

1 Examining the psychological factors associated with involvement in fantasy sports:

2 An analysis of participants' motivations and constraints

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Abstract

6 This study examined how fantasy sport participants' motives and constraints influence their
7 attitudes toward fantasy sports participation. Furthermore, the study attempted to develop a
8 reliable and valid model through which researchers can measure fantasy sports participation-
9 related motivations and constraints. The proposed model for motivations consisted of 21 items
10 with seven dimensions (i.e., economic, social interaction, escape, fantasy, achievement,
11 knowledge, and pass time) and the model for constraints consisted of 15 items with five
12 dimensions (i.e., time, accessibility, lack of interest, lack of partners, and lack of knowledge) for
13 fantasy sports participants. The Structural Equation Modeling (SEM) method with a convenience
14 sample of 161 participants was employed to analyze the conceptual framework and
15 psychometric property of the scale. Motivations for fantasy sports participants were positively
16 and significantly related to and constraints for fantasy sports participants were negatively and
17 significantly related to their attitude toward fantasy sports participation. These results and future
18 implications for practical and theoretical research are also discussed.

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21 Keywords: Fantasy sports, motivation, constraints, attitude

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Introduction

Participation in fantasy sports has skyrocketed over the past decade, corresponding with the phenomenal rise in Internet usage. The sport industry segment of fantasy sports, according to the Fantasy Sports Trade Association (2008), includes 29.9 million participants in the United States and Canada alone. Furthermore, Prescott (2006) stated that this segment of the industry involves an estimated \$1.5 billion in economic activity and has witnessed annual growth of 7-to-10% in North America. Fantasy sports participants have, for the most part, unique demographic characteristics. For instance, the majority of the participants are men between the ages of 18 and 34 who spend on average 6-to-15 hours per week in the monitoring of their teams and leagues (Flood, 2004). Furthermore, fantasy sports participants are usually younger than other Internet users and they are typically more educated and in higher income levels (Tedeschi, 2003). Because of the demographics, activities, and overall massive number of the fantasy sports participants, savvy marketers have recognized the importance of this segment of the sport industry. For example, Murphy and Church (2000) noted that fantasy sports are one way of creating loyal users and generating frequent and longer visits to their website, thus enabling marketing, advertising, and sponsorship endeavors. In addition, fantasy sports keep growing as a direct marketing tool, providing abundant demographic data for targeted marketing efforts to avid sport fans that have traditionally not been easy to reach (Mariano, 2000).

Despite the outstanding marketing opportunities associated with fantasy sports and the overall growth of an interest in this segment of the sport industry, few studies have been conducted relative to psychological factors (e.g., the participants' motivations to engage in the activity, the constraints encountered by participants) which can have an impact on sport marketers' ability to attract and maintain fantasy sports participants. Therefore, there is a need for sport marketers to appreciate the uniqueness and impact of the fantasy sports segment of the sport industry, as well as to understand the psychology associated with fantasy sports participation. In addition to understanding the motivations that drive people to participate in fantasy sports on the Internet, it is also important to recognize that there are some negative dimensions which curtail some individuals' participation in fantasy sports. Thus, if sport marketers use the Internet and their web site as a marketing tool (Brown, 2003), they should endeavor to target the motivations behind fantasy sports participation while at the same time work to diminish the constraints that limit participation in fantasy sports.

Literature Review

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Fantasy sports are different from other parts of sports consumption because they are based both on the real world (e.g., using statistics from actual games and players) and on the virtual world (e.g., engaging in a simulated league on the Internet). With regard to this reason, the fantasy sports genre is differentiated from other online, fictional game genres such as Massive Multiplayer Online Role Playing Games (MMORPG) where many players interact with other players using their own characters or avatars in the virtual world. Along with the increased interests on fantasy sports, recently there have been some efforts to investigate a variety of research topics related to fantasy sports such as messages on bulletin board of fantasy sports websites (Hiltner & Walker, 1996), economic success on fantasy sports websites (Wirakartakusmah, 2003), motivation of fantasy sports participants (Cooper, 2004; Farquhar & Meeds, 2007), team identification for fantasy football participants (Corrigan, 2007), legal issues associated with fantasy sports (Grady, 2007; Moorman, 2008), and winning expectancy for fantasy sports participants (Kwak, Lim, Lee, & Mahan, 2010).

The current study attempts to contribute to the fantasy sports research by exploring both the motivations and constraints associated with fantasy sports participation. From the consumer behavior perspective, through fantasy sports individuals can be both a sport spectator and a sport participant. In this regard, fantasy sports participants are unique from traditional sports fans or media users in that they are active sport media users whose various consumptive decisions (e.g., selecting service website, drafting players, paying for entry fees) are involved when playing fantasy sports. That is, fantasy sports participants are no longer passive recipients of the mediated product, but they are both active spectators craving for sports information as well as producers managing their own customized teams. Because fantasy sport participants are active media users, this study employed the uses and gratifications paradigm (Katz, Blumler, & Gurenvitch, 1974) as a theoretical framework. The theory shifts focus from “what media do to people” to “what people do with the media,” emphasizing the active role of consumers, or the audience in consuming media. The uses and gratification theory assumes that members of the audience are not passive but take an active role in selecting and interpreting media in their own lives (Katz et al., 1974). Therefore, the theory posits that people are active agents seeking information and gratification through media behavior. The uses and gratification paradigm has been widely recognized and researched in mediated communication and the Internet (e.g., Ko, Cho, & Robert, 2005). In this vein, Newhagen and Rafaeli (1996) mentioned that it is reasonable that researchers apply the uses and gratifications theory as an effective framework to

1 understand Internet user behavior. As a form of Internet content, online fantasy sports
2 opportunities also have high interactivity and demassification functions. For instance, fantasy
3 sports participants take part in forums and chat rooms in which they can discuss the play of their
4 teams and leave various comments on Internet message boards. In terms of demassification –
5 which can be defined as increased individual control over a medium (Williams, Rice, & Rogers,
6 1988) – this function helps fantasy sports users customize a variety of features (e.g., receiving
7 newsletters) provided by fantasy sports web-sites.

