$
$3 + 2 =$	$4 + 9 =$
$5 + 6 =$	$2 + 4 =$
$9 - 3 =$	$4 - 1 =$
$7 - 2 =$	$5 + 4 =$

Appendix E

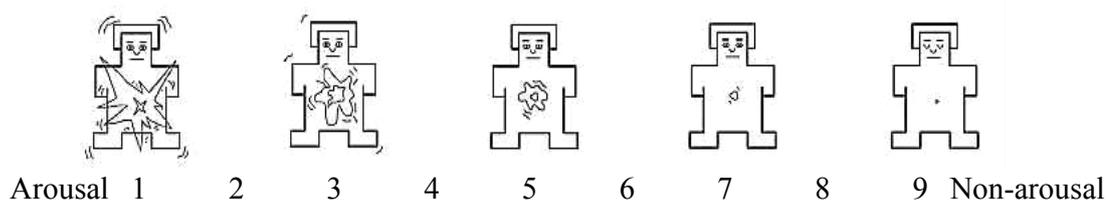
Brief Sensation Seeking Scale-8 (Hoyle, Stephenson, Palmgreen, Lorch, & Donohew, 2002)

	<i>Strongly disagree</i>			<i>Strongly agree</i>			
I would like to explore strange places.	1	2	3	4	5	6	7
I would like to take off on a trip with no pre-planned routes or timetables.	1	2	3	4	5	6	7
I get restless when I spend too much time at home.	1	2	3	4	5	6	7
I prefer friends who are exciting and unpredictable.	1	2	3	4	5	6	7
I like to do frightening things.	1	2	3	4	5	6	7
I would like to try bungee jumping.	1	2	3	4	5	6	7
I like wild parties.	1	2	3	4	5	6	7
I would love to have new and exciting experiences, even if they are illegal.	1	2	3	4	5	6	7

Appendix F

Ad Response Measures – Study 3
 (adapted from Lang, 1980; McDaniel et al., 2007; Petrova & Cialdini, 2005)

Arousal (Self-Assessment Manikin; Lang, 1980)



Attitude-toward-the-Ad (A_{Ad})

My attitude toward the ad I just viewed is:

Good	1 2 3 4 5 6 7	Bad
Uninteresting	1 2 3 4 5 6 7	Interesting
Dislike	1 2 3 4 5 6 7	Like
Pleasant	1 2 3 4 5 6 7	Unpleasant

Attitude-toward-the-brand (A_B)

My attitude toward the brand (“MMA on DVD”) I just viewed is:

Unfavorable	1 2 3 4 5 6 7	Favorable
Good	1 2 3 4 5 6 7	Bad
Negative	1 2 3 4 5 6 7	Positive

Purchase Intention (PI)

I would consider purchasing the product depicted in this ad:

Improbable	1	2	3	4	5	6	7	Probable
Likely	1	2	3	4	5	6	7	Unlikely
Impossible	1	2	3	4	5	6	7	Possible

Appendix G

Table G1. *Effects of PMSV, Order, and BSSS on Arousal.*

	<i>df</i>	<i>F</i>	η^2
Within-subjects			
PMSV	1	46.20**	.15
PMSV \times Order	1	19.80**	.07
PMSV \times BSSS	1	.28	.00
PMSV \times BSSS \times Order	1	.65	.00
Error	264		
Between-subjects			
BSSS	1	.00	.00
Order	1	3.53	.01
BSSS \times Order	1	.50	.00
PII ^a	1	315.83**	.55
Error	264		

N = 269.

^aCovariate.

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

Appendix H

Table H1. *Effects of PMSV, Order, and BSSS on A_{Ad}.*

	<i>df</i>	<i>F</i>	η^2
Within-subjects			
PMSV	1	5.99*	.02
PMSV × Order	1	13.59**	.04
PMSV × BSSS	1	4.16*	.02
PMSV × BSSS x Order	1	1.46	.01
Error	264		
Between-subjects			
BSSS	1	.21	.00
Order	1	.77	.00
BSSS × Order	1	.20	.00
PII ^a	1	44.69**	.15
Error	264		

N = 269.

^aCovariate.

