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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

23 **Development of the Attitude Towards Women's Sports Scale**

24 **Introduction**

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

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

45 how women's sports are evaluated by consumers may also assist marketers in understanding the
46 negative and positive aspects of their products.

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

57 Over the years, sport fans' attitudes in relationship to behavioral outcomes of interest
58 have been sporadically studied (Dixon, 2002; Lim, Martin, & Kwak, 2010; Mahony & Howard,
59 1998; Mahony & Moorman, 1999, 2000; McCabe, 2007, 2008, 2011; Sierra, Taute, & Heiser,
60 2010). Although these studies provided valuable information, several limitations have been
61 identified in the literature; including the following: 1) there is little consistency in how attitudes
62 are defined and measured; 2) theoretical frameworks of attitude have been underutilized; 3) no
63 studies have measured cognitive aspects of attitude by including evaluations of product
64 attributes; 4) the majority of studies examining attitudes have done so with single item
65 indicators, which does not allow complex analyses of psychometric properties; and, 5) validity
66 and reliability evidence for the attitude measures has been limited, if provided at all. Therefore,
67 understanding fans' attitudes toward women's sports, which include both cognitive and affective

68 evaluations, and how these attitudes relate to sport fans' consumption behaviors may reveal
69 important information that will inform the sustainability of women's sports in the United States.

70 **Consumer behavior theory**

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

80 According to Hawkins et al. (2007), motivation is the reason for behaviors and
81 consumers seek motive satisfaction. In sports marketing, motivational factors affecting fan and
82 spectator behaviors have received considerable interest in the literature. In several studies,
83 achievement, aesthetic, physical skills of athletes, social interaction, and entertainment value of
84 the sport are identified as the motivational factors that have the most influence on fans' and
85 spectators' sporting event attendance decisions (Funk, Mahony, Nakazawa, & Hirakawa, 2001;
86 Funk, Mahony, & Ridinger, 2002; Funk, Ridinger, & Moorman, 2003; James & Ridinger, 2002;
87 Lough & Kim, 2004). Although a few of the needs and motives spectators and fans of sporting
88 events want to satisfy have been examined in prior research; how sports products are evaluated
89 by consumers in terms of potential for fulfilling these needs and motives has not been thoroughly

90 studied by consumer motivation studies. As a result, future studies of consumers' attitudes
91 towards spectator sports products could reveal this information and inform theory and practice.

92 Haddock and Maio (2004) defined attitude as "an individual's overall evaluation of an
93 object" (p.1) and according to the Two-Component Model of Attitude, these evaluations are
94 composed of cognitive and affective judgments of an object (Bagozzi & Brunkrant, 1979).
95 Consumer evaluations of physical and factual attributes of an object form the cognitive
96 component of attitude towards the product (Breckler, 1984; Kothandapani, 1971; Ostrom, 1969).
97 The affective component of attitude is composed of positive and/or negative emotional responses
98 to a product or service (Breckler, 1984). The cognitive and affective judgements are present
99 when fans' attempt to achieve motive satisfaction and facilitate their assignments of value to
100 products. In other words, an overall attitude towards a product is composed of beliefs about the
101 concrete attributes of a product and the feelings generated by the product.

102 In addition to indicating consumers' overall evaluations of products, attitudes may predict
103 consumers' behaviors. Kraus' meta-analysis (1995) reviewed empirical literature on attitude-
104 behavior relationships in various domains, and identified attitude as a significant predictor of
105 future behavior on a variety of topics including but not limited to signing a petition, attending
106 church, using birth control pills, and intending to donate blood. In a more recent study, Chen
107 (2007) observed positive relationships between attitude and intention to purchase organic food
108 items. Although there are fewer studies examining attitude-consumption relationships within a
109 sport context, attitudes have been shown to be predictive of watching and attending sporting
110 events, satisfaction in sport participation, and loyalty to event participation. For example,
111 Martinez Caro and Martinez Garcia (2007) investigated runners' cognitive and affective
112 evaluations of an event and their satisfaction with and loyalty to a yearly running event. Results

113 from the study revealed emotion as a predictor of participant satisfaction with the event and
114 cognitive evaluation a key predictor of intent to participate in the following year.

