Marketing murderball: the influence of spectator motivation factors on sports consumption behaviours of wheelchair rugby spectators

Keywords

Adaptive sports
Motivation
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Abstract

This study examines the relationship between spectator motivation and sports consumption behaviours in the context of an adaptive sport. Respondents were spectators from five matches held in the Midwest United States involving registered United States Quad Rugby Association teams. The Motivation Scale for Sport Consumption (MSSC; Trail & James, 2001) was adapted to measure spectator motivation and predict repatronage intentions and online media consumption among wheelchair rugby spectators. Results indicated that two spectator motivation factors, physical skill and knowledge, were related to repatronage intentions. In addition, knowledge and vicarious achievement were found to be related to online media consumption.

Executive summary

Spectator motivation has been consistently found to be one of the most salient variables affecting sport spectator consumption behaviours (e.g. Funk, Mahony & Ridinger, 2002; Trail, Fink & Anderson, 2003). Spectator motivation has been studied in a number of contexts, including women's professional basketball (Funk, Ridinger & Moorman 2003), professional baseball (Trail & James, 2001) and men's professional basketball (Pease & Zhang, 2001) as well as new domains such as mixed martial arts (Andrew, Kim, O'Neal, Greenwell & James, 2009; Kim, Andrew & Greenwell, 2009) and soccer and ski-jumping (Mehus, 2005). To date, research has focused primarily on non-adaptive sports. Therefore, a need exists to examine spectators of adaptive sports to better understand this population. The current study

was designed to examine the relationships between spectator motivation and sports consumption behaviours, repatronage intentions and online media consumption in the context of wheelchair rugby events.

Respondents were spectators from five matches involving registered United States Quad Rugby Association (USQRA) teams held in the Midwestern United States. Data were collected using a random cluster sampling technique to include a variety of spectators.

After removing unusable data, 105 questionnaires were found to be useable for data analyses. The modified version of the Motivation Scale for Sport Consumption (MSSC; Trail & James, 2001) was used to measure spectator motivation. A total of seven factors were included in the MSSC: (a) achievement, (b) knowledge, (c) aesthetics, (d) drama, (e) escape, (f) physical skill and (g) social interaction. To better understand how spectator motivation could explain sports consumption behaviours, two behavioural loyalty constructs were measured, including repatronage intentions (Söderlund, 2006) and online media consumption, which was adapted from Fink, Trail and Anderson (2002).

A Confirmatory Factor Analysis (CFA) was employed to examine the psychometric properties of the MSSC. In addition, two multiple regression analyses were conducted to examine the relationships between spectator motivation factors and sports consumption behaviour factors. The CFA results indicated that the MSSC demonstrated sound psychometric properties in the wheelchair rugby setting. The results of the multiple regression analyses indicated that physical skill and knowledge motivation factors were statistically significant predictors of repatronage intentions. In addition, knowledge and vicarious achievement factors contributed to predicting online media consumption.

The results of this study have the potential to benefit the wheelchair rugby teams and league, which often operate with limited marketing budgets. Suggestions for practitioners to increase repatronage intentions are as follows. With respect to the physical skill motivation factor, wheelchair rugby organisers should recruit teams to compete based more on their skill level than geographical convenience. With respect to the knowledge motivation factor, event organisers should consider providing an information booklet that includes a short explanation of the rules of the sport, an explanation of the disability classification system and an introduction to the athletes on the home team. In addition, event organisers should consider providing 'fan days' in which fans can try the wheelchairs and play the sport, to increase their tactile knowledge of the game.

Finally, with respect to online media consumption, knowledge can be increased by developing short educational vignettes strategically placed on websites to educate prospective fans. With respect to the vicarious achievement factor, more wheelchair rugby teams should develop team websites and consider using social networking sites to develop various groups to provide information and foster fan identification with the team.

Introduction

Over the past decade various sports marketing studies have been conducted to investigate factors affecting sports consumption behaviours. Through these studies a number of factors have been identified as influencing variables. These include, but are not limited to, motivation (e.g. Trail & James, 2001; Wann, 1995), fan identification (e.g. Wann & Branscombe, 1993) and market demand (e.g. Byon, Zhang & Connaughton, 2010; Theodorakis & Alexandris, 2008). Of these, motivation has been consistently found to be one of the most salient variables affecting sports spectator consumption behaviours (e.g. Fink, Trail & Anderson, 2002a; Funk, Mahony & Ridinger, 2002; Wann, Schrader & Wilson, 1999).

Over the past decade much effort has been made to understand spectator motivation, resulting in various scale developments, including the Sport Fan

Motivation Scale (SFMS; Wann, 1995; Wann et al, 1999), the Spectator Motivation Scale (SMS; Pease & Zhang, 2001), the Motivation Scale for Sport Consumption (MSSC; Trail & James, 2001) and the Sport Interest Inventory (SII; Funk et al, 2002; Funk, Ridinger & Moorman, 2003). Recently, new spectator motivation scales have been developed in somewhat unexplored domains, including mixed martial arts (Andrew et al, 2009; Kim et al, 2009), soccer (Mahony, Nakazawa, Funk, James & Gladden, 2002; Mehus, 2005; Neal & Funk, 2006), ski-jumping (Mehus, 2005), sport video games (Kim & Ross, 2006) and Australian Rules Football (Funk, Filo, Beaton & Pritchard, 2009).

Thus far, studies of spectator motivation have solely been applied to non-adaptive spectator sports. Moreover, the majority of extant literature on adaptive sports has focused on participants. Currently, the research that exists on adaptive sports can be classified into four categories:

i) psychological studies specific to athletes with disabilities (e.g. Anderson, Wozencroft & Bedini, 2008);
ii) psychological studies that examine participant motives in non-adaptive athletics to determine applicability to adaptive sports (e.g. Perrault & Marisi, 1997);
iii) physiological studies related to disability or physical characteristics that are disability-specific such as disability classification and physical function of athletes (e.g. Vanlandewijck et al, 2004); and
iv) comparison of physiological effects between adaptive sports and non-adaptive sport participants (e.g. Brown, Knowlton, Hamill, Schneider & Hetzler, 1990).

