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Development of the Attitude Towards Women’s Sports Scale (ATWS)

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Abstract

The purposes of the present study were to develop the Attitude Towards Women’s Sports (ATWS) scale and examine the instrument in terms of score reliability and validity. The ATWS was constructed to measure individuals’ evaluations of women’s sports in terms of cognitive and affective dimensions theoretically proposed by related literatures. The scale was developed in two phases using both subject matter expert reviews and the analysis of data from three samples of participants. In the first phase, reliability and validity evidence for the ATWS were gathered by utilizing subject matter expert reviews and conducting item analyses. In the second phase, data was collected on a new sample and examined using exploratory factor analysis, Cronbach’s alpha, and correlations with an external variable. Results from the study indicate that the ATWS Scale reliably measures eight theoretically hypothesized factors that are associated with cognitive and affective evaluations of women’s sports. In addition, these factors were positive predictors of participants’ self-reported consumption intentions.

Keywords: Consumer attitude, consumption intentions, fan behavior, sport marketing
Development of the Attitude Towards Women’s Sports Scale

Introduction

Women’s spectator sports often have a difficult time surviving in the United States. Throughout the 1990s and early 2000s women’s professional leagues in volleyball, softball, basketball, and soccer were established only to be disbanded due to problems associated with having limited fan bases (Elyachar & Moag, 2002; Michaelis, 2003; Rovell, 2003; Spencer & McClung, 2001; Weidie, 2010; Wesley, 1999; Yanda, 2011). In addition to the complete discontinuation of some women’s leagues, seasons have been cancelled and franchises have been transplanted from one city to another in hopes of gaining and maintaining supportive fans (Pethchesky, 2012; Weidie, 2010; WPS Communications, 2012). Similar to women’s professional sports, women’s collegiate sports programs often operate with financial losses; which frequently results in higher education institutions subsidizing women’s sports (Eichelberger, 2011; NCAA Revenues & Expenses Report, 2010).

If women’s sports in the United States are to be sustainable at present levels, or better yet grow, the current relatively small fan base is of major concern. Drawing large attendance and television audiences will not only increase revenues from ticket sales, but also increases revenues from sponsorships, advertisements, and broadcasting contracts. Understanding consumers’ views of women’s professional and collegiate sports is key in finding solutions to the lack of women’s sports consumption. Therefore, studying consumer attitudes should provide insights into fans’ views of women’s sports. These consumer attitudes are likely to explain how products are evaluated in terms of tangible properties and emotional responses (Hawkins, Mothersbaugh & Best, 2007) as well as in relationship to consumption intentions. The systematic examination of
how women’s sports are evaluated by consumers may also assist marketers in understanding the negative and positive aspects of their products.

Katz (1960) defined attitude as the tendency of individuals to evaluate objects in a favorable or unfavorable manner. Katz hypothesized that affect and belief elements are core components of attitudes. Applying Katz’s definition of attitude to women’s sports products may explain consumers’ affective and cognitive evaluations. This information could be used in differentiating women’s sports products from other competing entertainment options. In addition to consumer attitudes providing deeper understanding of cognitive and affective evaluations of women’s sports, these attitudes likely are related to consumers’ behavioral response tendencies for women’s sporting events. As there is considerable evidence in the literature that consumer attitudes often lead to observable behaviors (Chen, 2007; Dwyer, 2013; Kraus, 1995; Lim, Martin, & Kwak, 2010; Martinez Caro & Martinez Garcia, 2007).

Over the years, sport fans’ attitudes in relationship to behavioral outcomes of interest have been sporadically studied (Dixon, 2002; Lim, Martin, & Kwak, 2010; Mahony & Howard, 1998; Mahony & Moorman, 1999, 2000; McCabe, 2007, 2008, 2011; Sierra, Taute, & Heiser, 2010). Although these studies provided valuable information, several limitations have been identified in the literature; including the following: 1) there is little consistency in how attitudes are defined and measured; 2) theoretical frameworks of attitude have been underutilized; 3) no studies have measured cognitive aspects of attitude by including evaluations of product attributes; 4) the majority of studies examining attitudes have done so with single item indicators, which does not allow complex analyses of psychometric properties; and, 5) validity and reliability evidence for the attitude measures has been limited, if provided at all. Therefore, understanding fans’ attitudes toward women’s sports, which include both cognitive and affective
evaluations, and how these attitudes relate to sport fans’ consumption behaviors may reveal important information that will inform the sustainability of women’s sports in the United States.

**Consumer behavior theory**

Consumer behavior theory focuses on understanding how individuals make consumption decisions. In particular, the theory proposes what factors are associated with the purchase decision process. According to the Overall Model of Consumer Behavior (OMCB) developed by Hawkins, Mothersbaugh, and Best (2007) individuals strive to achieve their ideal self-concept. Self-concept is defined as “the totality of the individual’s thoughts and feelings having reference to himself or herself as an object” (Hawkins et al., 2007, p.434). The model proposes that discrepancies between individuals’ actual and ideal self-concepts create needs and desires. When there is a significant discrepancy present consumers are likely to be more motivated to fulfill these needs and to achieve their ideal self-concept through the purchasing products and services.