8 Fantasy sports participants, however, are not merely media users. Most participants can
9 be regarded as sports fans who are enthusiasts for certain sports (e.g., auto racing), teams (e.g.,
10 Philadelphia Eagles), players (e.g., Serena Williams), golfers (e.g., Tiger Woods), etc. They
11 often watch sporting events at sport venues or on television and read up on their sports by
12 perusing newspapers, magazines, and Internet web sites. Being a sports fan provides
13 opportunities for fantasy, escape, and the vicarious experience of the success or failure as well
14 as fulfilling for sports fans' emotional and connection needs (e.g., sharing, belonging) (Gantz,
15 1981). Namely, these emotional factors as a sport fan cannot be just explained by the uses and
16 gratification theory. Thus, the previous sports fan motivations (e.g., Trail & James, 2001; Wann,
17 1995) can also be applied to understanding the motives of fantasy sports participants.

18 Further, few studies have been conducted to identify the constraints that prohibit people
19 from participating in fantasy sports. Constraints are defined as any factors that limit one's desire
20 to participate in sport and leisure activities (Petrick, Backman, Bixler, & Norman, 2001). With
21 regard to fantasy sports, some participants may discontinue play because of various types of
22 barriers. On the other hand, other participants cannot play as much as they want to, because of
23 the constraints elements. For fantasy sports participants, because of certain conditions such as
24 time conflicts and accessibility, motivations alone may not be enough to get people to
25 participate. According to Jackson and Scott (1999), the perception of constraints plays a critical
26 role in the sport and leisure choices that individuals make. Therefore, there is a need to
27 understand which dimensions limit individuals' participation in fantasy sports.

28 *Motivation for Fantasy Sports Participants*

29 Many scholars have examined the features that influence sport consumer behaviors
30 (Hansen & Gauthier, 1989; Kahle, Kambara, & Rose, 1996; Sloan, 1989; Wann, 1995). For
31 example, Sloan (1989) – in providing one of the seminal works on sport spectator motivations –
32 posited that some motivations included salubrious effects, stress and stimulation seeking,

1 catharsis and aggression, entertainment, and achievement. Sloan's work included several
2 empirical approaches in different settings (e.g., the moods and feelings of fans). Following
3 Sloan's research were several scholars who also provided theoretical models of sport spectator
4 consumption behavior. Some of the models developed along this line included the Sports Fan
5 Motivation Scale (SFMS) (Wann, 1995), the Motivations of the Sport Consumer scale (MSC)
6 (Milne & McDonald, 1999), the Motivation Scale for Sport Consumption (MSSC) (Trail & James,
7 2001), and the Sport Interest Inventory (SII) (Funk, Mahony, & Ridinger, 2002). Recently, Hur,
8 Ko, and Valacich's (2007) study provided a motivational factor model of online sport
9 consumption. While the five motivations (i.e., convenience, information, diversion, socialization,
10 and economy) they established are understandable and valid and their study helps sport
11 marketers in their understanding of sports fans' needs for various online sport consumption
12 situations (e.g., e-ticketing, online product purchases), their study failed to include certain goal-
13 directed motives (e.g., competition, winning, achievement) that may be more instrumental in
14 fantasy sports participation.

15 Although the abovementioned sports fan motivation scales can serve as valid and
16 reliable instruments, they cannot fully account for various motivations associated with fantasy
17 sport participation. The uses and gratifications theory can resolve this issue as it provides a
18 useful framework to study Internet user behavior (December, 1996; Kuehn, 1994; Morris &
19 Ogan, 1996). The uses and gratifications theory was considered as a psychological
20 communication perspective that focuses on understanding how people use mediums for very
21 different purposes (Katz et al., 1974). The uses and gratifications theory assumes that the
22 media audience is an active communicator. Furthermore, the theory proposes that the
23 audience's mass media consumption is goal directed and purposive. As Katz et al. (1974)
24 explained in the development of this theory, people select and use certain types of media
25 content with very different purposes to satisfy their wants and needs. Thus, these notions and
26 basic assumptions on the uses and gratifications paradigm might explain the motivations
27 associated with fantasy sports participation.

28 Researchers have attempted to understand the relationship between media exposure
29 and attitude towards media, and motivations to use new media platforms such as the Internet
30 and video games. For example, Papacharissi and Rubin (2000) proposed an Internet usages
31 motivation scale and identified five types of motivations for using the Internet: convenience,
32 entertainment, information seeking, interpersonal utility, and pass time. Similarly, Ko et al. (2005)
33 identified four types of motivation factors for Internet users (i.e., entertainment, information,

1 convenience, and social interaction) and investigated how Internet user motivations influence
2 attitudes toward web sites, brands, and purchase intentions. Furthermore, Sherry and Lucas
3 (2003) also conducted a study to identify the reasons for which people play video games and
4 examined the relationship between motivations and the amount and patterns of video game
5 usage. They identified six types of motives, which included competition, challenge, social
6 interaction, diversion, fantasy, and arousal and found several factors are significantly related to
7 the use of video games.

8 Even though the previous studies are helpful in the understanding of motivational factors
9 related to Internet usage, they are limited when it comes to applying them to motivations for
10 fantasy sports participation because certain motivations (e.g., competition, winning,
11 achievement) have not been examined within the context of Internet usage. Therefore, the
12 current study is based on both the uses and gratifications theory from the field of mass
13 communication and sport fan motivations. Based on the previous studies in leisure and online
14 sport consumption, this study proposes several motivations of fantasy sports participants
15 (Cooper, 2004; Farquhar & Meeds, 2007; Hur, Ko, & Valacich, 2007).

16 *Constraints for Fantasy Sports Participants*

17 Understanding the reasons why people do not participate in fantasy sports is as
18 important as understanding why people do participate in this segment of the sport industry.
19 Recently, Flood (2004) categorized fantasy sports as one of the many available leisure sports.
20 Flood defined it as such because sports participation has been influenced by the Internet and
21 the Internet has affected peoples' lives, especially in relation to their engagement in leisure-
22 related activities. The concept of constraints in leisure studies refers to the barriers that exist
23 between an individual's desire for participation and an individual's real participation (Jackson,
24 2005). While research has shown that two of the most common constraints in leisure activities
25 are time and cost factors (Jackson, 2005), for over two decades scholars (e.g., Fredman &
26 Heberlein, 2005; Samdahl & Jekubovich, 1997) have examined how constraints affect sport and
27 leisure participation. For example, Crawford and Godbey (1987) introduced a model of leisure
28 constraints which consisted of three types of constraints: intrapersonal, interpersonal, and
29 structural. Intrapersonal constraints are related to individual psychological states and attributes
30 such as stress, depression, anxiety, and perceived self-skills. Interpersonal constraints result
31 from social interaction, and include constraints related to developing relationships with people.
32 Given that fantasy sports services facilitate interactions among participants through various

1 customer-to-customer communication features (e.g., chatting rooms, message boards, instant
2 messaging), lack of partner could be a constraint for some participants. In turn, structural
3 constraints refer to external factors which include financial resources, available time,
4 accessibility, and climate. A subsequent model – the hierarchical model of leisure constraints –
5 was proposed by Crawford, Jackson, and Godbey (1991). This updated model posited that the
6 three constraints in Crawford and Godbey's model occurred hierarchically. According to this
7 hierarchical decision making process, intrapersonal constraints (e.g., lack of interest) are the
8 most proximal and powerful factors while structural constraints have the least impact on
9 people's participation.