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

Appendix I

Table 11. *Effects of PMSV, Order, and BSSS on A_B.*

	<i>df</i>	<i>F</i>	η^2
Within-subjects			
PMSV	1	19.41**	.07
PMSV × Order	1	20.38**	.07
PMSV × BSSS	1	1.52	.01
PMSV × BSSS x Order	1	.04	.00
Error	265		
Between-subjects			
BSSS	1	.74	.00
Order	1	.09	.00
BSSS × Order	1	1.30	.01
PII ^a	1	56.63**	.18
Error	265		

N = 269.

^aCovariate.

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

Appendix J

Table J1. *Effects of PMSV, Order, and BSSS on PI.*

	<i>df</i>	<i>F</i>	η^2
Within-subjects			
PMSV	1	.09	.00
PMSV × Order	1	38.37**	.13
PMSV × BSSS	1	1.80	.01
PMSV × BSSS x Order	1	1.89	.01
Error	264		
Between-subjects			
BSSS	1	.11	.00
Order	1	10.34**	.04
BSSS × Order	1	.17	.01
PII ^a	1	62.03**	.19
Error	264		

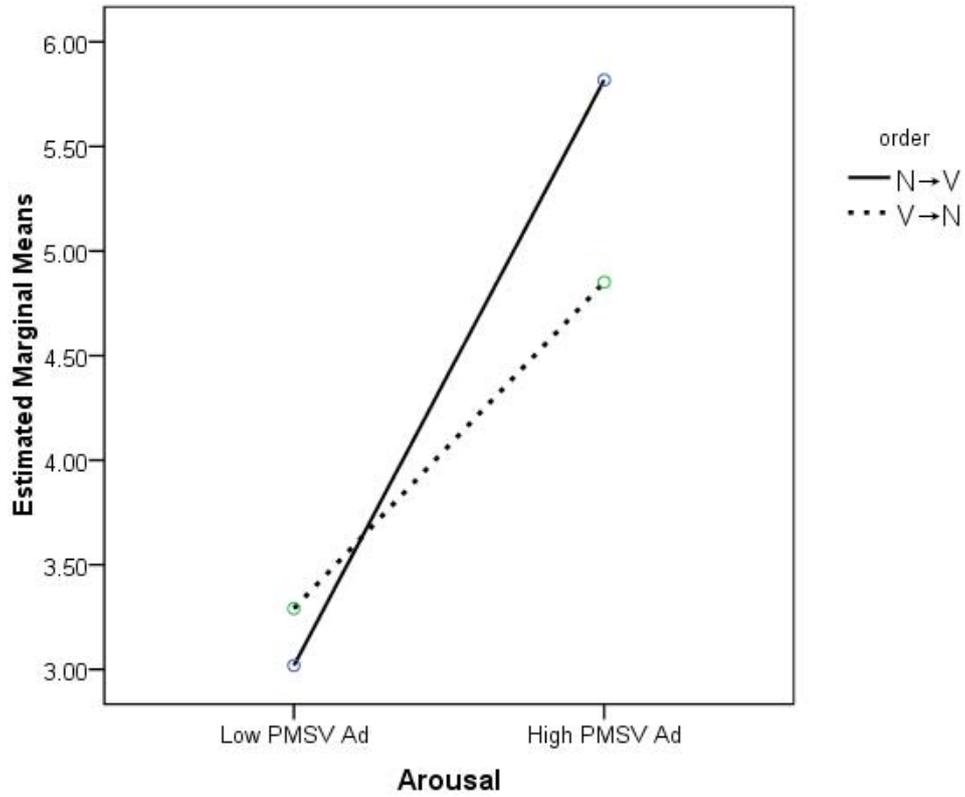
N = 269.

^aCovariate.