According to Hawkins et al. (2007), motivation is the reason for behaviors and consumers seek motive satisfaction. In sports marketing, motivational factors affecting fan and spectator behaviors have received considerable interest in the literature. In several studies, achievement, aesthetic, physical skills of athletes, social interaction, and entertainment value of the sport are identified as the motivational factors that have the most influence on fans’ and spectators’ sporting event attendance decisions (Funk, Mahony, Nakazawa, & Hirakawa, 2001; Funk, Mahony, & Ridinger, 2002; Funk, Ridinger, & Moorman, 2003; James & Ridinger, 2002; Lough & Kim, 2004). Although a few of the needs and motives spectators and fans of sporting events want to satisfy have been examined in prior research; how sports products are evaluated by consumers in terms of potential for fulfilling these needs and motives has not been thoroughly
studied by consumer motivation studies. As a result, future studies of consumers’ attitudes towards spectator sports products could reveal this information and inform theory and practice.

Haddock and Maio (2004) defined attitude as “an individual’s overall evaluation of an object” (p.1) and according to the Two-Component Model of Attitude, these evaluations are composed of cognitive and affective judgments of an object (Bagozzi & Brunkrant, 1979).

Consumer evaluations of physical and factual attributes of an object form the cognitive component of attitude towards the product (Breckler, 1984; Kothandapani, 1971; Ostrom, 1969). The affective component of attitude is composed of positive and/or negative emotional responses to a product or service (Breckler, 1984). The cognitive and affective judgements are present when fans’ attempt to achieve motive satisfaction and facilitate their assignments of value to products. In other words, an overall attitude towards a product is composed of beliefs about the concrete attributes of a product and the feelings generated by the product.

In addition to indicating consumers’ overall evaluations of products, attitudes may predict consumers’ behaviors. Kraus’ meta-analysis (1995) reviewed empirical literature on attitude-behavior relationships in various domains, and identified attitude as a significant predictor of future behavior on a variety of topics including but not limited to signing a petition, attending church, using birth control pills, and intending to donate blood. In a more recent study, Chen (2007) observed positive relationships between attitude and intention to purchase organic food items. Although there are fewer studies examining attitude-consumption relationships within a sport context, attitudes have been shown to be predictive of watching and attending sporting events, satisfaction in sport participation, and loyalty to event participation. For example, Martinez Caro and Martinez Garcia (2007) investigated runners’ cognitive and affective evaluations of an event and their satisfaction with and loyalty to a yearly running event. Results
from the study revealed emotion as a predictor of participant satisfaction with the event and

cognitive evaluation a key predictor of intent to participate in the following year.

**Attitudes in spectator sports context**

The purpose of the present study was to develop a survey instrument for the examination

of consumer attitudes toward women’s sport. Due to the paucity of research on women’s sport in

relationship to consumer attitudes, studies on attitudes towards men’s spectator sports are

reviewed as well as women’s sports. Mahony and colleagues (1998; 1999; 2000) investigated

fans’ attitudes towards men’s professional sports in the United States as predictors of watching


concentrated on the affect aspect of attitude, and theorized that liking or disliking a sport team

solely showed participants’ attitudes towards teams. Their results reported strong positive

attitudes tend to lead to strong behaviors in terms of consuming sports products. In other words,

in a spectator sport context, sport fans tend to watch their favorite teams’ games instead of the

games of other teams. Lim and colleagues (2010) examined the relationship between personality,

emotion, attitude, and actual consumption behaviors of potential television viewers of Mixed

Martial Arts (MMA). According to their results, emotion is an antecedent of attitude when

reporting a positive relationship between attitudes and actual media consumption. Sierra, Taute,

and Heiser (2010) examined the cognitive component of attitudes towards sports in relationship

to the likelihood of attendance and purchasing team apparel. Fans with higher internal locus of

control for game outcomes and personal expertise, along with positive attitude toward head

coach has an increased likelihood of attending games, and fans with higher internal locus of

control were also more likely to purchase team apparel.
There are very few studies examining consumers’ attitudes towards women’s sports. Dixon (2002) studied attitudes toward Ladies Professional Golf Association (LPGA) events. More specifically, the effects of media coverage and involvement in LPGA events in attitude formation were investigated. Media coverage was found to be more influential in attitude formation towards LPGA than personal involvement as measured by volunteering at LPGA events. In a related study, McCabe investigated spectator attitudes towards the WNBA. In this 2008 study, she tested group differences in terms of gender, personality traits (instrumental vs. expressive) and gender role attitudes (egalitarian vs. traditional) on spectator attitudes towards WNBA basketball. Results showed no gender difference on attitudes related to WNBA basketball. However, participants with expressive traits and egalitarian gender roles reported more positive attitudes towards the WNBA. In a follow-up 2011 study, McCabe investigated whether the effects of gender factors (sex, psychological gender, and gender-role attitudes) on spectators’ attitudes towards WNBA were mediated by psychological involvement. Results of the study provided supporting evidence for the proposed mediator with positive feelings (attitudes) towards the WNBA fully mediated by participants’ psychological involvement with women’s basketball.