10 The earlier studies on constraints were followed up by research endeavors that
11 attempted to understand how constraints influence people's participation in leisure and sport
12 activities. For example, Alexandris and Carroll (1997) investigated constraint factors related to
13 participating in recreational sport activities and revealed that factors such as lack of interest,
14 lack of knowledge, and time are significantly and negatively related to predicting participation.
15 While Alexandris and Carroll (1997) studied constraint factors relative to recreational sport
16 participation, Kim (2002) examined leisure and sport participation constraint dimensions
17 specifically affecting adolescents. Kim identified lack of economic resources and lack of skills as
18 notable constraint factors on participation. In the field of sport management, Kim and Chalip
19 (2004) studied members of American soccer clubs in connection to their travel to the FIFA
20 World Cup. They measured three specific constraints (i.e., risk, financial, interpersonal) and
21 found that financial constraints were not significantly related to participation. Therefore, these
22 empirical findings in leisure and sport studies can be helpful to understand constraints of fantasy
23 sports participants. As detailed above, numerous scholars have examined constraint factors
24 relative to sport and leisure participation. Taken together, this study identified five dimensions –
25 time, accessibility, lack of interest, lack of partner, and lack of knowledge – as barriers that
26 potentially inhibit participants from engaging in fantasy sports. Identifying the constraints that
27 limit participation in fantasy sports can be valuable for sports researchers and marketers who
28 use fantasy sports as a marketing tool.

29 Purpose of Study

30 Because of the lack of studies focused on the motivations and constraints associated
31 with fantasy sports participation, the primary purpose of this study was to examine how fantasy
32 sports participants' motives and constraints influence their attitudes toward fantasy sports

1 participation. Furthermore, a secondary purpose of the study was to develop a reliable and valid
2 measure of fantasy sports motivations and constraints. Through the extensive review of
3 previous sport and media literature and the use of an expert panel methodological approach,
4 this study developed and tested seven motivational factors (i.e., economic, social interaction,
5 escape, fantasy, achievement, knowledge, and pass time) and five constraint factors (i.e., time,
6 accessibility, lack of interest, lack of partners, and lack of knowledge) for fantasy sports
7 participants.

8 Research Hypotheses

9 In an attempt to examine the motivations and constraints of fantasy sports participants,
10 the following three hypotheses were developed:

11 H1: Motivations of fantasy sports participants will be positively and significantly related
12 to their attitudes toward fantasy sports participation.

13 H2: Constraints of fantasy sports participants will be negatively and significantly related
14 to their attitudes toward fantasy sports participation.

15 H3: There will be a negative relationship between motivations and constraints of fantasy
16 sports participants.

17 Methodology

18 *Sample and Procedure*

19 The present research involves over-sampling, given that there was a chance that many
20 of the subjects were not fantasy sports participants and in an attempt to deal with subject
21 attrition. A convenience sample of 334 undergraduate students (18+) at a Midwestern university
22 in the United States completed the survey questionnaire. Undergraduate college student sample
23 deemed appropriate for the current study since the undergraduate college student age range
24 (i.e., between 18 and 25 years old) are important to the growth of fantasy sports, with nearly one
25 in five individuals in that age group participating in a fantasy league (FSTA, 2008). Among 334
26 respondents, 161 indicated that they play fantasy sports and were subsequently included in the
27 data analysis. Of the 161 respondents, the sample consisted of 90.1% males (n = 145) and 9.9%
28 females (n = 16). Over eight percent (8.7%) were freshmen (n = 14), 13.0 % were sophomores
29 (n = 21), 27.3% were juniors (n = 44), 45.3% were seniors (n = 73), and 5.6% were graduate
30 students (n = 9). The majority (59%) of the respondents (n = 95) stated that they spend less

1 than 30 minutes a day playing fantasy sports. Sixty (37.3%) of the respondents noted that they
2 participate in fantasy sports two or three times a week while another 23 (14.3%) respondents
3 answered that they play fantasy sports many times a day. About 71% (n = 115) indicated that
4 fantasy football is their favorite fantasy sports genre while about 12% (n = 20) answered that
5 baseball was their favorite fantasy sports hobby.

6 The current study employed an online survey method using the Internet software system
7 known as Survey Monkey. Data were collected from a variety of activity classes because such
8 educational settings facilitate the recruitment of subjects from a variety of academic
9 backgrounds and majors. The survey took approximately 10 minutes for the subjects to
10 complete. Further, a filtering question (i.e., "Do you play fantasy sports?") was included at the
11 beginning of the survey to screen out non-participants (n = 173). Only respondents who
12 answered "Yes" to the question were allowed to proceed.

13 *Measures*

14 Both a comprehensive literature review and the use of an expert panel method were
15 employed to generate a list of items for each of the motivations and constraints components in
16 the fantasy sports participation instrument. Panel members consisted of faculty members and
17 graduate students in the sport management program at a research university in the United
18 States. Based on feedback received from the expert panel and the examination of previous
19 studies related to both motivations and constraints, the instrument was developed and included
20 21 items for seven motivation factors (Table 1) and 15 items for five constraint factors (Table 2).

21 {Insert Table 1 and Table 2 about here}

22 The survey questionnaire was composed of four sections: motivations, constraints,
23 attitudes, and demographic items (e.g., gender, race). An example of a motivation item is, "I
24 participate in fantasy sports because I have a chance to win prize money." An example of a
25 constraint item is, "I do not have enough time to play fantasy sports." The instrument for the
26 motivations and constraints sections was based on 5-point Likert-type scale anchoring from
27 strongly disagree to strongly agree. In the attitudes section, respondents were asked to rate
28 their overall thoughts relative to fantasy sports participation. This section was based on three 7-
29 point bipolar scales that were anchored by "good/bad", "favorable/unfavorable", and
30 "pleasant/unpleasant" (Mackenzie & Lutz, 1989). An example of an attitude item is, "From all my
31 knowledge about fantasy sports, I think participating in fantasy sports would be." Demographic

1 items asked for the respondents' age, gender, ethnicity, and year in college. In addition, several
2 questions asked respondents about their past fantasy sports behavior. An example of this type
3 of question is, "How many years have you participated in fantasy sports leagues?" For all multi-
4 item scales in the instrument, the internal consistency of reliability estimates was examined
5 using Cronbach's alpha. Cronbach's alpha values are reported in Table 3.