So far, industry practitioners have focused their resources on recruiting more athletes for the purposes of increased visibility of their sport. According to budget reports, the United States Quad Rugby Association (USQRA) has chosen to focus efforts and financing on player recruitment and development rather than on marketing the sport to the general public. During the 2008-09 season, USQRA had a total income of $98,397 and only spent $3,599 on marketing; in the 2009-10 budget, the marketing allotment actually shrank to $287 (USQRA 2008-09; USQRA 2009-10). While elite and developmental wheelchair rugby and post-season funding have received the lion's share of funding from USQRA, in many regions the sport is "dissolving due to lack of publicity and funding" (Eleftheriou, 2005, p.105).

Wheelchair rugby event coordinators have made a strategic decision to not charge an entrance fee for fans, to increase attendance and the visibility of the sport. Because of this decision, there are no hard figures on the numbers of fans attending events, but USQRA President James Gumbert (personal communication, 2 December 2009) stated that event attendance ranges from several dozen to approximately 1,000 at well attended events. Because of the small attendances at each event, the International Wheelchair Rugby Federation (IWRF) has had significant challenges finding sponsorship (IWRF, 2008) and all USQRA post-season sponsors are related to disability in some fashion (e.g. wheelchair manufacturers and medical supply companies), meaning that sponsors are targeting the participants rather than the spectators. As a result, IWRF has decided that developing a strong fan base to attract additional sponsors will be a top priority (IWRF minutes, 2010).

While those in attendance at wheelchair rugby tournaments may not currently represent a viable fan base, there is evidence that adaptive sport in general does have potential for a viable market. According to the International Paralympic Committee Annual Report (2008), approximately 3.4 million spectators who had never attended an adaptive athletic event attended one or more Paralympic events. In addition, the website hosting the Beijing Paralympic Games received more than 3.8 billion hits worldwide.

Researchers have also recognised the potential for promotion of wheelchair rugby to a larger fan base. Gard and Fitzgerald (2008, p.137) stated of

murderball that "[with] the right marketing, disabled people can be sport megastars too... The message is that this sport is 'hot' and people really are excited about it". With such a limited budget for sports promotion, USQRA has not been able to adequately target and promote their events to perspective fans.

As wheelchair rugby looks to focus its efforts on increasing the fan base, there is an acknowledgement from IWRF that the association needs marketing direction (IWRF minutes, 2010). To this end, a systematic evaluation of fans of wheelchair rugby events is needed to better understand game consumption behaviours. This will help marketers to improve the quality of their product offering and formulate an effective marketing strategy to retain existing fans and attract more spectators.

There has also been a lack of scholarly attention to consumption behaviours of spectators of adaptive sports. Only one empirical study has examined the relationships between spectator motivation and sports consumption behaviours for wheelchair basketball events (Byon, Cottingham, Grady, Mohn & Carroll, 2009). Employing Trail and James' (2001) MSSC to measure spectator motivation, Byon et al (2009) found that spectator motivation factors predicted sports consumption behaviours (i.e. merchandise consumption, online media consumption and repatronage intentions). Further research is needed to aid academics and practitioners in better understanding spectator consumption behaviours in adaptive sports. Therefore, the current study was designed to (a) examine the applicability of the MSSC to wheelchair rugby events, and (b) investigate the relationships between spectator motivation factors and two sports consumption behaviour factors – repatronage intentions and online media consumption.

Spectator motivation and sports consumption behaviours

Over the past decade, numerous studies on spectator motivation have been conducted to examine its predictability of sports consumption behaviours, including game attendance (e.g. Funk et al, 2009; Mahony et al, 2002; Pease & Zhang, 2001), media consumption (e.g. Andrew et al, 2009; Kim et al, 2009), merchandise consumption (e.g. Andrew et al, 2009), team commitment (e.g. Funk et al, 2009), sport fandom (e.g. Wann et al, 1999) and team identification (e.g. Fink et al, 2002a). Previous spectator motivation studies indicate that spectator motivation is an important predictor of past and future attendance behaviour (Funk et al, 2009; Mahony et al, 2002; Pease & Zhang, 2001). Using NBA spectators, Pease and Zhang (2001) found that spectator motivation factors were significantly associated with attendance behaviour.

Mahony et al (2002) found that 15% of the variance in attendance was explained by several motivation factors for Japanese Professional Soccer league spectators. In a study examining gender differences within intercollegiate basketball attendance, Ridinger and Funk (2006) found that 18% of the variance in attendance behaviour was explained by spectator motivation factors for fans at men's basketball events, and 14% of the variance in attendance behaviour was explained by spectator motivation factors in women's basketball events. Neal and Funk (2006) found that approximately 19% of the variance in behavioural loyalty among Australian Rules Football fans was explained by spectator motivation factors.

Recently, Funk and colleagues (2009) examined the effect of spectator motivation on past attendance behaviour utilising a parsimonious five factors with a 10-item scale. Three motivation factors (performance, esteem and excitement) were found to contribute to past attendance behaviour.

In the only relevant sports marketing study on adaptive sport involving spectators of wheelchair basketball events, Byon et al (2009) found that spectator motivation factors (i.e. escape, knowledge and physical skill) were significant predictors of repatronage intentions, accounting for 54% of the variance. Reviewing findings of previous empirical studies led to the following hypothesis.

H1: Spectator motivation is positively associated with repatronage intentions of wheelchair rugby spectators.

Spectator motivation has explained a significant amount of variance in media consumption behaviour, ranging from 39% (Andrew et al, 2009) to 56% (Kim et al, 2009). In a spectator motivation study involving mixed martial arts events, Kim et al (2008) found that 53% of the variance in media consumption was explained by spectator motivation factors for male spectators and 40.5% of the variance was explained for female spectators, indicating that spectator motivation is a major driving force of media consumption behaviour. In a follow-up study, Andrew and his associates (2009) found similar results with different motivation factors that influenced media consumption. The results of the study indicated that 39% of the variance for males and 41% for females were explained by media consumption. The authors asserted that the differential effect of motivation factors between the two studies was attributed to contextual differences, as one was a professional event and the other was amateur.