In sum, attitudes towards women’s spectator sports have had limited investigation in sport marketing literature and the relationships between attitudes and behavioral intentions have not received much attention in these studies. Furthermore, there is little consistency across studies in: how attitude is defined; what attitudes entail; and how attitude should be measured in spectator sports contexts. A careful review of the literature failed to identify a psychometrically sound measure of attitude towards women’s sports that utilizes a two-component framework as
well. Therefore, systematically developing a measure and collecting reliability and validity evidence supporting the interpretation of resultant scores is warranted.

**Two-component model of attitude**

Bagozzi and Burnkrant (1979) proposed the Two-Component Model of Attitude in which cognition and affect components of attitude combine to lead to behavioral intentions. These behavioral intentions are presupposed to lead to overt behaviors. Early studies from social psychology provide empirical evidence for the Two-Component Model of Attitude. In two studies with samples of undergraduate students, Bagozzi and Burnkrant (1979; 1980) collected data on attitudes towards religion and its relationship to various religious activities. Confirmatory factor analysis results provided supporting evidence for the Two-Component Model of Attitude. In 1985, Bagozzi and Burnkrant provided further evidence for the convergent, discriminant, and predictive validity of the Two-Component Model of Attitude. In an extension, Millar and Millar (1990) tested the construct validity of the Cognitive-Affective Model of Attitude and provided empirical support for the two dimensional attitude model.

In addition to dimensionality of attitudes, several researchers analyzed the influence of the components of attitudes on consumer behaviors. For example, the results of Bagozzi and Brunkrant (1979) suggested that affect is a more powerful predictor of behavioral intentions than cognitive factors. However, results from their 1980 study indicate that cognitive factors are more influential on behavioral intentions if cognitive or observational learning has occurred, while stronger affective component occurred for classical and operant conditioning. Bagozzi and Brunkrant concluded the impact of the components may differ from one product to another based on the nature of the product. Other studies provide converging evidence for this theoretical
explanation by demonstrating that the predictive contributions of affect and cognition varies across products and services (Breckler & Wiggins, 1989; Esses, Haddock, & Zanna, 1993; Millar & Millar, 1990).

In conclusion, several empirical studies have provided evidence for the two components of attitudes by reporting distinctions between affect-based and cognition-based attitudes. These studies show that attitudes are comprised of both affective and cognitive components. Furthermore, these studies have revealed different relationships between these dimensions and other variables of interest to sport researchers. To further investigate attitudes towards women’s sports we selected a Two-Component Model of Attitude because: 1) sport product consumption is proposed to be experiential and emotional (Mullin, Hardy, & Sutton, 2014); 2) consumer satisfaction is explained by the fit between cognitive and affective judgments of a product and consumers’ needs and expectations (Oliver, 1997); and, 3) both components of attitude predict future consumer behavior.

The Present Study

The purpose of the present study was two-fold. First, we developed the Attitude Towards Women’s Sports (ATWS) scale based on Bagozzi and Brunkrant’s (1979) Two-Component Model of Attitude. Both affective and cognitive aspects of attitude are included in the scale since: 1) sport event consumption is experiential and emotional (Mullin et al, 2014); 2) investigating cognitive evaluation of women’s sports and its attributes will provide information that could be used in changing attitudes toward these sports and differentiating these sports from its competitors; 3) consumers reach satisfaction, if cognitive and affective judgments of a product or service provides fulfillment of needs and expectations (Oliver, 1997); and, 4) both
affective and cognitive components of attitude may contribute to the prediction of future behavioral intentions in sporting events (Martinez Caro & Martinez Garcia, 2007).

Second, using the above theoretical framework as guidance we collected and analyzed data to evaluate the validity and reliability of the scores as suggested by Standards for Educational and Psychological Testing (AERA, APA, NCME, 2008). According to the standards, construct validity depends upon the ongoing systematic gathering of: 1) evidence based on test content; 2) evidence based on response processes; 3) evidence based on internal structure; 4) evidence based on relationship to external variables; and, 5) evidence based on consequences of testing. Since no study can focus on all five types of validity evidence we focused our efforts on gathering evidences based on test content, internal structure, and relationships to external variables. Therefore, the purpose of the present study was to develop the ATWS scale and collect validity and reliability evidences. The following research questions guided the construction and examination of the scales:

1. Do subject matter experts evaluate the items from the initial ATWS scale as representative of attitudes towards women’s sports?
2. Does internal structure of the scales as assessed by exploratory factor analysis support the interpretation of the scores as representing distinct components of attitudes towards women’s sports?
3. Are the resultant subscale scores reliable?
4. Do the correlations between the ATWS subscales with consumption intentions provide validity evidence for the newly developed scales?