115 **Attitudes in spectator sports context**

116 The purpose of the present study was to develop a survey instrument for the examination
117 of consumer attitudes toward women's sport. Due to the paucity of research on women's sport in
118 relationship to consumer attitudes, studies on attitudes towards men's spectator sports are
119 reviewed as well as women's sports. Mahony and colleagues (1998; 1999; 2000) investigated
120 fans' attitudes towards men's professional sports in the United States as predictors of watching
121 sporting events. Mahony and Howard (1998) and Mahony and Moorman (1999, 2000)
122 concentrated on the affect aspect of attitude, and theorized that liking or disliking a sport team
123 solely showed participants' attitudes towards teams. Their results reported strong positive
124 attitudes tend to lead to strong behaviors in terms of consuming sports products. In other words,
125 in a spectator sport context, sport fans tend to watch their favorite teams' games instead of the
126 games of other teams. Lim and colleagues (2010) examined the relationship between personality,
127 emotion, attitude, and actual consumption behaviors of potential television viewers of Mixed
128 Martial Arts (MMA). According to their results, emotion is an antecedent of attitude when
129 reporting a positive relationship between attitudes and actual media consumption. Sierra, Taute,
130 and Heiser (2010) examined the cognitive component of attitudes towards sports in relationship
131 to the likelihood of attendance and purchasing team apparel. Fans with higher internal locus of
132 control for game outcomes and personal expertise, along with positive attitude toward head
133 coach has an increased likelihood of attending games, and fans with higher internal locus of
134 control were also more likely to purchase team apparel.

135 There are very few studies examining consumers' attitudes towards women's sports.
136 Dixon (2002) studied attitudes toward Ladies Professional Golf Association (LPGA) events.
137 More specifically, the effects of media coverage and involvement in LPGA events in attitude
138 formation were investigated. Media coverage was found to be more influential in attitude
139 formation towards LPGA than personal involvement as measured by volunteering at LPGA
140 events. In a related study, McCabe investigated spectator attitudes towards the WNBA. In this
141 2008 study, she tested group differences in terms of gender, personality traits (instrumental vs.
142 expressive) and gender role attitudes (egalitarian vs. traditional) on spectator attitudes towards
143 WNBA basketball. Results showed no gender difference on attitudes related to WNBA
144 basketball. However, participants with expressive traits and egalitarian gender roles reported
145 more positive attitudes towards the WNBA. In a follow-up 2011 study, McCabe investigated
146 whether the effects of gender factors (sex, psychological gender, and gender-role attitudes) on
147 spectators' attitudes towards WNBA were mediated by psychological involvement. Results of
148 the study provided supporting evidence for the proposed mediator with positive feelings
149 (attitudes) towards the WNBA fully mediated by participants' psychological involvement with
150 women's basketball.

151 In sum, attitudes towards women's spectator sports have had limited investigation in
152 sport marketing literature and the relationships between attitudes and behavioral intentions have
153 not received much attention in these studies. Furthermore, there is little consistency across
154 studies in: how attitude is defined; what attitudes entail; and how attitude should be measured in
155 spectator sports contexts. A careful review of the literature failed to identify a psychometrically
156 sound measure of attitude towards women's sports that utilizes a two-component framework as

157 well. Therefore, systematically developing a measure and collecting reliability and validity
158 evidence supporting the interpretation of resultant scores is warranted.