6 {Insert Table 3 about here}

7 *Data Analysis*

8 The psychometric of the scale was analyzed with SPSS 17.0 and AMOS 6.0. Prior to
9 testing the proposed model, a Confirmatory Factor Analysis (CFA) of the measurement model
10 was analyzed to examine the appropriateness of the 12 (seven motivation factors and five
11 constraint factors) latent factors. Using several model fit indices, CFA examined the relationship
12 between the 36 items and 12 latent constructs, and reliability and validity of constructs (i.e.,
13 motivation factors: economic, social interaction, escape, fantasy, achievement, knowledge, and
14 pass time; constraint factors: time, accessibility, lack of interest, lack of partners, and lack of
15 knowledge). Structural Equation Modeling (SEM) was conducted to test the influence of
16 motivations and constraints on participants' attitudes toward fantasy sports participation. In
17 order to investigate the goodness of the proposed model, several fit statistics were examined,
18 including chi-square with related degree of freedom (*df*), Root Mean Square Error of
19 Approximation (RMSEA), and Comparative Fit Index (CFI). Furthermore, similar to Morgan and
20 Hunt (1994), the direct effects of the endogenous factors (i.e., motivation, constraints) on
21 attitudes toward fantasy sports were also examined.

22 Results

23 *Measurement Model*

24 Fit indices of the measurement model are listed in Figure 1. The results showed that the
25 measurement model reached the satisfactory level of the Satorra–Bentler scaled chi-square
26 ratio (S–B $\chi^2/df = 1.742$), as Kline (2005) suggested that a model with ratio lower than 3.0 is a
27 good model. The absolute fit indices also support the appropriateness of the measurement
28 model. For instance, the RMSEA value was .068, which was lower than the suggested threshold
29 of .08 (Browne & Cudeck, 1993; Hu & Bentler, 1999). The CFI value was .90, which was equal
30 to the suggested threshold of .90 (Bollen & Stine, 1993).

1 {Insert Figure 1 about here}

2 Table 3 summarizes factor loadings, construct reliabilities, Average Variance Extracted
3 (AVE) values, and mean scores of all latent factors. Most latent motivation factors reached the
4 satisfactory level of Cronbach's alpha values, which were greater than the recommended value
5 of .70 (Fornell & Larcker, 1981). Social interaction ($\alpha = .51$) was the only motivation construct
6 that scored lower than the suggested value. Motivation construct alpha scores ranged from .51
7 (social interaction) to .83 (escape). Likewise, all latent constraint variables reached the
8 satisfactory level as they ranged from .72 (time) to .91 (lack of interest) for constraints factors.

9 The construct reliability coefficients also showed satisfactory reliability levels as
10 motivation variables ranged from .53 (social interaction) to .84 (escape) for motivation factors
11 and from .65 (time) to .92 (lack of interest) for constraints factors. Except for the social
12 interaction factor, all of the reliability levels were also greater than the recommended value
13 of .60 (Bagozzi & Yi, 1988). Likewise, most constructs showed acceptable levels of AVE, which
14 measures the variance in the indicator variables explained by the latent variables (Bagozzi & Yi,
15 1988). All of the AVE measures for motivation except for social interaction factor (.28) were
16 greater than the suggested threshold (i.e., $\geq .50$, Bagozzi & Yi, 1988). All of the AVE measures
17 for constraints except for time factor (.39) were also greater than the .50 standard. However, we
18 retained all original items in the current model since they were derived from existing research.
19 Furthermore, given the nature of this research, retaining the original item was also necessary to
20 provide the factor structure of the initial measurement model.

21 All factor loadings for the motivation and constraint sub-factors were statistically
22 significant at .05 level with critical ratios ranging from 4.15 to 21.80. As shown in Table 3, all
23 items were loaded on a single factor and the loadings ranged from .46 to .96. For the higher-
24 order factor model, all motivation sub-factors loaded on the second-order motivation factor.
25 Similarly, all constraint sub-factors emerged on the higher-order constraint factor (see Figure 2).
26 All loadings were significant at .05 level and the results further supported the convergent validity
27 of the scale (Anderson & Gerbing, 1998; Rahim & Magner, 1986). As shown in Figure 2, the
28 loadings ranged from .60 (motivation to knowledge) to .99 (constraint to lack of knowledge).

29 {Insert Figure 2 about here}

30 The study also examined discriminant validity by measuring the relationship between
31 latent variables (Kline, 2005). The data analysis revealed that the discriminant validity was

1 evident for motivation factors, as no high factor correlation was detected. However, the
2 measurement model test did not show high levels of discriminant validity for the constraint
3 factors as there were six high factor correlations (i.e., .92 between accessibility and lack of
4 interest, .96 between accessibility and lack of partner, .98 between accessibility and lack of
5 knowledge, .94 between lack of interest and lack of partner, .92 between lack of interest and
6 lack of knowledge, and .99 between lack of partner and lack of knowledge in constraints factors).
7 For more detailed information please refer to Table 4.

8 {Insert Table 4 about here}

9 *Test of the Model*

10 An SEM was conducted to test the influences of motivations and constraints on attitude
11 toward fantasy sports participation. As detailed in Figure 2, the overall model fit of the SEM
12 analysis was found to be acceptable (i.e., S-B $\chi^2/df = 1.797$, RMSEA = .071, CFI = .88, $p < .05$).
13 The path coefficient of motivation to attitude was .37 ($p < .05$), which means that the motivations
14 construct was found to be a significant predictor of attitudes toward fantasy sports participation.
15 Also, a significant path coefficient (-.34, $p < .05$) was found from constraints to attitudes toward
16 fantasy sports participation. As expected, the influence of motivation was positive, while the
17 influence of constraint was negative.

18 Thus, consistent with our expectations, there was a negative relationship between
19 motivation (i.e., as a common factor) and constraint (i.e., as a common factor). In addition,
20 positive correlations were detected between second-order latent factors within a common factor.
21 In other words, those who have higher levels of a certain type of motivation are more likely to
22 have higher levels of other motivations as well. Likewise, the correlations between the
23 constraints sub-factors indicated that those who have higher levels of a certain constraint are
24 more likely to have higher levels of other types of constraints as well.