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

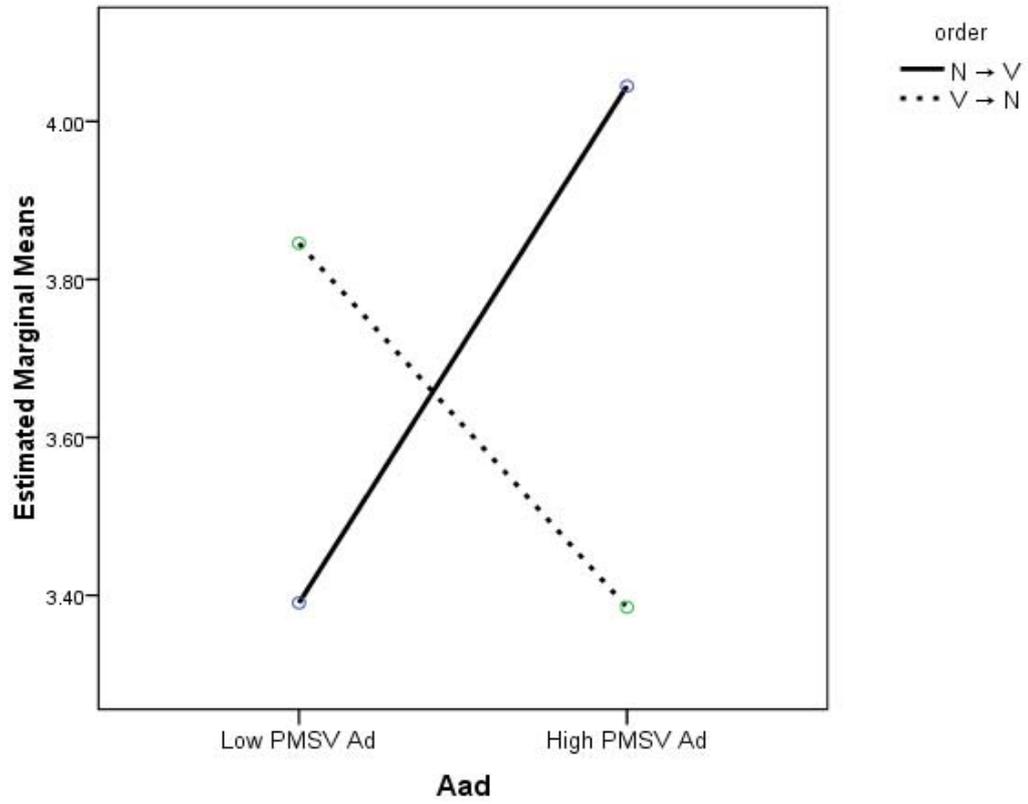
Appendix K

Figure K1. *Arousal level by PMSV \times order.*



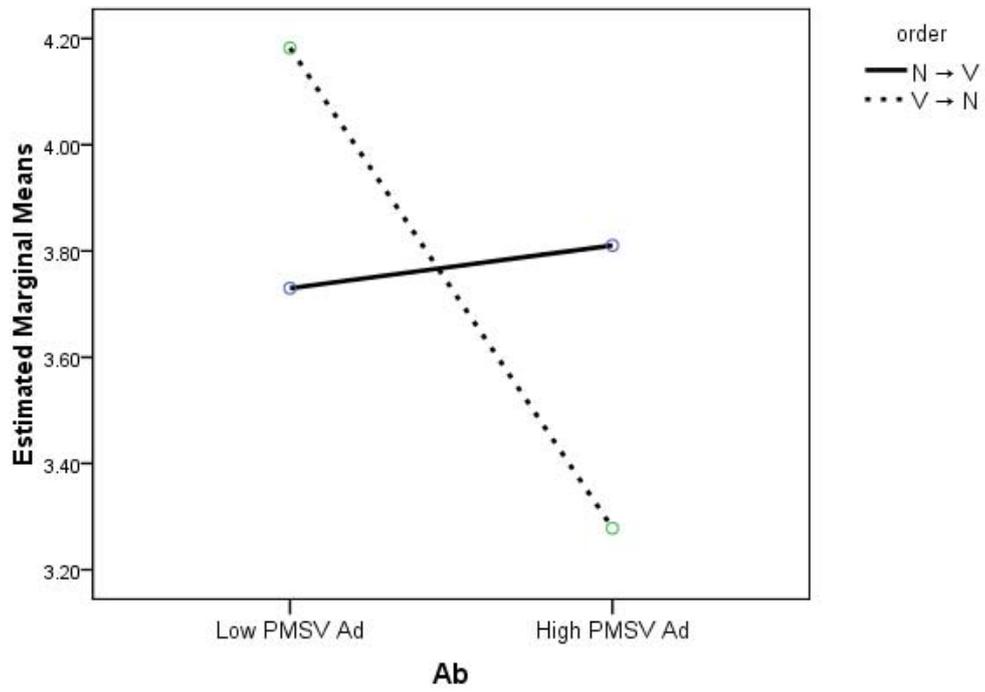
Appendix L

Figure L1. A_{Ad} by PMSV \times order.