159 **Two-component model of attitude**

160 Bagozzi and Burnkrant (1979) proposed the Two-Component Model of Attitude in which
161 cognition and affect components of attitude combine to lead to behavioral intentions. These
162 behavioral intentions are presupposed to lead to overt behaviors. Early studies from social
163 psychology provide empirical evidence for the Two-Component Model of Attitude. In two
164 studies with samples of undergraduate students, Bagozzi and Burnkrant (1979; 1980) collected
165 data on attitudes towards religion and its relationship to various religious activities. Confirmatory
166 factor analysis results provided supporting evidence for the Two-Component Model of Attitude.
167 In 1985, Bagozzi and Burnkrant provided further evidence for the convergent, discriminant, and
168 predictive validity of the Two-Component Model of Attitude. In an extension, Millar and Millar
169 (1990) tested the construct validity of the Cognitive-Affective Model of Attitude and provided
170 empirical support for the two dimensional attitude model.

171 <Insert Figure 1 about here>

172 In addition to dimensionality of attitudes, several researchers analyzed the influence of
173 the components of attitudes on consumer behaviors. For example, the results of Bagozzi and
174 Brunkrant (1979) suggested that affect is a more powerful predictor of behavioral intentions than
175 cognitive factors. However, results from their 1980 study indicate that cognitive factors are more
176 influential on behavioral intentions if cognitive or observational learning has occurred, while
177 stronger affective component occurred for classical and operant conditioning. Bagozzi and
178 Brunkrant concluded the impact of the components may differ from one product to another based
179 on the nature of the product. Other studies provide converging evidence for this theoretical

180 explanation by demonstrating that the predictive contributions of affect and cognition varies
181 across products and services (Breckler & Wiggins, 1989; Esses, Haddock, & Zanna, 1993; Millar
182 & Millar, 1990).

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

193 **The Present Study**

194 The purpose of the present study was two-fold. First, we developed the Attitude Towards
195 Women's Sports (ATWS) scale based on Bagozzi and Brunkrant's (1979) Two-Component
196 Model of Attitude. Both affective and cognitive aspects of attitude are included in the scale
197 since: 1) sport event consumption is experiential and emotional (Mullin et al, 2014); 2)
198 investigating cognitive evaluation of women's sports and its attributes will provide information
199 that could be used in changing attitudes toward these sports and differentiating these sports from
200 its competitors; 3) consumers reach satisfaction, if cognitive and affective judgments of a
201 product or service provides fulfillment of needs and expectations (Oliver, 1997); and, 4) both

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

236 **Phase One - Item development and evaluation**

237 The instrument development process began with defining the domain of the attitude
238 towards women’s sports. In order to define the domain of a construct, it was suggested that
239 literature and existing instruments related to and measuring the proposed constructs be reviewed
240 (AERA, APA, NCME, 2008). To adequately represent the domain of attitude towards women’s
241 sports, literature on attitudes towards women’s sports (Dixon, 2002; McCabe, 2007, 2008, 2011),
242 product dimensions of the women’s sports products (Ferreira & Armstrong, 2004; Greenhalgh,
243 Simmons, Hambrick & Greenwell, 2011; Zhang, Ciafrone, Kim, Chen, Wang, Jin, & Mao,
244 2005), sport fans’ perceptions of female athletes (Harahousou-Kabitsi & Kabitsis, 1995;
245 Harrison & Lynch, 2005; Harrison & Secarea, 2009; Hoiness, Weathington & Cotrell, 2008;
246 Parker & Fink, 2008), and sport fans’ motives to attend/view women’s sporting events (Funk,

247 Mahony, Nakazawa, & Hirakawa, 2001; Funk, Mahony, & Ridinger, 2002; Funk, Ridinger, &
248 Moorman, 2003; James & Ridinger, 2002; Ridinger & Funk, 2006; Trail & Kim, 2011) were
249 reviewed.