25 Discussion

26 *Theoretical Implications*

27 The purpose of the current study was to examine how fantasy sport participants' motives
28 and constraints influence their attitudes toward fantasy sports participation. Using the uses and
29 gratifications paradigm as a theoretical framework, this study identified seven motivation factors
30 (i.e., economic, social interaction, escape, fantasy, achievement, knowledge, and pass time)

1 that are in line with the previous studies on motivations of online consumption (e.g., Hur et al.,
2 2007; Seo & Green, 2008). Likewise, the model's five constraint factors (time, accessibility, lack
3 of interest, lack of partners, and lack of knowledge) are consistent with previous studies (e.g.,
4 Alexandris, Tsorbatzoudis, & Grouios, 2002; Fredman & Heberlein, 2005). The uses and
5 gratifications approach posits that people's selection and use of media is goal-directed,
6 purposive, and motivated. Therefore, the seeking of gratification is viewed as a significant
7 determinant of one's decision to participate in fantasy sport. In turn, situational (i.e., time and
8 accessibility), interpersonal (i.e., lack of partners), and intrapersonal (i.e., lack of knowledge and
9 interest) constraints served as determinants negatively associated with fantasy sport
10 participation.

11 The SEM results showed both a significantly positive relationship between motivations
12 and attitudes toward fantasy sports participation and a significantly negative relationship
13 between constraints and attitudes toward fantasy sports participation. Such results indicate that
14 both motivations and constraints have critical effects on consumers' attitudes toward fantasy
15 sports. Patch, Tapsell, and Williams (2005) stated that attitudes have enormous influence on
16 people's intention and have immediate prospects for modifying consumer behavior. That is,
17 people's attitudes toward fantasy sports directly connect to and predict their actual usage of
18 fantasy sports. Therefore, future studies need to incorporate behavioral measures to examine
19 the predictive role of attitude on actual consumption behavior. Such investigation can further our
20 knowledge how certain motivations and constraints are associated with actual behavior.

21 The findings of this study also add to the body of sport management literature because
22 this is the first known attempt to retrospectively account for fantasy sports consumption with
23 constraints factors. Further, this study adds to the body of uses and gratification research by
24 identifying and integrating various motivation factors from relevant literature (e.g., leisure,
25 communication). In particular, this study identified additional dimensions (e.g., achievement,
26 fantasy, economy) that appear to be uniquely relevant to fantasy sports participation. The
27 results suggested that people are drawn to fantasy sports for various reasons beyond
28 information seeking to gratify their own needs. Therefore, the current study found the uses and
29 gratification theory to be a valid conceptual framework in exploring motivation and constraints
30 associated with fantasy sports participation.

31 *Practical Implications*

1 In addition to the development of a conceptual model for fantasy sports participation
2 motivations and constraints, the findings provide several important practical implications. Sport
3 marketers and managers can use this conceptual framework to understand people's needs and
4 to target markets within the fantasy sports segment of the sport industry. Moreover, practitioners
5 in the field can use the motivations and constraints scale to enhance their fantasy sports
6 offerings (e.g., mobile service, high prizes) and to provide better content (e.g., insider
7 information, injury report) in order to satisfy the needs of the fantasy sports participants.

8 The results showed that certain motivation dimensions (e.g., achievement, fantasy, and
9 economy) that have not been identified in the previous research related to the Internet usage
10 were identified as significant factors. For instance, achievement factor suggests that the feeling
11 of winning and competition play important roles in fantasy sports participation. Thus, service
12 providers should develop various features that promote competition and acknowledge
13 outstanding participants. For instance, providing league standings and posting the highest
14 scorers of the week on the service website can create a more competitive environment and
15 foster participants' needs to win. Further, it may also be fruitful for future studies to include the
16 achievement variable as a part of the study on other types of online sport consumption
17 behaviors such as online auctions (e.g., eBay), online sports betting, and online video games.

18 In addition, fantasy variable (i.e., chance for running one's dream team, chance for being
19 a general manager or owner of the team) was found to be an important motivation factor. A
20 variety of Internet usages involve interactivities in simulated cyberspace (Mahan & McDaniel,
21 2006). The audiences involved in online media are different from the traditional media (e.g.,
22 print, broadcast) audiences in that they are capable of creating their own personalized spaces
23 (i.e., a virtual world) on the web. Whether it is to create one's own social media page (e.g.,
24 MySpace, blogging, personal home page, creating fantasy sports team on the Internet), the
25 fantasy factor might be an important part for understanding people's desire to create their own
26 space in the Internet. With emerging media platforms, service providers might find it useful to
27 expand participants' virtual space by connecting fantasy sports service websites to another
28 social media outlet. For instance, a participant can update or modify his or her fantasy team
29 through social networking sites (e.g., Facebook) and this could create a greater sense of control
30 in managing one's fantasy team.

31 Another interesting finding of this study is that economy (e.g., need for winning monetary
32 incentives) was a significant motive for participating in fantasy sports. Based on this finding,

1 monetary incentive seems to motivate fantasy sports participation. Likewise, it has become
2 common for a fantasy sports service provider to offer a variety of tools to reward their
3 consumers. For instance, participants can select a free-to-play or a pay-to-play option in order
4 to secure potential monetary rewards. The proper use of rewarding systems will also enhance
5 the experiences of fantasy sports participants.

6 In addition to promoting motivation-related factors, the findings of the current study also
7 enlighten practitioners on how to overcome constraints. One of the interesting findings in
8 relation to the constraint variables is that two structural constraints (i.e., time, accessibility) are
9 important constraints of fantasy sports participation (Crawford & Godbey, 1987). Recently, with
10 the development of mobile technology, fantasy sports content providers (e.g., ESPN) and
11 wireless companies (e.g., Verizon) have merged to provide mobile fantasy sports offerings.
12 Such mergers may reduce the barriers (i.e., constraints) for fantasy sports participation (e.g.,
13 time, accessibility). For example, through ESPN's mobile products a fantasy game participant
14 can receive text message updates through ESPN Alerts, manage a fantasy team through ESPN
15 MVP, get instant fantasy statistics and scores through ESPN Mobile Web, watch fantasy-related
16 shows and sporting contests on ESPN Mobile TV, and get video clips through ESPN Video On
17 Demand. Furthermore, with the development of the Internet technology, the online and offline
18 media institutions as well as sport fans create fantasy sports-related information (e.g., game
19 predictions, injury lists) which provides fantasy sports participants with a chance to be sport
20 experts and thus reduce the barrier associated with lack of knowledge. For example, top sport
21 content providers such as ESPN (ESPN.com Fantasy Games), Yahoo! Sports (Yahoo! Fantasy
22 Sports), and CBS Sports (CBS Sports Fantasy Sports), have launched their own news sites in
23 recent years. Moreover, likewise the factor labeled as lack of interest was found to be the most
24 important constraint with the highest loading. Based on that finding, sport marketers may need
25 to develop better marketing strategies (e.g., advertisements, promotions) to illustrate the
26 attractiveness of fantasy sports to non-fantasy sports participants and to encourage and
27 develop their interest in the activity.