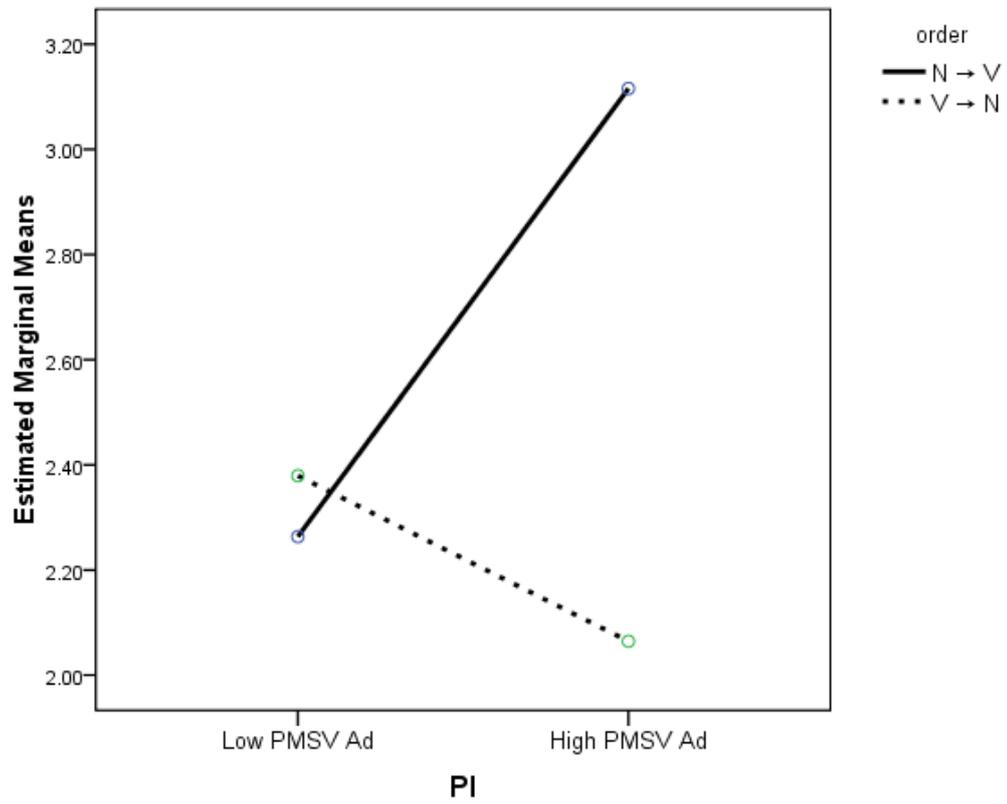
Appendix M

Figure M1. A_B by $PMSV \times order$.



Appendix N

Figure N1. *PI* by *PMSV* × *order*.



Appendix O

MMA Images in Three Groups:

Nonviolent group

Moderate violent group

Violent action group

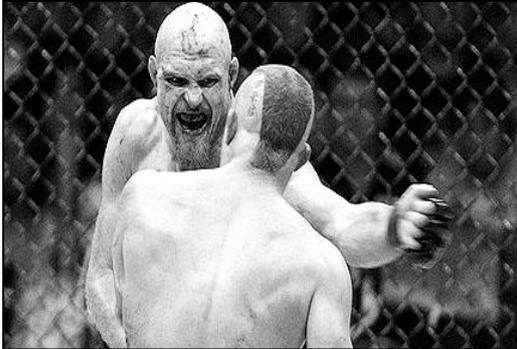
Nonviolent Group



Moderate Violent Group



Violent Action Group



Appendix P

MMA Ads in Pilot Study 2

Mixed Martial Arts on DVD Vol. 7



MMA ON DVD VII



www.extrememma.com

This DVD release contains 14 intense matches and over 2 hours of content featuring some of the best fighters in MMA.

UPC:7871210288

Available 5.4.09
\$14.⁹⁸ MSRP

Mixed Martial Arts on DVD Vol. 7



MMA ON DVD VII



www.extrememma.com

This DVD release contains 14 intense matches and over 2 hours of content featuring some of the best fighters in MMA.

UPC:7871210288

Available 5.4.09
\$14.⁹⁸ MSRP

Mixed Martial Arts on DVD Vol. 7



MMA ON DVD VII



www.extrememma.com

This DVD release contains 14 intense matches and over 2 hours of content featuring some of the best fighters in MMA.

UPC:7871210288

Available 5.4.09
\$14.⁹⁸ MSRP

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