250 Drama, aesthetic, excitement, entertainment price, wholesome environment, style of play,
251 role model, opportunity for women, star power, player skills, accessibility, uniqueness,
252 popularity, promotions, pre-game and in-game entertainment, facility quality, and affect were
253 identified as sub-constructs of a general attitude towards women's sports construct (See
254 Appendix for definitions of sub-constructs). These 16 sub-constructs were identified as product
255 attributes of women's sports and therefore covered cognitive aspect of attitude while the affect
256 subscale was representing affective evaluations of women's sports. Once the sub-domains of the
257 attitude towards women's sports construct were determined, 130 items were generated. Of these
258 130 items, 76 were gathered from recent studies (Bruner, Hensel, & James, 2005; Ferreira &
259 Armstrong, 2004; Funk, Mahony, Nakazawa, & Hirakawa, 2001; Funk, Ridinger, & Moorman,
260 2003; Funk, Mahony, & Ridinger, 2002; Mumcu, 2012; Greenhalgh, Simmons, Hambrick, &
261 Greenwell, 2011; Trail, Anderson, & Fink, 2002; Trail & Kim, 2011; Zhang et al., 2005). The
262 content of these items were modified to fit the context of women's sports. For example, several
263 items taken from literature were related to other sports contexts and were modified to read as
264 product attributes associated with women's sports (e.g., "Women's sport competitions are
265 exciting"). The researchers generated an additional 56 items to ensure a large and comprehensive
266 item pool as suggested by DeVellis (2012) in early stages of scale development.

267 **Item evaluation.** After generating the pool of items, the first author identified a panel of
268 15 subject matter experts (SME) who were PhD level academics with knowledge of the
269 following factors found to be associated with attending women's sporting events: attitude theory;

270 sport consumer behavior, marketing, and motivation. The SMEs were asked to participate in the
271 study via email and to evaluate the proposed facets of the attitudes towards women's sports
272 constructs in the scale and to judge the representativeness of the items under each subscale.

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

279 **Pilot Study 1**

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

283 **Participants.** A sample of 79 graduate sport management students from a university in
284 the Southwest region of the U.S. were the participants of the first pilot study. Participants were
285 chosen as the sample of the first pilot study because they were expected to report different levels
286 of attitude towards women's sports, yet be familiar with features of women's sports. Of the 79
287 administered surveys, 44 (56%) were useable. Of the respondents, 70.5% were male; the
288 majority of the sample was Caucasian (61.4%), followed by Hispanic/Latino (22.7%), with the
289 remainder of individuals reporting to be African American (6.8%), Asian/Pacific Islander
290 (4.5%), or other (4.5%). Household income within the sample had 70.4% of respondents earning
291 less than \$50,000, 22.8% earned between \$50,000 and \$100,000, and 6.8% of respondents
292 earned more than \$100,000. Most of the respondents (77.3%) had a college degree and 22.7%

293 indicated they had earned a graduate degree. All of the respondents were former athletes who
294 had participated in competitive sports. On the women's sport fandom scale the mean score was
295 3.82 ($SD = 1.61$) with individual scores ranging from 1 to 7.60 on an 8-point scale. Therefore,
296 they held varying levels of attitude towards women's sports and were an appropriate sample to
297 test effectiveness, readability, and ambiguity of items within the ATWS Scale.

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

304 **Data analysis.** Item analyses by subscales were conducted to examine items'
305 performance by investigating means and standard deviations, inter-item correlations, item-total
306 correlations, and Cronbach's *Alpha*-if-item-deleted statistics. Clark and Watson's (1995),
307 DeVellis' (2012), and Gliem and Gliem's (2003) guidelines were followed in determining the
308 cut-off values for each statistics. Items with a floor ($mean \leq 2$) or ceiling effect ($m \geq 6$), that
309 correlated negatively or poorly with other items ($r < .3$) within subscales and redundant items (r
310 $> .8$) within subscales were deleted. The Cronbach's *Alpha*-if-item-deleted statistic was also
311 examined to delete the items if deletion did not diminish or improve the score reliability of the
312 subscale.