To examine cross-cultural differences in motivation as it pertains to influencing media consumption, Kim et al (2009) collected date from mixed martial arts events in South Korea and the United States. Consistent with previous studies, the authors found that spectator motivation was significantly associated with media consumption, explaining 49% of the variance for the US group and 56% of the variance for the South Korean group. Byon et al (2009) found that two motivation factors, including achievement and knowledge, were significantly related to online media consumption for spectators of wheelchair basketball events, accounting for 46% of the variance. These findings led to the following hypothesis.

H2: Spectator motivation is positively associated with online media consumption of wheelchair rugby spectators.

Methodology

Wheelchair rugby

Wheelchair rugby is played from a wheelchair by those classified as having some level of disability in three or more limbs. The sport is played four on four on a basketball court, where the object is to carry a ball the approximate size and texture of a volleyball over a goal line and score. It is unique in that to stop a player from scoring, full contact in front of the wheelchair axle is allowed.

Wheelchair rugby, unlike other adaptive sports (e.g. wheelchair tennis), bears little resemblance to its non-adaptive counterpart (rugby), finding its beginnings in the frustration of persons with quadriplegia playing wheelchair basketball. In the early years of wheelchair basketball, these athletes played against those with substantially more function. As wheelchair basketball became more competitive, persons with quadriplegia elected to create a sport to better fit their physiology. The sport existed in obscurity for many years with a small fan base primarily consisting of friends, family and fellow athletes.

This changed in 2005 with the release of the academy award nominated documentary Murderball, which chronicled former US national team member Joe Sorres as he coached the Canadian national team against his former American team-mates. Gard and Fitzgerald's (2008, p.138) thematic movie critique of Murderball stated: "Sex, masculinity, hyper-aggressive competition and media stardom come together to construct a disabled athlete who claims both elements of elite sport's macho past and a popular-culture future for disability sport". The sport capitalised on the success of Murderball by increasing participation through developing new participants and teams.

With full chair contact as the main component of the sport, the name 'murderball' was selected to present an aggressive image. Initially, the goal was simply to 'murder' or attack the player with the ball, but as the sport spread to major cities like Los Angeles, product developers and rehabilitation facilities had no interest in sponsoring a sport with such a

name, as many of the athletes had themselves been injured through violent acts. The sport was re-named 'quad rugby', with quad representing the participants (persons with quadriplegia) and rugby representing the violent nature of the sport itself, which resembles the contact associated with traditional non-adaptive rugby (History, n.d., para. 2). Although referred to as quad rugby in the US, internationally the sport is known as wheelchair rugby. In 1993 the International Wheelchair Rugby Federation (IWRF) was established and wheelchair rugby was recognised as an official sport (IWRF.com, 2010).

Participants

Respondents were spectators from five matches held in the Midwestern United States involving registered USQRA teams. Participation in the survey was voluntary, and respondents had to be 18 or older. Of the sample, approximately 60% were female and 40% male. Nearly 70% of the respondents were between 18 and 40, and approximately 17% were over 50 years old, showing a diverse sample. A majority of the respondents (62.4%) reported an annual household income of over $40,000, with 30.1% of the respondents earning a yearly income of over $80,000. With regard to education, a majority of the respondents were well educated, with 85.3% possessing at least some college experience and 24.5% holding an advanced degree. The sample was predominantly White/Non-Hispanic (84.3%). Only 5.8% of the respondents stated that they had a disability, meaning that the tournament drew predominantly non-adaptive spectators. However, over half of the spectators (53.9%) stated that they had either a friend or family member who had a disability (Table 1). Based on the results, demographic characteristics of spectators in the wheelchair rugby events were as follows: (a) female-dominant, (b) possession of high income and education, (c) Caucasian-dominant, and (d) those without disability but with connections to the disability community through friends or family. These characteristics were consistent with those of wheelchair basketball spectators (Byon et al, 2009).

Measures

In this study, the MSSC (Trail & James, 2001) was adapted to measure spectator motivation. Nine factors were originally proposed in the MSSC: vicarious achievement, knowledge, aesthetics, drama, escape, physical skill, social interaction, family and physical attraction. However, two factors (family and physical attraction) were removed from the current study because previous research (Fink et al, 2002; Robinson & Trail, 2005) had found that the family factor had low correlations with other motives, and USQRA requested that the physical attraction factor not be used. The MSSC was used because it has been consistently found to be reliable and valid in various sports settings (α=.72 to .93; AVE=.50 to .83; Robinson & Trail, 2005; Trail, Robinson, Dick & Gillentine, 2003; Woo et al, 2009) and has shown sound psychometric properties and utility in wheelchair basketball events (α=.76 to .87; AVE=.53 to .70; Byon et al, 2009). Each factor in the scale contained three items and all seven factors were measured on a 7-point Likert scale, ranging from 1=strongly disagree to 7=strongly agree.

To understand how spectator motivation influences sports consumption behaviours, two behavioural loyalty constructs were measured that included three items of repatronage intentions (Söderlund, 2006) and a single-item measure of online media consumption, adapted from Fink, Trail and Anderson (2002b). The reason that the single item was used to measure online media consumption was because wheelchair rugby games were not broadcast via network or cable television in the United States. Due to this limitation in access to information for interested spectators, a single-item measure was warranted. For sampling description, various sociodemographic information was measured, including gender, age, income, education, ethnicity, disability identification and personal relationship to disability.