Method
For the purpose of this study, attitude is defined as “an individual’s overall evaluation of an object” (Haddock & Maio, 2004, p.1), and attitude towards women’s sports is defined as cognitive evaluation of women’s sports in terms of its product attributes, and feelings toward women’s sports as products (Author, 2013). The Attitude Towards Women’s Sports (ATWS) scale was developed with two phases. IRB approval was received prior to data collection. In phase one of the study, a pool of items was generated from the literature and by writing additional items. The pool of items was then evaluated by subject matter experts for the items’ representativeness of the attitude towards women’s sports constructs. The subject matter experts’ evaluations were followed by two pilot studies to purify the remaining items in the pool. In phase two, construct and criterion validity of the ATWS scale and reliability of scores derived from ATWS scale were investigated with exploratory factor analysis, correlational analysis and Cronbach’s $\alpha$.

**Phase One - Item development and evaluation**

The instrument development process began with defining the domain of the attitude towards women’s sports. In order to define the domain of a construct, it was suggested that literature and existing instruments related to and measuring the proposed constructs be reviewed (AERA, APA, NCME, 2008). To adequately represent the domain of attitude towards women’s sports, literature on attitudes towards women’s sports (Dixon, 2002; McCabe, 2007, 2008, 2011), product dimensions of the women’s sports products (Ferreira & Armstrong, 2004; Greenhalgh, Simmons, Hambrick & Greenwell, 2011; Zhang, Ciafrone, Kim, Chen, Wang, Jin, & Mao, 2005), sport fans’ perceptions of female athletes (Harahousou-Kabitsi & Kabitsis, 1995; Harrison & Lynch, 2005; Harrison & Secarea, 2009; Hoiness, Weathington & Cotrell, 2008; Parker & Fink, 2008), and sport fans’ motives to attend/view women’s sporting events (Funk,
Mahony, Nakazawa, & Hirakawa, 2001; Funk, Mahony, & Ridinger, 2002; Funk, Ridinger, &
Moorman, 2003; James & Ridinger, 2002; Ridinger & Funk, 2006; Trail & Kim, 2011) were
reviewed.

Drama, aesthetic, excitement, entertainment price, wholesome environment, style of play,
role model, opportunity for women, star power, player skills, accessibility, uniqueness,
popularity, promotions, pre-game and in-game entertainment, facility quality, and affect were
identified as sub-constructs of a general attitude towards women’s sports construct (See
Appendix for definitions of sub-constructs). These 16 sub-constructs were identified as product
attributes of women’s sports and therefore covered cognitive aspect of attitude while the affect
subscale was representing affective evaluations of women’s sports. Once the sub-domains of the
attitude towards women’s sports construct were determined, 130 items were generated. Of these
130 items, 76 were gathered from recent studies (Bruner, Hensel, & James, 2005; Ferreira &
Armstrong, 2004; Funk, Mahony, Nakazawa, & Hirakawa, 2001; Funk, Ridinger, & Moorman,
2003; Funk, Mahony, & Ridinger, 2002; Mumcu, 2012; Greenhalgh, Simmons, Hambrick, &
Greenwell, 2011; Trail, Anderson, & Fink, 2002; Trail & Kim, 2011; Zhang et al., 2005). The
content of these items were modified to fit the context of women’s sports. For example, several
items taken from literature were related to other sports contexts and were modified to read as
product attributes associated with women’s sports (e.g., “Women’s sport competitions are
exciting”). The researchers generated an additional 56 items to ensure a large and comprehensive
item pool as suggested by DeVellis (2012) in early stages of scale development.

**Item evaluation.** After generating the pool of items, the first author identified a panel of
15 subject matter experts (SME) who were PhD level academics with knowledge of the
following factors found to be associated with attending women’s sporting events: attitude theory;
sport consumer behavior, marketing, and motivation. The SMEs were asked to participate in the study via email and to evaluate the proposed facets of the attitudes towards women’s sports constructs in the scale and to judge the representativeness of the items under each subscale.

Results. Of the 15 subject matter experts, eight agreed to participate in the study which resulted in 53.33% response rate. Based on the experts’ feedback the item pool was improved by rewriting items and deleting 12 items deemed as irrelevant. The SMEs did not suggest inclusion of any additional constructs to improve the content of the Attitude Towards Women’s Sports scale. Therefore, validity evidence based on test content supporting the ATWS scale was collected.

Pilot Study 1

The goal of the first pilot study was to test remaining items in the item pool by item analyses, and to reduce the number of items in the pool by eliminating the items that did not discriminate between different levels of attitude towards women’s sports.