313 **Results.** A total of 28 ATWS items were deleted as a result of data analysis in Pilot Study
314 1. Cronbach's *Alpha* for the subscales with retained items ranged from .805 (accessibility) to
315 .908 (facility quality). See Table 1 for number of deleted items from each subscale and the

316 Cronbach's *Alpha* statistics of the subscales after the items were deleted. The 91 retained items
317 were organized to create the second version of the ATWS scale that was further examined in
318 Pilot Study 2.

319 <Insert Table 1 about here>

320 **Pilot Study 2**

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

323 **Participants.** Attendees of a collegiate women's basketball game were participants of the
324 second pilot study. Data were collected from 68 volunteer respondents during a regular season
325 contest held at a university in the Southwest region of the US, and 48 (70.58%) of the 68
326 administered surveys were useable. The majority of the respondents were female (64.6%). From
327 a racial background, the sample was 41.7% Caucasian and 35.4% Hispanic/Latino, with the
328 remainder of individuals reporting to be African American (4.2%), Asian/Pacific Islander
329 (2.1%), or other (8.4%). Respondents were from various age groups; 8.4% was 34 years old or
330 younger, 8.4% was 35-44 years old, 14.6% was between 45-54 years old, 20.8% was between
331 the ages of 55-64, and 45.8% was 65 years old or older. In terms of education, 10.4% had earned
332 a high school degree, 35.4% had attended college, 22.9% had a college degree, and 29.2% held a
333 graduate degree. Household income within the sample had 37.5% of respondents earning less
334 than \$50,000, 41.7% earning between \$50,000 and \$100,000, and 16.7% earning more than
335 \$100,000. Finally, 52.1% of the respondents indicated they had participated in competitive
336 sports. The Sport Fandom Questionnaire (Wann, 2002) results indicated high level of women's
337 sport fandom for the women's basketball attendees ($M = 6.73$, $SD = 1.41$) and scores ranged
338 from 3 to 8.

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

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

375 A total of 293 social media followers of the Tucker Center for Research on Girls and
376 Women in Sport, and the Women Talk Sports Network voluntarily participated in the study.
377 However, data of 63 participants were discarded due to incomplete surveys. Thus, the final
378 sample size was 230. Respondents represented 33 different states and foreign countries. Of the
379 respondents, 81.3% were female, and the vast majority of the sample was Caucasian (73%),
380 followed by Hispanic/Latino decent (13%), African American (4.3%), Asian/Pacific Islander
381 (3%), and other (4.8%). Respondents were from various age groups; 7% between the ages of 18
382 and 24, 30.9% between the ages of 25-34, 18.7% were 35-44 years old, 20.9% were 45-54 years
383 old, 11.3% were 55-64 years old, and 10.9% were 65 years old or older. From an educational
384 perspective, 4.8% held a high school degree, 13.5% had attended college, 37.4% held a college

385 degree, and 43.9% of the respondents had earned graduate degree. Household income within the
386 sample had 37.5% of respondents earning less than \$50,000, 36.5% earning between \$50,000
387 and \$100,000, and 25.2% earning more than \$100,000. Finally, 78.7% of the respondents
388 indicated that they had participated in competitive sports at some point in their lives. In addition
389 to demographics, participants were asked to report their favorite women's sport to consume and
390 respond to questions regarding their favorite women's sport. Participants identified 20 sports as
391 their favorite women's sports with basketball (45.2%), soccer (13.5%), cycling (6.1%), softball
392 (5.2%), track and field (5.2%), tennis (4.3%), volleyball (4.3%), and skiing (4.3%) the most
393 frequently reported sports. In general, participants reported high levels of fandom for their
394 favorite sport ($M = 6.08$, $SD = 1.71$).

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

401 **Data collection.** Brief information about the study and a link to the survey were posted
402 on the Tucker Center's and Women Talk Sports Network's Facebook and Twitter accounts to
403 inform and encourage social media followers to participate in the study. To increase response
404 rate, Dillman's Tailored Design Method (2007) was followed. The information was posted on
405 the social media accounts four times, and each post was made a week after the previous post.
406 Data were collected via Survey Monkey.