TABLE 1 Frenquency distributions for the sociodemographic variables (N=105)

VARIABLE	CATEGORY	FREQUENCY (N=105)	% VALID
GENDER	MALE	41	40.2
	FEMALE	61	59.8
	GENDER TOTAL	102	100
AGE	18-22 YRS	18	17.8
	23-30	32	31.7
	31-40	22	21.8
	41-50	11	10.9
	51-65	11	10.9
	66+	7	6.9
	AGE TOTAL	101	100
HOUSEHOLD INCOME	BELOW $20,000	27	29
	$20,000-39,999	8	8.6
	$40,000-59,999	21	22.6
	$60,000-79,999	9	9.7
	$80,000-99,999	12	12.9
	$100,000-149,999	7	7.5
	$150,000-199,999	5	5.4
	ABOVE $200,000	4	4.3
	INCOME TOTAL	93	100
EDUCATION	HIGH SCHOOL GRADUATE	15	14.7
	IN COLLEGE NOW	18	17.6
	SOME COLLEGE	9	8.8
	COLLEGE GRADUATE	35	34.3
	ADVANCED DEGREE	22	21.6
	OTHER	3	2.9
	EDUCATION TOTAL	102	100
ETHNICITY/RACE	CAUCASIAN	86	84.3
	AFRICAN AMERICAN	1	1
	HISPANIC	3	2.9
	ASIAN/PACIFIC ISLANDER	3	2.9
	NATIVE AMERICAN	4	3.9
	INTERRACIAL	1	1
	OTHER	4	3.9
	ETHNICITY/RACE TOTAL	102	100
DO YOU HAVE A DISABILITY?	YES	6	5.8
	NO	97	94.2
	DISABILITY TOTAL	103	100
FRIEND OR FAMILY MEMBER HAVE A DISABILITY	YES	55	53.9
	NO	47	46.1
	FRIEND/FAMILY DISABILTIY TOTAL	102	100

Procedures

Following the development of the questionnaire, it was submitted to a panel of three experts for content validity testing that included one sports management professor and two practitioners within USQRA. After feedback, minor changes were made for word clarity and item adequacy. Using random cluster sampling, 30 questionnaires were distributed at each of five games in a two-day period. A total of 127 were returned, representing a return rate of 84.6%. In accordance with Zhang, Pease and Hui (1996), questionnaires with more than 10% of the responses missing were discarded, yielding a total of 105 questionnaires for analysis.

Data analyses

Procedures in SPSS 17.0 were carried out to calculate descriptive statistics for sociodemographic, spectator motivation, repatronage intentions and online media consumption factors. To examine the factor structure of the MSSC, CFA was employed using Maximum Likelihood (ML) estimation via Amos 17.0. A covariance matrix was used as a data input method. Following the suggestions of previous studies (e.g. Hair, Black, Babin & Anderson, 2010), multiple goodness-of-fit measures were adopted (i.e. X^2, X^2/df, RMSEA and CFI). In terms of cut-off values, a statistically non-significant X^2 value is desired (Hair et al, 2010). According to Bollen (1989), cut-off values of less than 3.0 for the X^2/df are considered reasonable fit. A RMSEA value of .06 or less indicates a close fit. Any values of RMSEA over .10 indicate poor fit (Hu & Bentler, 1999). A rule of thumb for CFI is that any value larger than .90 indicates an acceptable fit.

Three tests were employed to measure the reliability of the scales: Cronbach's coefficient alpha (α), construct reliability (CR) and average variance extracted (AVE). The cut-off values of .70 were adopted for α and CR (Fornell & Larcker, 1981; Nunnally & Bernstein, 1994). The benchmark value for AVE was equal to or greater than .50 (Bagozzi & Yi, 1988). Convergent validity and discriminant validity tests were conducted to determine construct validity of the MSSC. To determine convergent validity, indicator loadings and statistically significant z-values were evaluated following the recommendation of Hair et al (2010), who suggested that convergent validity is evidenced when all indicator loadings are statistically significant with an item loading equal to or greater than .50 at a minimum, with an ideal loading of .70 or higher. According to Kline (2005), discriminant validity can be established when interfactor correlations are below .85. The Fornell and Larcker's test (1981) is more stringent, in which a squared correlation between two constructs should be lower than the AVE value for any one of the two constructs.

Upon completion of the psychometric properties test of the MSSC, two simultaneous multiple regression analyses were conducted to examine the relationships between spectator motivation factors and sports consumption behaviours factors. The seven spectator motivation factors were treated as independent variables (IVs) and repatronage intentions and online media consumption were used as dependent variables (DVs). Composite scores were created for all multi-item measures (i.e. motivation and repatronage intentions).

Results

Descriptive statistics

Descriptive statistics including means and standard deviations of all variables are presented in Table 2. In terms of means and standard deviations for spectator motivation factors, physical skill (M=6.14, SD=1.04) was found to be the most important motivation for spectators of wheelchair rugby games. This indicated that well executed performance and physical skills of wheelchair rugby players were highly considered when consuming this wheelchair rugby event. For the sports consumption behaviour factors, repatronage intentions (M=5.49, SD=1.33) was rated the highest, followed by online media consumption intentions (M=3.76, SD=1.83). Descriptive statistics indicated that all

TABLE 2 Descriptive statistics for the spectator motivation and sports consumption factors (N=105)