Participants. A sample of 79 graduate sport management students from a university in the Southwest region of the U.S. were the participants of the first pilot study. Participants were chosen as the sample of the first pilot study because they were expected to report different levels of attitude towards women’s sports, yet be familiar with features of women’s sports. Of the 79 administered surveys, 44 (56%) were useable. Of the respondents, 70.5% were male; the majority of the sample was Caucasian (61.4%), followed by Hispanic/Latino (22.7%), with the remainder of individuals reporting to be African American (6.8%), Asian/Pacific Islander (4.5%), or other (4.5%). Household income within the sample had 70.4% of respondents earning less than $50,000, 22.8% earned between $50,000 and $100,000, and 6.8% of respondents earned more than $100,000. Most of the respondents (77.3%) had a college degree and 22.7%
indicated they had earned a graduate degree. All of the respondents were former athletes who
had participated in competitive sports. On the women’s sport fandom scale the mean score was
3.82 (SD = 1.61) with individual scores ranging from 1 to 7.60 on an 8-point scale. Therefore,
they held varying levels of attitude towards women’s sports and were an appropriate sample to
test effectiveness, readability, and ambiguity of items within the ATWS Scale.

**Instrument.** The instrument included the following sections: introduction, demographics,
Sport Fandom Questionnaire (Wann, 2002), ATWS scale (119 items), and consumption
intentions items (6 items). Response options to the ATWS scale and consumption intentions
items ranged from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicated greater
level of fandom, greater positive attitude, and higher likelihood of consumption of women’s
sporting events.

**Data analysis.** Item analyses by subscales were conducted to examine items’
performance by investigating means and standard deviations, inter-item correlations, item-total
correlations, and Cronbach’s Alpha-if-item-deleted statistics. Clark and Watson’s (1995),
DeVellis’ (2012), and Gliem and Gliem’s (2003) guidelines were followed in determining the
cut-off values for each statistics. Items with a floor (mean $\leq 2$) or ceiling effect ($m \geq 6$), that
correlated negatively or poorly with other items ($r < .3$) within subscales and redundant items ($r$
$> .8$) within subscales were deleted. The Cronbach’s Alpha-if-item-deleted statistic was also
examined to delete the items if deletion did not diminish or improve the score reliability of the
subscale.

**Results.** A total of 28 ATWS items were deleted as a result of data analysis in Pilot Study
1. Cronbach’s Alpha for the subscales with retained items ranged from .805 (accessibility) to
.908 (facility quality). See Table 1 for number of deleted items from each subscale and the
Cronbach’s *Alpha* statistics of the subscales after the items were deleted. The 91 retained items were organized to create the second version of the ATWS scale that was further examined in Pilot Study 2.

<p>Insert Table 1 about here</p>

**Pilot Study 2**

The purpose of the second pilot study was to further investigate item performance and purify the scales via item analyses with a sample of women’s sports fans.

**Participants.** Attendees of a collegiate women’s basketball game were participants of the second pilot study. Data were collected from 68 volunteer respondents during a regular season contest held at a university in the Southwest region of the US, and 48 (70.58%) of the 68 administered surveys were useable. The majority of the respondents were female (64.6%). From a racial background, the sample was 41.7% Caucasian and 35.4% Hispanic/Latino, with the remainder of individuals reporting to be African American (4.2%), Asian/Pacific Islander (2.1%), or other (8.4%). Respondents were from various age groups; 8.4% was 34 years old or younger, 8.4% was 35-44 years old, 14.6% was between 45-54 years old, 20.8% was between the ages of 55-64, and 45.8% was 65 years old or older. In terms of education, 10.4% had earned a high school degree, 35.4% had attended college, 22.9% had a college degree, and 29.2% held a graduate degree. Household income within the sample had 37.5% of respondents earning less than $50,000, 41.7% earning between $50,000 and $100,000, and 16.7% earning more than $100,000. Finally, 52.1% of the respondents indicated they had participated in competitive sports. The Sport Fandom Questionnaire (Wann, 2002) results indicated high level of women’s sport fandom for the women’s basketball attendees (*M* = 6.73, *SD* = 1.41) and scores ranged from 3 to 8.
Instrument. The instrument consisted of five sections including: introduction, demographics, Sport Fandom Questionnaire (Wann, 2002), the ATWS scale (91 items), and six consumption intentions items from the first pilot study. Response options to the ATWS scale and consumption intention items were the same as indicated in Pilot Study 1. The respondents were asked to complete the questionnaire considering the home women’s basketball team performing at the competition.

Data Collection. Two tables were set up at the west and east entrances of the arena by the Athletic Department. Eight students from a graduate-level Sport Consumer Behavior Class collected the data prior to the competition at the arena. As attendees entered the arena, they were invited to participate in the study and free memorabilia was provided to the participants by the Athletic Department as an incentive.