407 **Data analysis.** An *exploratory factor analysis* (EFA) was conducted to establish validity
408 evidence based on internal structure of the ATWS. Reliability of overall scores and subscale
409 scores of the ATWS were assessed with Cronbach's *Alpha*. Pearson's *r* was computed to
410 examine the relationship between attitude towards women's sports constructs and consumption
411 intentions.

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

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

427 After deleting items with low factor loadings a second EFA with a non-orthogonal
428 rotation was performed. The pattern matrix was reviewed once again to identify dimensionality
429 of ATWS and investigate factor loadings. This procedure was repeated until only those items

430 remained with factor loadings greater than .40. During this process, a total of 36 items were
431 eliminated as they failed to meet the minimum criterion of having factor loading of .40 or above.
432 Simple structure emerged with 34 items of the original 70 items retained. This produced an eight
433 factor model that accounted for 68 percent of the variance of the items. The pattern matrix of the
434 final analysis is presented in Table 3.

435 <Insert Table 3 about here>

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

444 <Insert Table 4 about here>

445 Once the final set of items and their respective eight subscales of attitude towards
446 women's sports were created using factor analysis and reliability analysis, the scale was then
447 correlated with the external variable-consumption intentions to answer research question four.
448 The analyses assessed the degree to which respondents' consumption intentions of women's
449 sporting events correlate with factors of the Attitude Towards Women's Sports scale. Results
450 revealed small to medium size correlations between consumption intentions and subscales of
451 ATWS scale, and Pearson's *r* ranged from .154 (correlation of consumption intentions with

452 accessibility) to .458 (correlation of consumption intentions with excitement). The correlational
453 analysis results can be found in Table 5.

454 <Insert Table 5 about here>

455 **Discussion**

456 **Measure development**

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

460 As suggested by AERA, APA, NCME (2008), evidence based on test content was
461 established by the reviews of subject matter experts. This resulted in a refined set of items being
462 retained in the ATWS scale for examination in the two pilot studies. In addition to content
463 validity, AERA, APA, NCME (2008) suggested investigating the internal structure, to support
464 the construct validity of a measure, in measurement development. Exploratory factor analysis
465 was conducted to identify dimensionality of ATWS scale and determine how items relate to each
466 other and to the latent variable. The final factor structure identified eight factors, which were
467 general and applicable to any women's sports, covering both cognitive and affective aspects of
468 attitude. Seven of the eight factors measured cognitive aspects of attitude through product
469 attributes of women's sports, which were excitement of competitions, aesthetic nature of
470 performance, dramatic nature of competitions, accessibility of competitions, entertainment price,
471 quality of athletes, and opportunity for women, and the eighth factor measured affective
472 responses to women's sports. Although there might be many attributes of a product or service,
473 only six to eleven attributes would be salient in a person's belief system and act as determinants
474 of his/her attitude (Fishbein, 1967; Tuncalp & Sheth, 1975). Sport marketing literature also

475 reported similar results. Ferreira and Armstrong (2004) identified eight product attributes of
476 collegiate men's and women's basketball and hockey, and Greenhalgh et al. (2011) identified
477 seven product attributes of spectator sports. Therefore, identification of eight general factors
478 covering both affective and cognitive components of attitude appears to be supported by the
479 literature.