VARIABLE			M	SD
1.	(DRA 1)	I ENJOY THE DRAMA OF A CLOSE GAME	6.2900	1.04442
2.	(DRA 2)	I PREFER A CLOSE GAME RATHER THAN AN ONE-SIDED GAME	6.1553	1.15264
3.	(DRA 3)	A GAME IS MORE ENJOYABLE TO ME WHEN THE OUTCOME IS NOT DECIDED UNTIL THE VERY END	5.8725	1.24018
4.	(AES 1)	I APPRECIATE THE BEAUTY INHERENT IN THE GAME	5.1961	1.58607
5.	(AES 2)	THERE IS A CERTAIN NATURAL BEAUTY TO THE GAME	5.5000	1.39624
6.	(AES 3)	I ENJOY GRACEFULNESS ASSOCIATED WITH THE GAME	5.1553	1.68475
7.	(ACH 1)	I FEEL LIKE I HAVE WON WHEN MY TEAM AS WON	5.2157	1.51969
8.	(ACH 2)	I FEEL A PERSONAL SENSE OF ACHIEVEMENT WHEN MY TEAM DOES WELL	4.7426	1.62267
9.	(ACH 3)	I FEEL PROUD WHEN MY TEAM DOES WELL	5.0882	1.45631
10.	(ESC 1)	GAMES REPRESENT AN ESCAPE FOR ME FROM MY DAY-TO-DAY ACTIVITY	4.7941	1.77629
11.	(ESC 2)	GAMES ARE A GREAT CHANGE OF PACE FROM WHAT I REGULARLY DO	5.1650	1.40096
12.	(ESC 3)	I LOOK FORWARD TO THE GAMES BECAUSE THEY ARE SOMETHING DIFFERENT TO DO	5.3960	1.24963
13.	(SOC 1)	INTERACTING WITH OTHER FANS IS A VERY IMPORTANT PART OF BEING AT GAMES	4.0693	1.63864
14.	(SOC 2)	I LIKE TO TALK TO OTHER PEOPLE SITTING NEAR ME DURING A GAME	5.1068	1.50758
15.	(SOC 3)	GAMES ARE GREAT OPPORTUNITIES TO SOCIALISE WITH OTHER PEOPLE	5.2816	1.43087
16.	(KNO 1)	I KNOW THE NAMES OF THE PLAYERS ON THE TEAM/BEST PLAYERS ON THE TEAM	3.3786	2.02976
17.	(KNO 2)	I USUALLY KNOW THE TEAMS WIN/LOSS RECORD	2.8416	1.89596
18.	(KNO 3)	I KNOW THE RULES OF WHEELCHAIR RUGBY	4.1188	1.71048
19.	(SKI 1)	WATCHING A WELL-EXECUTED ATHLETIC PERFORMANCE IS SOMETHING I ENJOY	6.2596	1.21476
20.	(SKI 2)	I ENJOY A SKILLFUL PERFORMANCE BY THE TEAM	5.9806	1.14601
21.	(SKI 3)	THE PHYSICAL SKILLS OF THE PLAYERS ARE SOMETHING I APPRECIATE	6.2039	1.19934
22.	(REP 1)	I AM LIKELY TO RE-ATTEND GAMES NEXT TIME THIS EVENT IS HELD	5.1275	1.64510
23.	(REP 2)	I HAVE A HIGHT LIKELIHOOD OF RE-ATTENDING THE NEXT GAME WHEN IT IS HELD	5.2178	1.62852
24.	(REP 3)	THE PROBABILITY THAT I WILL RE-ATTEND A WHEELCHAIR RUGBY EVENT IS HIGH	6.0392	1.39959
25.	(MED 1)	I AM LIKELY TO FOLLOW THE RESULTS OF THIS TEAM ONLINE WHEN I AM UNABLE TO ATTEND	3.7600	1.82641

Note. DRA = drama; AES = aesthetics; ACH = vicarious achievement; ESC = escape; SOC = social interaction; KNO = knowledge; SKI = physical skill; REP = repatronage intentions; and MED = online media consumption

variables of spectator motivation except knowledge had a mean score greater than 4.0 (i.e. mid-point on the 7-point Likert scale), indicating that overall, spectator motivation variables were deemed important when making a decision to consume wheelchair rugby games. Furthermore, mean scores of repatronage intentions and online media consumption indicated that spectators had higher desire to re-attend the events but less of a desire to consume the events via an online media outlet.

Confirmatory Factor Analysis

Examined by multiple model fit indexes, a seven-factor spectator motivation model fit the data well (X^2=260.69, $p < .001$; X^2/df=1.55, CFI=.91 and RMSEA=.073, 90% CI=.055 - .090). Examination of parameter estimates revealed that all factor loadings were statistically significant ($p < .001$) with z scores ranging from 4.80 (knowledge 3) to 8.70 (aesthetics 2). In addition, all standardised loadings were greater than .50 (Hair et al, 2010) except for one item

TABLE 3 Correlations among the apectator motivation factors and sports consumption factors

FACTORS	DRAMA	ACHIEVE	SKILL	ESCAPE	AESTHETICS	SOCIAL	REPATRONAGE	MEDIA
DRAMA	1							
ACHIEVE	.403**	1						
SKILL	.631**	.371**	1					
ESCAPE	.360**	.618**	.509**	1				
AESTHETICS	.422**	.606**	.610**	.626**	1			
SOCIAL	.388**	.344**	.432**	.642**	.455**	1		
REPATRONAGE	.343**	.445**	.525**	.544**	.422**	.429**	1	
MEDIA	.179	.593**	.329**	.486**	.538**	.311**	.536**	1

Note. Achieve = vicarious achievement; Skill = physical skill; Social = social interaction; Repatronage = repatronage intentions; and Media = online media consumption. ** $p < .01$

("I know the rules of wheelchair rugby"), with a factor loading of .49. The decision was made to retain this item because it met one of the retention criteria (i.e. statistically significant). Overall, the seven-factor spectator motivation model showed good model fit and convergent validity.

Examination of the interfactor correlations revealed that all correlations were below .85, ranging from .34 (between social interaction and vicarious achievement) to .63 (between physical skill and drama). The Fornell and Larcker's (1981) test found that all squared correlations in the scale were less than the AVE values for each respective construct, indicating good discriminant validity (See Tables 3 and 4).

As shown in Table 4, the Cronbach's values exceeded the threshold of .70, ranging from .74 (skill) to .83 (aesthetics). The CR values were also shown to be excellent, ranging from .77 (drama) to .84 (aesthetics). The AVE values were all greater than .50, ranging from .53 (drama) to .63 (aesthetics). As a result of the CFA, it can be concluded that the seven-factor model was found to be valid and reliable in a wheelchair rugby setting.

Hypothesis testing

Using the forced entry method (Studenmund & Cassidy, 1987), a total of two multiple regression analyses were conducted to examine the relationships between spectator motivation and sports consumption behaviours. To check the assumption of independent errors, the Durbin-Watson statistic was evaluated. Values less than 1 or greater than 3 should indicate that the assumption would be violated (Field, 2009). The regression model yielded 1.91, which indicated that the assumption was met. The assumption of multicollinearity was assessed through evaluating tolerance and Variance Inflation Factor (VIF) scores. Menard (1995) suggested that a tolerance score less than 0.2 would be a problematic, and Bowerman and O'Connell (1990) suggested that if the VIF score is greater than 10, there is a concern for multi-collinearity. For the current model, tolerance statistics ranged from .37 (escape) to .63 (knowledge), and VIF values ranged from 1.60 (knowledge) to 2.67 (escape), indicating that all values were well within the suggested criteria. Thus, it was appropriate to proceed with the multiple regression analyses.