Data analysis. Item analyses were conducted by computing means and standard deviations, inter-item correlations, item-total correlations, and Cronbach’s Alpha-if-item-deleted by using the same criteria as the first pilot study. Items that revealed floor or ceiling effects, negative, low or very high inter-item correlations, and/or low or very high item-total correlations were deleted.

Results. As a result of item analyses, a total of 23 items were deleted and 68 items from the initial item-pool were retained in the ATWS scale. Cronbach’s Alpha statistic for each subscale was over the criterion of acceptable reliability of .70 (Cortina, 1993) and alpha ranged from .733 (promotion) to .901 (player skills). See Table 2 for the number of deleted items by subscales and the alphas of the subscales after items deleted.

Phase Two
The goals of phase two were to examine: 1) the internal structure of the scale using exploratory factor analysis (EFA), 2) the relationship between the ATWS subscales and consumption intentions; and, 3) the reliability of scores derived from the ATWS scale.

**Participants.** Fishbein and Ajzen (1975) suggested using samples with participants whose attitudes were assumed to be known in attitude instrument development. Therefore, the social media followers of the Tucker Center for Research on Girls and Women in Sport and the Women Talk Sports Network were chosen as subjects for this study. The Tucker Center is an interdisciplinary research center leading a pioneering effort to examine how sport and physical activity affect the lives of girls and women, their families, and communities. The Women Talk Sports Network is an online network that provides comprehensive coverage of women’s sports to raise the awareness of women in sport, to promote and empower female athleticism. Thus, followers of the Tucker Center and Women Talk Sport Network were expected to be interested in and familiar with women’s sports.

A total of 293 social media followers of the Tucker Center for Research on Girls and Women in Sport, and the Women Talk Sports Network voluntarily participated in the study. However, data of 63 participants were discarded due to incomplete surveys. Thus, the final sample size was 230. Respondents represented 33 different states and foreign countries. Of the respondents, 81.3% were female, and the vast majority of the sample was Caucasian (73%), followed by Hispanic/Latino decent (13%), African American (4.3%), Asian/Pacific Islander (3%), and other (4.8%). Respondents were from various age groups; 7% between the ages of 18 and 24, 30.9% between the ages of 25-34, 18.7% were 35-44 years old, 20.9% were 45-54 years old, 11.3% were 55-64 years old, and 10.9% were 65 years old or older. From an educational perspective, 4.8% held a high school degree, 13.5% had attended college, 37.4% held a college
degree, and 43.9% of the respondents had earned graduate degree. Household income within the sample had 37.5% of respondents earning less than $50,000, 36.5% earning between $50,000 and $100,000, and 25.2% earning more than $100,000. Finally, 78.7% of the respondents indicated that they had participated in competitive sports at some point in their lives. In addition to demographics, participants were asked to report their favorite women’s sport to consume and respond to questions regarding their favorite women’s sport. Participants identified 20 sports as their favorite women’s sports with basketball (45.2%), soccer (13.5%), cycling (6.1%), softball (5.2%), track and field (5.2%), tennis (4.3%), volleyball (4.3%), and skiing (4.3%) the most frequently reported sports. In general, participants reported high levels of fandom for their favorite sport ($M = 6.08, SD = 1.71$).

**Instrument.** The instrument included six sections including: introduction, demographics, the Sport Fandom Questionnaire (Wann, 2002), the ATWS scale (70 items), and consumption intentions items (6 items). In the introduction section, the purpose of the study, importance of subject participation to the study, voluntary nature of participation, anonymity of participants, and contact information of the researcher were stated. The respondents were asked to complete the questionnaire while considering their favorite women’s spectator sport.

**Data collection.** Brief information about the study and a link to the survey were posted on the Tucker Center’s and Women Talk Sports Network’s Facebook and Twitter accounts to inform and encourage social media followers to participate in the study. To increase response rate, Dillman’s Tailored Design Method (2007) was followed. The information was posted on the social media accounts four times, and each post was made a week after the previous post. Data were collected via Survey Monkey.
**Data analysis.** An *exploratory factor analysis* (EFA) was conducted to establish validity evidence based on internal structure of the ATWS. Reliability of overall scores and subscale scores of the ATWS were assessed with Cronbach’s *Alpha*. Pearson’s *r* was computed to examine the relationship between attitude towards women’s sports constructs and consumption intentions.

**Results.** Evidence on the internal structure of the ATWS Scale was collected by conducting a series of exploratory factor analyses. Kaiser-Meyer Olkin (KMO) Test of Sampling Adequacy and Bartlett’s Test of Sphericity statistics were calculated to test if the data met the assumptions of EFA. A statistically significant Bartlett’s Test of Sphericity (*p* < .001) and a much higher than the minimum criterion of .50 (Kaiser, 1970) for KMO Test of Sampling Adequacy (.885) showed that the data met the assumptions of EFA.