480 Finally, criterion validity was assessed as a part of the measure development procedure.
481 The Two-Component Model of Attitude theoretically proposes a relationship between attitude
482 and behavioral intentions (Bagozzi & Burnkrant, 1979) and consumer behavior theory suggests
483 that an individual's attitudes lead to his or her behaviors. Correlation analyses reported positive
484 relationships, ranging from small (.154) to medium (.458), between consumption intentions and
485 all eight subscales of the Attitude Towards Women's Sports scale. This result replicated findings
486 of previous studies investigating attitude and behavioral intention relationships (Chen, 2007;
487 Dwyer, 2013; Huskinson & Haddock, 2006; Kraus, 1995; Martinez Caro & Martinez Garcia,
488 2007). When we looked more closely to identify whether cognitive or affective aspect of
489 women's sports were larger predictors of consumption intentions, excitement of competitions
490 ($r^2=.21$) and fans' positive emotional response to women's sports ($r^2=.18$) were found to be the
491 two largest predictors. Considering sport competitions as entertainment options, it is not
492 surprising to see that excitement of events is the most influential predictor of repeated behavior.
493 Our results reported fans' affective reactions as a close second which could be explained by the
494 emotional nature of sport consumption (Mullin, Hardy, & Sutton, 2014).

495 **Theoretical implications**

496 Much of the previous research on attitude in sport marketing focuses on the affective
497 portion of attitude (Dixon, 2002; Lim et al., 2010; Mahony & Howard, 1998; Mahony &

498 Moorman, 1999; 2000; McCabe 2008; 2011) and ignores the cognitive aspects. The current
499 study incorporated both affective and cognitive components of attitude in the Attitude Towards
500 Women's Sports scale for a few reasons. First, inclusion of both cognitive and affective aspects
501 of attitudes provides a more complete picture of how the women's sports products are evaluated
502 by its consumers. Secondly, both cognitive and affective factors were positively correlated with
503 the fans' consumption intentions; therefore, both components have potential to predict fans'
504 consumption. Lastly, several of the cognitive factors can be targeted by sport marketers.
505 Therefore the investigation of both cognitive and affective components of attitude has the
506 potential to extend our understanding of fan behavior in sport marketing. The current study
507 provides a psychometrically sound measure of fan attitude to utilize in future research of this
508 nature.

509 **Practical implications**

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

516 The ATWS scale could also be used in identifying cognitive and affective evaluations of
517 the product. Specifically, understanding spectators' and fans' cognitive evaluations of women's
518 sports would allow marketers to identify salient product attributes and positive-negative
519 evaluations of these attributes. This information is of the utmost importance since consumers
520 evaluate products in terms of the potential to fulfill their needs and achieve their ideal self-

521 concept (Hawkins et al., 2007). Understanding what matters to the consumers of women's sports
522 would allow marketers to develop purposeful marketing activities which may induce
523 consumption.

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

533 **Limitations**

534 The present study developed an instrument to measure attitudes towards women's sports.
535 Unlike previous studies, the present study was: based on a theoretical framework of attitude;
536 APA, AERA, NCME (2008) guidelines were followed in instrument development; and, validity
537 and reliability evidence for the resultant scale was examined. Therefore, the process and
538 resulting evidence was a successful outcome for the present study. However, no study is free of
539 limitations. Generalizability of the study results may be limited. Since the purpose of the study
540 was to develop a survey instrument, participants of the study were chosen purposefully. For the
541 second pilot study and phase two, women's sports fans were chosen as informants, because the
542 attitude literature suggested using a sample that is likely to consist of individuals who have
543 developed attitudes on the topic in the measure development stage (Fishbein & Ajzen, 1975).

544 Participants of the present study clearly hold highly positive attitudes towards their favorite
545 women's sports. However, they were recruited via a non-probabilistic sampling method which
546 may restrict the generalizability to other populations of interest.

547 **Future Recommendations**

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

560 **Conclusion**

561 The purpose of the study was to develop a general Attitude Towards Women's Sport
562 scale that could be used to examine attitudes towards any women's sports. Various validity and
563 reliability evidence were sought in the study throughout the development of the final Attitude
564 Towards Women's Sport scale to support score interpretation derived from the scale. Supporting
565 validity evidences were collected for test content, internal structure, and relationship to other
566 variables. Results also revealed strong reliability for the scores of the ATWS scale. Further

567 research should be conducted to improve the content of the current scale by focusing on sport
568 specific analysis, and the scale should also be tested with other populations.

569

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