TABLE 4 Indicator loadings, Z-scores, Cronbach's alpha, construct reliability, average variance extracted for the spectator motivation factors and sports consumption factor

	INDICATOR LOADINGS	Z SCORES	CRONBACH'S ALPHA
DRAMA			0.78
I ENJOY THE DRAMA OF A CLOSE GAME	0.80		
I PREFER A CLOSE GAME RATHER THAN AN ONE-SIDED GAME	0.65	6.34	
A GAME IS MORE ENJOYABLE TO ME WHEN THE OUTCOME IS NOT DECIDED UNTIL THE VERY END	0.71	6.96	
AESTHETICS			0.83
I APPRECIATE THE BEAUTY INHERENT IN THE GAME	0.75		
THERE IS A CERTAIN NATURAL BEAUTY TO THE GAME	0.88	8.70	
I ENJOY GRACEFULNESS ASSOCIATED WITH THE GAME	0.75	7.43	
VICARIOUS ACHIEVEMENT			0.78
I FEEL LIKE I HAVE WON WHEN MY TEAM AS WON	0.59		
I FEEL A PERSONAL SENSE OF ACHIEVEMENT WHEN MY TEAM DOES WELL	0.84	6.04	
I FEEL PROUD WHEN MY TEAM DOES WELL	0.81	5.94	
ESCAPE			0.78
GAMES REPRESENT AN ESCAPE FOR ME FROM MY DAY-TO-DAY ACTIVITY	0.72		
GAMES ARE A GREAT CHANGE OF PACE FROM WHAT I REGULARLY DO	0.77	7.26	
I LOOK FORWARD TO THE GAMES BECAUSE THEY ARE SOMETHING DIFFERENT TO DO	0.82	7.70	
SOCIAL INTERACTION			0.79
INTERACTING WITH OTHER FANS IS A VERY IMPORTANT PART OF BEING AT GAMES	0.83		
I LIKE TO TALK TO OTHER PEOPLE SITTING NEAR ME DURING A GAME	0.69	6.76	
GAMES ARE GREAT OPPORTUNITIES TO SOCIALISE WITH OTHER PEOPLE	0.69	6.82	
KNOWLEDGE			0.76
I KNOW THE NAMES OF THE PLAYERS ON THE TEAM/BEST PLAYERS ON THE TEAM	0.92		
I USUALLY KNOW THE TEAMS WIN/LOSS RECORD	0.77	7.71	
I KNOW THE RULES OF WHEELCHAIR RUGBY	0.49	4.80	
PHYSICAL SKILL			0.74
WATCHING A WELL-EXECUTED ATHLETIC PERFORMANCE IS SOMETHING I ENJOY	0.69		
I ENJOY A SKILLFUL PERFORMANCE BY THE TEAM	0.75	6.76	
THE PHYSICAL SKILLS OF THE PLAYERS ARE SOMETHING I APPRECIATE	0.83	7.39	
REPATRONAGE INTENTIONS			0.83
I AM LIKELY TO RE-ATTEND GAMES NEXT TIME THIS EVENT IS HELD	0.87		
I HAVE A HIGHT LIKELIHOOD OF RE-ATTENDING THE NEXT GAME WHEN IT IS HELD	0.82	7.80	
THE PROBABILITY THAT I WILL RE-ATTEND A WHEELCHAIR RUGBY EVENT IS HIGH	0.70	7.65	

TABLE 5 Multiple regression analyses examining the relationship between the spectator motivation factors and sports consumption factors

CONSUMPTION FACTORS	PREDICTORS	B	SE.B	R2	△R2	β	*t*	*p*
REPATRONAGE INTENTIONS				0.44	0.40			
	PHYSICAL SKILL **	0.52	0.15			0.40	3.39	0.001
	KNOWLEDGE**	0.26	0.08			0.30	3.06	0.003
ONLINE MEDIA CONSUMPTION				0.51	0.47			
	KNOWLEDGE ***	0.46	0.11			0.38	4.15	0.001
	VICARIOUS ACHIEVEMENT *	0.35	0.16			0.24	2.14	0.035

Note. * $p < .05$;** $p < .01$; *** $p < .001$

First, using the seven motivation factors as IVs and repatronage intentions as the DV, the multiple regression revealed that the overall model was statistically significant $F(7, 94)=10.69$, $p< .001$, accounting for 40% of the variance in repatronage intentions by the model ($\triangle R^2=.40$). According to Cohen (1988), this is a large effect size. Results of the model parameter indicated that physical skill ($\beta=.40$, $p< .01$) and knowledge ($\beta= .30$, $< .01$) were statistically significant predictors of repatronage intentions. Therefore, research hypothesis 1 was supported.

A second multiple regression using the seven motivation factors as the IVs and online media consumption as the DV revealed that the combination of variables significantly predicted online media consumption $F(7, 91)=13.56$, $p< .001$, accounting for 47% of the variance ($\triangle R^2= .47$) by the model, which is a large effect size (Cohen, 1988). The Durbin-Watson statistic, which was 1.64, indicated that the assumption of independent errors was tenable. In addition, there was no multicollinearity in the regression model as the tolerance statistics (.38 - .63) and VIF values (1.58 - 2.62) were well within the thresholds. The beta weight indicated that knowledge ($\beta=.38$, $p< .001$) contributed most to predicting online media consumption, followed by vicarious achievement ($\beta=.24$, $p< .05$). Thus, research hypothesis 2 was supported. The results of the multiple regression are presented in Table 5.

Discussion

The objectives of the current study were to examine the applicability of the MSSC to wheelchair rugby events and to examine the relationships between spectator motivation and sports consumption behaviours. The discussion is presented in the following four sections: scale applicability, hypothesis testing, marketing implications and limitations and directions for future research.