An EFA with principle axis factoring as the extraction method and a direct oblimin rotation was performed. The results of the initial factor analysis reported 16 factors with eigenvalues greater than 1.0 that accounted for 70.7 percent of the variance of all the items. However, the scree test did not reveal 16 factors. Investigation of factor loadings via un-rotated factor matrix reported that 54 of the 70 attitude towards women’s sports items loaded on the first factor and there was no apparent pattern of factor loadings. In reviewing the results via the pattern matrix, a pattern was identified in the factor loadings, although multiple items did not meet the minimum factor loading criterion of .40 (Floyd & Widaman, 1995). The items with low factor loadings were subsequently deleted.

After deleting items with low factor loadings a second EFA with a non-orthogonal rotation was performed. The pattern matrix was reviewed once again to identify dimensionality of ATWS and investigate factor loadings. This procedure was repeated until only those items
remained with factor loadings greater than .40. During this process, a total of 36 items were eliminated as they failed to meet the minimum criterion of having factor loading of .40 or above. Simple structure emerged with 34 items of the original 70 items retained. This produced an eight factor model that accounted for 68 percent of the variance of the items. The pattern matrix of the final analysis is presented in Table 3.

A reliability analysis was conducted for the final 34 items within their respective eight factors (excitement, opportunity for women, accessibility, aesthetic, drama, entertainment price, athlete quality, and affect) to answer research question three. Cronbach’s Alpha, item-total correlations and the Alpha-if-item-deleted statistics were reviewed to investigate if factors produce reliable scores, and if deleting any item would increase the alpha for any factor. Cronbach’s Alpha statistics for the factors ranged from .736 to .863, and alpha was equal to .908 for the ATWS Scale. All Cronbach’s α statistics were above the minimum criterion of .70 for social sciences (Cortina, 1993). Reliability analyses results are presented in Table 4.

Once the final set of items and their respective eight subscales of attitude towards women’s sports were created using factor analysis and reliability analysis, the scale was then correlated with the external variable-consumption intentions to answer research question four. The analyses assessed the degree to which respondents’ consumption intentions of women’s sporting events correlate with factors of the Attitude Towards Women’s Sports scale. Results revealed small to medium size correlations between consumption intentions and subscales of ATWS scale, and Pearson’s r ranged from .154 (correlation of consumption intentions with
accessibility) to .458 (correlation of consumption intentions with excitement). The correlational analysis results can be found in Table 5.

<Insert Table 5 about here>

**Discussion**

**Measure development**

The purpose of the study was to develop the Attitude Towards Women’s Sports scale to measure both cognitive and affective aspects of attitude in women’s spectator sports setting and collect content, construct, and criterion validity and reliability evidence for the scale.

As suggested by AERA, APA, NCME (2008), evidence based on test content was established by the reviews of subject matter experts. This resulted in a refined set of items being retained in the ATWS scale for examination in the two pilot studies. In addition to content validity, AERA, APA, NCME (2008) suggested investigating the internal structure, to support the construct validity of a measure, in measurement development. Exploratory factor analysis was conducted to identify dimensionality of ATWS scale and determine how items relate to each other and to the latent variable. The final factor structure identified eight factors, which were general and applicable to any women’s sports, covering both cognitive and affective aspects of attitude. Seven of the eight factors measured cognitive aspects of attitude through product attributes of women’s sports, which were excitement of competitions, aesthetic nature of performance, dramatic nature of competitions, accessibility of competitions, entertainment price, quality of athletes, and opportunity for women, and the eighth factor measured affective responses to women’s sports. Although there might be many attributes of a product or service, only six to eleven attributes would be salient in a person’s belief system and act as determinants of his/her attitude (Fishbein, 1967; Tuncalp & Sheth, 1975). Sport marketing literature also
reported similar results. Ferreira and Armstrong (2004) identified eight product attributes of collegiate men’s and women’s basketball and hockey, and Greenhalgh et al. (2011) identified seven product attributes of spectator sports. Therefore, identification of eight general factors covering both affective and cognitive components of attitude appears to be supported by the literature.

Finally, criterion validity was assessed as a part of the measure development procedure. The Two-Component Model of Attitude theoretically proposes a relationship between attitude and behavioral intentions (Bagozzi & Burnkrant, 1979) and consumer behavior theory suggests that an individual’s attitudes lead to his or her behaviors. Correlation analyses reported positive relationships, ranging from small (.154) to medium (.458), between consumption intentions and all eight subscales of the Attitude Towards Women’s Sports scale. This result replicated findings of previous studies investigating attitude and behavioral intention relationships (Chen, 2007; Dwyer, 2013; Huskinson & Haddock, 2006; Kraus, 1995; Martinez Caro & Martinez Garcia, 2007). When we looked more closely to identify whether cognitive or affective aspect of women’s sports were larger predictors of consumption intentions, excitement of competitions ($r^2=.21$) and fans’ positive emotional response to women’s sports ($r^2=.18$) were found to be the two largest predictors. Considering sport competitions as entertainment options, it is not surprising to see that excitement of events is the most influential predictor of repeated behavior. Our results reported fans’ affective reactions as a close second which could be explained by the emotional nature of sport consumption (Mullin, Hardy, & Sutton, 2014).