28 *Limitations and Future Directions*

29 There are some limitations related to this study. First, the current study used a
30 convenience sample from college students who reported that they participate in fantasy sports.
31 Thus, the findings of this study cannot be applied to non-participants or non-student populations.
32 For example, the current study did not show high levels of discriminant validity for constraint,

1 because the study's subjects (e.g., fantasy sports participants) reported low levels in all sub-
2 constraints. However, when the data were anglicized for non-participants there were only two
3 high correlations (between lack of knowledge and accessibility and between lack of knowledge
4 and lack of partner). Given that this study was limited to participants who currently play fantasy
5 sports, future research should involve non-participants to better explore the major barriers that
6 impede their participation. Furthermore, there is a need to examine the proposed model with
7 more diverse samples (i.e., a non-student sample, a group with more females) to compare how
8 these segments differ from a young male college student sample. Second, because this study
9 was the first known attempt to identify motivations and constraints in the fantasy sports context,
10 more research in this area needs to be conducted to develop measures with sound
11 psychometric properties. For instance, some scales (e.g., social interaction, time) showed
12 relatively low internal consistencies and future studies need to employ alternative measures to
13 enhance reliability and validity. Finally, based on the conceptual model produced by this study,
14 future studies might investigate the effects of participants' motivations and constraints on actual
15 behavioral measures. For instance, it would be especially interesting for practitioners to
16 examine how these motivations and constraints predict different types of fantasy sport
17 behaviors (e.g., time commitment, monetary involvement). Furthermore, future studies can
18 apply this conceptual model to sport video games or web-based online games to increase the
19 field's understanding of online sport consumption behaviors.

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1 Table 1
 2
 3 *Generated Instrument Items for Measuring Motivation*
 4

Dimensions and Definition	Items	Sources
<i>Economic:</i> Some sports fans are motivated to have a chance to earn the economic gains afforded by sport wagering	I have a chance to win prize money. It is an opportunity to engage in sports gambling. I believe that having an economic investment in sport is an enjoyable part of fantasy sports participation.	Wann, 1995
<i>Social interaction:</i> People desire to keep in contact with a group, and social interaction is a primary reason for being a fan	It is a great opportunity to get together with friends. It provides me a chance to interact with other people. I like to talk to other fantasy sports participants on message boards.	Branscombe & Wann, 1994; Sloan, 1989; Trail & James, 2001
<i>Escape:</i> An escape from everyday routine life might be a motivation for sports fans	It gives me an opportunity to escape from my day-to-day routine. It gives me an opportunity to avoid the hustle and bustle of daily activities. It provides me a chance to forget about my problems.	Sloan, 1989; Trail & James, 2001
<i>Fantasy:</i> People have intrinsic needs to change their perception to experience reality from a different viewpoint	It gives me a chance to feel as if I'm running my dream team. It gives me an opportunity to act like a general manager, owner, or coach of my own team. I enjoy the opportunity to draft players for my fantasy team.	Sherry & Lucas, 2003
<i>Achievement:</i> Sports fans feel achievement when their favorite team or player is successful	When my fantasy players have good games, I feel a personal sense of achievement. When my team/players are successful, I feel good. When my team/players do well, I feel proud.	Trail & James, 2001; Wann, 1995
<i>Knowledge:</i> Sports fans might have a motive to acquire more specific knowledge of rules and skills	When participating in fantasy sports I regularly track the statistics of specific players. When participating in fantasy sports I usually know the team's win/loss record. When participating in fantasy sports I read the box scores and team statistics regularly.	Seo & Green, 2008; Trail & James, 2001
<i>Pass time:</i> People tend to consider the Internet as a fun way to pass time, especially when they are bored	It helps my pass the time away, when I am bored. It gives me something to do to occupy my time. I have nothing better to do.	Papacharissi & Rubin, 2000

1 Table 2
 2
 3 *Generated Instrument Items for Measuring Constraints*
 4

Dimensions and Definition	Items	Sources
<i>Time:</i> Perceived amount of time to play fantasy sports	I do not have enough time. I would rather spend time with friends or family. I am too busy to access the Internet for playing fantasy sports because of my study or work obligations.	Carroll, B., & Alexandris, K. (1997); Jackson (1993)
<i>Accessibility:</i> Degree to which a product or service is accessible by individuals	There are no appropriate places for me to access to Internet. I do not play fantasy sports because I do not have a computer. Fantasy sports website is not easy to access.	Carroll, B., & Alexandris, K. (1997); Jackson (1993)
<i>Lack of Interest:</i> An individual's negative psychological states or personal situation that interacts with personal preferences	I am not interested in participating in fantasy sports. I do not enjoy participating in fantasy sports. Fantasy sports are not attractive to me.	Alexandris, Tsorbatzoudis, & Grouios (2002); Carroll, B., & Alexandris, K. (1997)
<i>Lack of Partner:</i> A type of interpersonal constraint, which results from a lack of interpersonal interaction, and thus is related to an inability to find partners	I cannot find any friends or colleagues that will participate in fantasy sports with me. No one I know participates in fantasy sports. I do not like to participate in fantasy sports with strangers.	Carroll, B., & Alexandris, K. (1997); Jackson (1993)
<i>Lack of Knowledge:</i> Insufficient information or knowledge (e.g. rules, skills) provoke peoples non-participation in leisure and sport activities	I do not know how and where I can participate in fantasy sports. Getting information on fantasy sports is not easy. I am not good at certain special skills for participating in fantasy sports, such as using online features of websites.	Alexandris, Tsorbatzoudis, & Grouios (2002); Jackson (1993)