Scale applicability

Despite the increasing popularity and consumption power for consumers of adaptive sports, systematic approaches to understanding spectators' consumption behaviours in adaptive sports have been scant. One of the primary reasons for this phenomenon may be due to the lack of available valid and reliable instruments that can be used by marketers of adaptive sports. To meet this need, Byon and his associates (2009) adapted an existing instrument (MSSC) to measure spectator motivation with regard to wheelchair basketball events. This attempt to use the MSSC was successful, as the scale was shown to have good psychometric properties. However, more replication studies were suggested because of the uncertainty regarding the scale's generalisability and the contextual differences among adaptive sports events. For example, the level of violence is quite different between wheelchair basketball and wheelchair rugby.

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Additionally, the disability-related criteria required for participation in wheelchair rugby is different than that of wheelchair basketball. Therefore, the current study was designed to examine the applicability of the MSSC to a wheelchair rugby setting.

Results of the CFA revealed that the MSSC functioned well, an optimistic sign for academics and practitioners who may be able to use this scale to enhance their understanding regarding important motivations for spectators of wheelchair rugby. It should be noted that although a relatively small sample size (N=105) was used to test the MSSC's applicability, the MSSC showed sound psychometric properties. The MSSC has now been shown to be applicable in two adaptive sports, wheelchair basketball and wheelchair rugby, but still must be tested in different adaptive sports settings such as wheelchair tennis, power soccer and goal ball to strengthen measurement generalisability.

Hypothesis testing

In addition to validating the MSSC, this study also examined the relative influences of spectator motivation factors on sports consumption behaviours. The results of the multiple regression tests revealed that the physical skill and knowledge factors were related to repatronage intentions, consistent with previous research (Byon et al, 2009; Funk et al, 2009; Pease & Zhang, 2001) that found physical skill and knowledge to be significant predictors of attendance behaviours. Similarly, Byon et al (2009) in their wheelchair basketball study found that physical skill, knowledge and escape were predictors of repatronage intentions, with physical skill and knowledge exhibiting stronger magnitudes than escape. These findings lend support to the notion that the psychological tendencies of spectators of adaptive sports may be more homogeneous than that of non-adaptive spectators, although such a claim would certainly necessitate research beyond these two studies. Mehus (2005, p.337) argued that in non-adaptive spectator motivation studies "motives vary between different social groups, according to sex, age and education. And these results appear somewhat inconsistent when comparing different studies". As mentioned in the methodology section, this study found demographic characteristics similar to those found in the previous wheelchair basketball study (Byon et al, 2009). It is therefore suggested that future studies continue to look into this aspect to examine whether spectators of adaptive sports share a certain measure of homogeneity, as this finding may have marketing implications.

An enormous number of people worldwide tuned in to the Beijing Paralympic Games (International Paralympic Committee Annual Report, 2008), indicating the growth in popularity and attention through media of adaptive sports. Because online media is the only available communication method for wheelchair rugby organisations in the US, understanding the factors that drive spectators to consume the sport via the internet is vital. Results of the multiple regression analysis indicated that knowledge and vicarious achievement were found to be related to online media consumption. This result was consistent with previous research findings (Andrew et al, 2009; Byon et al, 2009; Kim et al, 2008) and may be explained by a high level of spectator commitment and loyalty to wheelchair rugby. Researchers have suggested that consumers who were attracted by vicarious achievement and knowledge tend to be more highly identified with a team or sport (Trail, Robinson et al, 2003; Woo et al, 2009), a phenomena that may hold true in the wheelchair rugby context. Because wheelchair rugby suffers from a lack of exposure in the US, spectators tend to consist of core followers of a team or particular individuals and are consequently quite knowledgeable about the team, history and schedule. However, this speculation has not yet been empirically tested in the wheelchair rugby context, and thus it is suggested that future studies measure team identification to examine whether it moderates the relationships between spectator motivation and consumption behaviours. It should be noted that Byon et al (2009) found results consistent with the present study regarding the effect

of spectator motivation on online media consumption in the context of wheelchair basketball.

Marketing implications

Several marketing implications – sponsorship development, developing an educated fan base, developing an attractive product and increasing online market share – emerged from the results of this study.

Development of sponsorship

USQRA should develop additional revenue to fund marketing projects, and this money should come through sports sponsorship. USQRA must diversify and increase sponsorship. As stated previously, all USQRA post-season sponsors are disability related. This current study demonstrates that spectators of wheelchair rugby tend to be affluent, highly educated and non-adaptive. Efforts should be made to find sponsors interested in marketing to this demographic. While the numbers of live spectators at the 2010 Quad Rugby National Championships were only in the hundreds over the course of a weekend, USQRA president Ed Hooper reported that online streaming viewership had received 4,848 visits from 49 states and 33 countries (quadrugby.com, 2010). There is no reason to assume that these online spectators are any less affluent or educated than their counterparts who watched in person. The medical and wheelchair sponsorship market of wheelchair rugby is saturated, but there are no sponsors related to clothing, vehicles or any other mainstream products. Efforts should be made to develop official sponsors such as 'official vehicle of USQRA,' and these resources should in part be reinvested into marketing the product.

Developing a more educated fan base

Knowledge was shown to be the second most impactful factor in determining repatronage intentions and the most impactful factor in predicting online viewership. This result was consistent with the Byon et al (2009) study and illustrates the importance of this in the adaptive sports setting. While the items that make up the knowledge factor focus on knowledge related to players on the team and rules of the sport, knowledge can occur in three primary forms: (a) knowledge about the sport, including the rules and disability classification system; (b) knowledge of the players and team, including the identity of star players; and (c) personal/tactile understanding of the game itself (i.e. what the game feels like). Marketers should consider these various aspects of knowledge when developing a comprehensive marketing plan.

USQRA could develop an educational booklet explaining the rules of the sport and the disability classification system. A section of the booklet would be designed to introduce spectators to the athletes and their local programme. When season registration and fees are due, each team could then submit biographies of several of their athletes along with basic information on the local programme. USQRA could then assist in organising these data for specific tournaments and providing event coordinators with ready-made booklets for publication and dissemination. This information would explain exactly what the spectator should be observing, how to understand the roles of various players and the specific roles of each position.

This would help with education in a very practical sense, increasing fan knowledge. This expense would be minimal, and the information could be replicated in the future with minimal modification.