Theoretical implications

Much of the previous research on attitude in sport marketing focuses on the affective portion of attitude (Dixon, 2002; Lim et al., 2010; Mahony & Howard, 1998; Mahony &
Moorman, 1999; 2000; McCabe 2008; 2011) and ignores the cognitive aspects. The current study incorporated both affective and cognitive components of attitude in the Attitude Towards Women’s Sports scale for a few reasons. First, inclusion of both cognitive and affective aspects of attitudes provides a more complete picture of how the women’s sports products are evaluated by its consumers. Secondly, both cognitive and affective factors were positively correlated with the fans’ consumption intentions; therefore, both components have potential to predict fans’ consumption. Lastly, several of the cognitive factors can be targeted by sport marketers. Therefore the investigation of both cognitive and affective components of attitude has the potential to extend our understanding of fan behavior in sport marketing. The current study provides a psychometrically sound measure of fan attitude to utilize in future research of this nature.

**Practical implications**

There are several practical implications and potential uses for the developed ATWS scale. The developed instrument could be used by various women’s sport leagues, teams, and events in understanding different market segments’ favorable-unfavorable attitudes towards their products. Resulting information may reveal various market segments’ evaluations of the women’s sports products. This information could subsequently be used to focus marketing activities that stimulate consumption behavior of targeted market segments.

The ATWS scale could also be used in identifying cognitive and affective evaluations of the product. Specifically, understanding spectators’ and fans’ cognitive evaluations of women’s sports would allow marketers to identify salient product attributes and positive-negative evaluations of these attributes. This information is of the utmost importance since consumers evaluate products in terms of the potential to fulfill their needs and achieve their ideal self-
concept (Hawkins et al., 2007). Understanding what matters to the consumers of women’s sports would allow marketers to develop purposeful marketing activities which may induce consumption.

Lastly, understanding positive-negative cognitive and affective components of attitude could be used in changing attitudes towards women’s sports products. According to the OMCB (Hawkins et al., 2007), overall attitude of an individual could be changed in three ways: by changing their beliefs about the product, by changing emotional responses to the product, or finally by having them try the product. Identifying negatively evaluated products and understanding underlying reasons for not attending and/or viewing women’s sports will allow women’s sports organizations to improve their products and create effective marketing activities. Activities targeted at changing consumer beliefs and feelings may increase the likelihood of attendance at women’s sporting events and viewership on television.

Limitations

The present study developed an instrument to measure attitudes towards women’s sports. Unlike previous studies, the present study was: based on a theoretical framework of attitude; APA, AERA, NCME (2008) guidelines were followed in instrument development; and, validity and reliability evidence for the resultant scale was examined. Therefore, the process and resulting evidence was a successful outcome for the present study. However, no study is free of limitations. Generalizability of the study results may be limited. Since the purpose of the study was to develop a survey instrument, participants of the study were chosen purposefully. For the second pilot study and phase two, women’s sports fans were chosen as informants, because the attitude literature suggested using a sample that is likely to consist of individuals who have developed attitudes on the topic in the measure development stage (Fishbein & Ajzen, 1975).
Participants of the present study clearly hold highly positive attitudes towards their favorite women’s sports. However, they were recruited via a non-probabilistic sampling method which may restrict the generalizability to other populations of interest.

**Future Recommendations**

Further research is needed to clarify or bolster evidence to support understanding and assessment of attitude towards women’s sports. The goal of the study was to develop a general Attitude Towards Women’s Sports scale which is applicable to any women’s sports. Emergence of eight general factors explaining participants’ attitudes toward their favorite women’s sports was a desired outcome. Future studies should focus on developing sport-specific instruments that will measure adequately the domain of specific sports. Other populations may be used in future studies to investigate attitudes towards women’s sports and identify reasons for not attending or viewing women’s sporting events. This information will allow marketers to create specific marketing activities to make women’s sports more appealing to more people and develop a larger fan base. Lastly, other external variables such as past consumption and sport identity should be included in future studies as they might increase our understanding of sports fans’ consumption intentions.

**Conclusion**

The purpose of the study was to develop a general Attitude Towards Women’s Sport scale that could be used to examine attitudes towards any women’s sports. Various validity and reliability evidence were sought in the study throughout the development of the final Attitude Towards Women’s Sport scale to support score interpretation derived from the scale. Supporting validity evidences were collected for test content, internal structure, and relationship to other variables. Results also revealed strong reliability for the scores of the ATWS scale. Further
research should be conducted to improve the content of the current scale by focusing on sport specific analysis, and the scale should also be tested with other populations.

References


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