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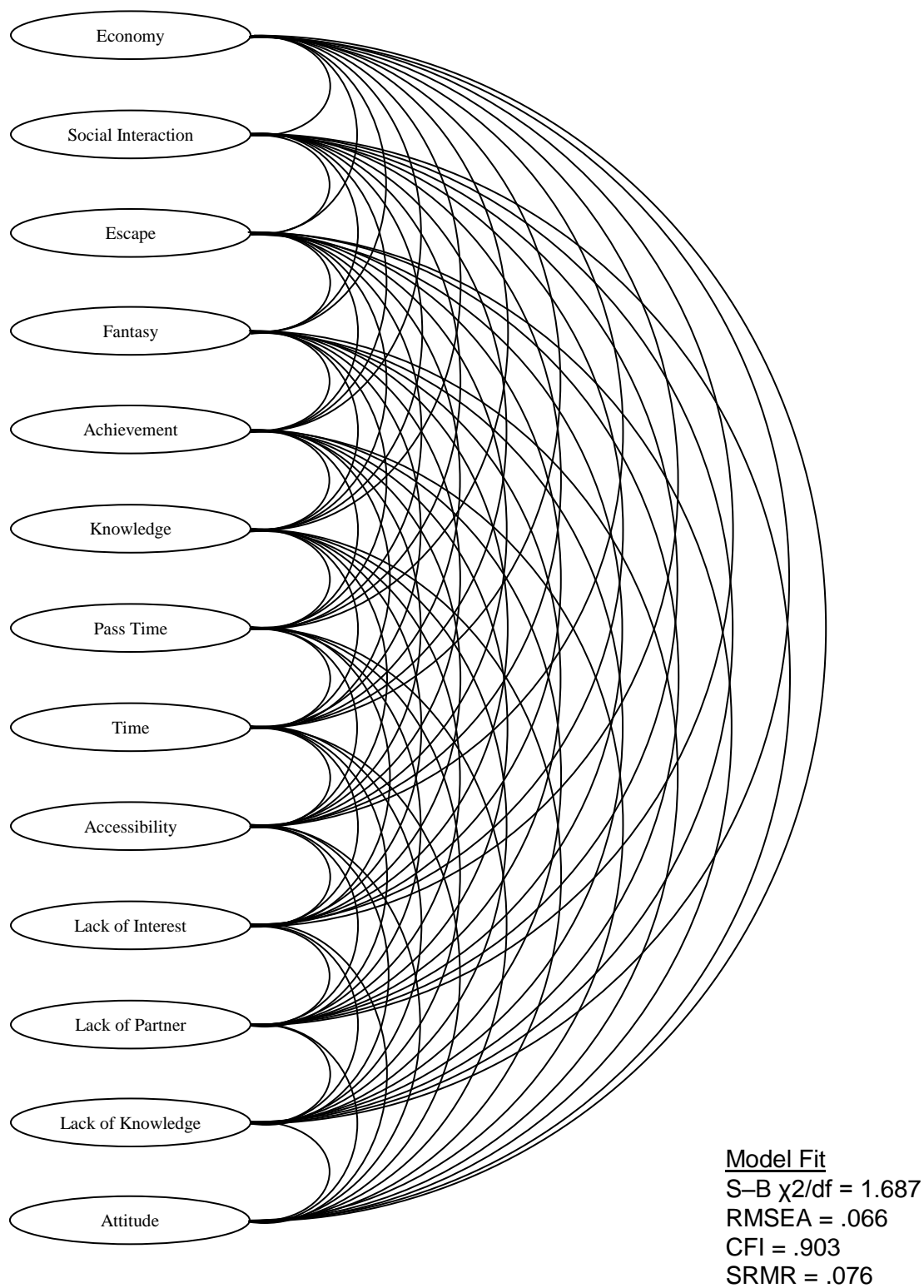
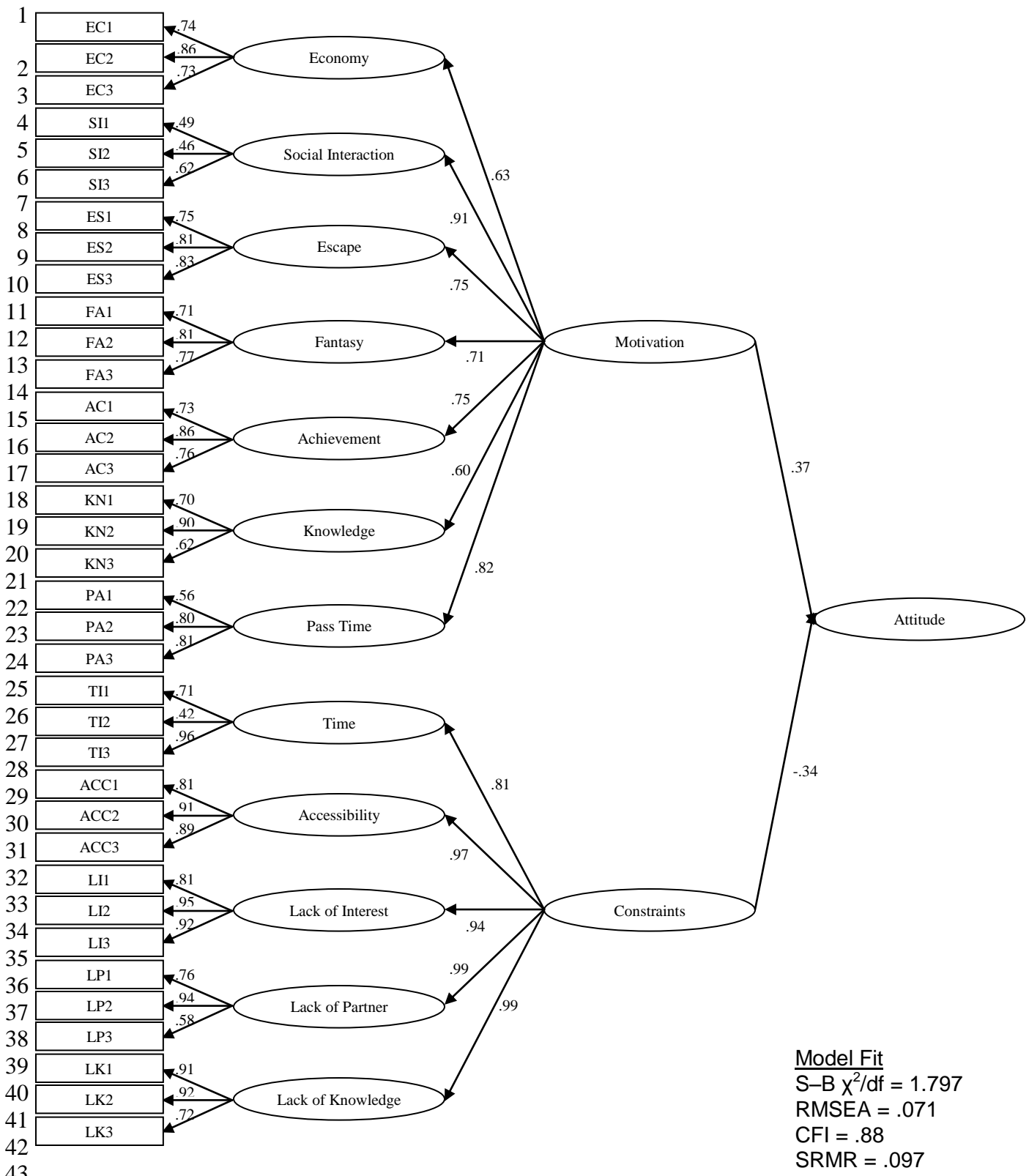