Knowledge may also occur in a very tactile form. The majority of those in attendance (90%) had never played wheelchair rugby competitively or recreationally. Efforts to develop fan experiences could benefit knowledge with respect to this tactile understanding of the sport. The following is an example of a marketing strategy used by a handful of USQRA teams who have reported positive fan feedback and success. Several times should be selected, preferably before or after well attended games, where spectators can go on the court in extra rugby chairs and play the sport. Players on teams not competing in an immediate game could engage with the spectators and play a slowed-down controlled scrimmage. In this way, potential fans can meet the

athletes, shake their hands (an important educational process in understanding the lack of grip unique to quadriplegic physiology) and engage in the sport itself. These processes may not only serve to educate fans on the sport but also on the understanding of the different types and levels of disabilities experienced by the athletes. Some teams have even engaged in outreach programs and demonstrations with elementary, middle and high schools to do educational exhibitions for promoting the local team and educating students on disability. These outreach programs could greatly increase knowledge, which may help to develop a future core fan base.

Developing a more compelling product
Wheelchair rugby matches often exhibit large margins of victory (i.e. blowouts). For example, the first 16 games of the 2010 Quad Rugby nationals only contained two games that had scores within four goals. Physical skill was the strongest predictor of repatronage intentions in the current study, and disparities in physical skill may detract from the spectator experience.

Considering financial limitations, many regular season games are scheduled according to team proximity rather than level of play. Despite the expense, some events such as the Demolition Derby, Best of the West and the University of Arizona Rugby Rage have focused on bringing in better teams, even at the risk of excluding regional programmes.

The Commissioner of USQRA has stated that typically these events are the most well attended (J. Gumbert, personal communication, 22 November 2009), so higher skill levels may make this product more marketable. Even if some matches end in blowouts at these elite events, the players typically have higher skill levels that may create more competitive contests for spectator enjoyment.

When a hosting team does not have a high skill level, efforts should be made to attract teams of equal skill to minimise the disparity of skill level.

Increasing and utilising online market share
The online dynamic
Due to limited travel budgets and wheelchair rugby events being tournament-format rather than single-home and away-game format, most teams only host a single annual event. For this reason, the best chance for fans to support their team is through online viewership. The benefit of online viewership is two-fold: first, spectators may globally view wheelchair rugby and have access to games with more ease than traditional means of television and radio; second, websites typically host game footage after they have been streamed live, meaning that sponsors may have spectators watching these videos for months following the live event. Thus the marketing impact of these events is less finite than that which is typically associated with traditional athletic events.

Improvement of online programming
Vicarious achievement and knowledge have been shown to be strong predictors of team and/or sport identification (Trail, Robinson et al, 2003; Woo et al, 2009). Because vicarious achievement may be difficult to foster in an online format, USQRA, event organisers and teams should work together to focus on team/sports identification and knowledge. Websites such as tampadigital.com provide a video of the sport, its history, rules and the classification system of disability that any spectator can view before or during the event they are watching. It is recommended that this be taken one step further: teams should develop short video biographies where online spectators can learn about a team, their star players and the strategies they employ, affording fans greater access to knowledge to better connect with a team.

Systematic changes to online programming
Two changes must be made to increase market consumption of programming based on the findings of this study. First, teams need to consider utilising social network marketing. For example, Facebook groups allow teams to provide fans with photos, video, game scores, information on upcoming events and a two-

way form of communication in which fans can chat directly with athletes and coaches. This personal connection may be integral in developing a feeling of vicarious achievement in prospective fans. While some teams engage in this process, others do not. These social networking pages should link to online media to watch games and in turn the online mediums should direct spectators to social networking sites such as wheelchair rugby's Facebook page and specific team pages. Second, USQRA should make efforts to streamline the number of websites that host USQRA events. With multiple sites showing wheelchair rugby games, it becomes increasingly challenging for spectators to locate and access video content. USQRA should make this process as seamless for the consumer as possible.

Limitations and directions for future research

This study has several limitations. First, the data were collected from a regular season USQRA tournament. Therefore, the findings may not be generalisable to other adaptive sports. More research needs to be conducted in different adaptive sports contexts (e.g. wheelchair tennis, goal ball and power soccer) to enhance external validity of the findings.

Second, despite the MSSC's applicability to adaptive sports settings, more motivation factors that are unique and context-specific need to be included in the model to better explain consumption behaviours. For instance, wheelchair rugby is known for toughness and violent collisions, which could be tied to the violence construct. Violence has been introduced as a relevant motive to certain sports, such as ice hockey (Andrew, Koo, Hardin & Greenwell, 2009), and it would be interesting to examine in future studies whether violence is an important motivation to influence consumption of wheelchair rugby.

Third, this study only examined the direct effect of spectator motivation factors on sports consumption behaviours. However, it is unclear if the relationships found between motivation and sports consumption behaviours could be similarly applicable to both highly identified fans and less identified fans. Due to the lack of visibility of wheelchair rugby, the authors speculate that spectators in the current study were those who were knowledgeable and followed wheelchair rugby events. Therefore, it is suggested that future research measure team identification to examine whether there is any difference between highly identified fans and less identified fans in terms of motivation for consumption.

Recently, team identification has been treated as a moderator in sports management studies (e.g. Theodorakis, Kourstelios, Robinson & Barlas, 2009). In addition, disability itself (i.e. whether or not a spectator has disability) may be a moderating factor. However, the analysis was impossible in the current study due to the inequality in sample size between the two groups (i.e. people with disabilities and people without). It would be instructive to understand the role of disability in accounting for sports consumption behaviours in future studies.

In conclusion, this study was the first attempt to examine spectator consumption behaviour associated with wheelchair rugby events. Adopting spectator motivation as a theoretical guideline, a systematic evaluation was conducted to investigate what motivated spectators of wheelchair rugby games to make decisions for consumption. These findings should assist marketers in improving the quality of their product to better serve spectators for influencing sports consumption behaviours. In the future, more replication studies should be conducted to better understand sports consumption behaviours associated with wheelchair rugby events.

Biographies

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