Figure 1 – Measurement Model of Motivations and Constraints

1
 2 Table 3
 3 Cronbach's alpha (α), Loadings, Construct Reliability (CR), Average Variance Extracted (AVE),
 4 and Means

Factor and Items	Loading	CR	AVE	Means
Economy ($\alpha = .81$)		.81	.61	
EC 1: I participate in fantasy sports because I have a chance to win prize money.	.74			3.27
EC 2: I participate in fantasy sports because it is an opportunity to engage in sports gambling.	.86			2.68
EC 3: I believe that having an economic investment in sport is an enjoyable part of fantasy sports participation.	.73			3.18
Social Interaction ($\alpha = .51$)		.51	.28	
SI 1: I participate in fantasy sports because I have a chance to get together with friends and family.	.49			3.96
SI 2: I participate in fantasy sports because I have a chance to meet new people.	.46			2.35
SI 3: I participate in fantasy sports because it allows me to participate in discussions.	.62			3.25
Escape ($\alpha = .83$)		.83	.64	
ES 1: I participate in fantasy sports because it allows me to escape from my day-to-day routine.	.75			3.59
ES 2: I participate in fantasy sports because it allows me to forget about school, work, or other things.	.81			3.39
ES 3: I participate in fantasy sports because it is a chance to get away from what I'm doing.	.83			3.30
Fantasy ($\alpha = .79$)		.79	.58	
FA 1: I participate in fantasy sports because I have a chance for running my dream team.	.71			3.46
FA 2: I participate in fantasy sports because it is a chance to be general manager, owner, and coach of my own team.	.81			3.75
FA 3: I participate in fantasy sports because I get to draft the players for my fantasy team.	.77			4.02
Achievement ($\alpha = .82$)		.82	.62	
AC 1: I participate in fantasy sports because I get pumped up when my fantasy players have good games.	.73			3.96
AC 2: I participate in fantasy sports because I feel good when my team/players are successful.	.86			4.10
AC 3: I participate in fantasy sports because I feel a personal sense of achievement when my team/players do well.	.76			3.91
Knowledge ($\alpha = .76$)		.76	.56	
KN 1: While participating in fantasy sports, I increase my knowledge about a particular sport.	.70			3.97
KN 2: While participating in fantasy sports, I increase my understanding of aspects of a particular sport by watching the game.	.90			3.78

<i>KN 3</i> : I participate in fantasy sports because I have a chance to learn things about sports which I didn't know before.	.62			3.22
Pass Time ($\alpha = .76$)		.76	.54	
<i>PA 1</i> : I participate in fantasy sports because I have nothing better to do.	.56			2.21
<i>PA 2</i> : I participate in fantasy sports because it passes the time away, particularly when I am bored.	.80			3.21
<i>PA 3</i> : I participate in fantasy sports because it gives me something to do to occupy my time.	.81			3.19
Time ($\alpha = .72$)		.72	.39	
<i>TI 1</i> : I do not have enough time to play fantasy sports.	.71			1.94
<i>TI 2</i> : I spend my free time taking care of my family and friends.	.42			2.24
<i>TI 3</i> : I am too busy to access the Internet for playing fantasy sports because of studying or working.	.96			1.68
Accessibility ($\alpha = .90$)		.90	.74	
<i>ACC 1</i> : There are no appropriate places for me to access to Internet.	.81			1.45
<i>ACC 2</i> : I do not play fantasy sports because I do not have a computer.	.91			1.34
<i>ACC 3</i> : Fantasy sports website is not easy to access.	.89			1.42
Lack of Interest ($\alpha = .91$)		.91	.80	
<i>LI 1</i> : I am not interested in playing fantasy sports.	.81			1.49
<i>LI 2</i> : I did not enjoy playing fantasy sports in the past.	.95			1.50
<i>LI 3</i> : I do not like to participate in fantasy sport	.92			1.46
Lack of Partner ($\alpha = .76$)		.76	.60	
<i>LP 1</i> : I cannot find any friends or colleagues that will play fantasy sports with me.	.76			1.50
<i>LP 2</i> : No one I know participates in fantasy sports	.94			1.48
<i>LP 3</i> : I do not like to participate in fantasy sports with strangers.	.58			1.80
Lack of Knowledge ($\alpha = .87$)		.87	.73	
<i>LK 1</i> : Getting information on fantasy sports is not easy.	.91			1.50
<i>LK 2</i> : I do not know where or how I can participate in fantasy sports.	.92			1.43
<i>LK 3</i> : I am not good at certain special skills for playing fantasy sports, such as reading and understanding players and teams' statistics or using online features of websites.	.72			1.59



45 Figure 2 – Structural Model of Motivations, Constraints, and Attitude
 46

1 Table 4

2

3 *Factor Correlations among Motivations and Constraints Construct*

4

	EC	SI	ES	FA	AC	KN	PA	TI	ACC	LI	LP	LK
EC												
SI	.59											
ES	.48	.77										
FA	.39	.52	.49									
AC	.35	.69	.43	.77								
KN	.46	.57	.43	.37	.45							
PA	.46	.71	.67	.34	.40	.35						
TI	-.03	-.03	-.15	-.25	-.24	.02	-.04					
ACC	.13	-.03	-.05	-.18	-.32	-.02	.10	.75				
LI	.08	-.03	-.05	-.18	-.26	-.01	.06	.87	.92			
LP	.05	-.15	-.07	-.21	-.26	-.04	.05	.78	.96	.94		
LK	.09	-.04	-.04	-.25	-.27	-.01	.10	.83	.98	.92	.99	

5

Note. EC=Economy; SI=Social Interaction; ES=Escape; FA=Fantasy; AC=Achievement; KN=Knowledge;

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PA=Pass Time; TI=Time; ACC=Accessibility; LI=Lack of Interest; LP=Lack of Partner; LK=Lack of Knowledge.

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