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Examining environmental fan engagement initiatives through values and norms with intercollegiate sport fans

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ABSTRACT

The United Nations has asserted that sport organizations and/or allied sponsors can influence fans to engage in more sustainable behaviours intentions at sporting events and at home; however, more investigation is necessary to assess this assumption. The purpose of this study was to examine values and norms related to the natural environment and perceptions of fan engagement sustainability initiatives that influence sustainable at-home behaviours. Season ticket holders ($N = 267$) of a National Collegiate Athletic Association Division I men's collegiate basketball programme completed a preseason survey assessing values, norms, and perception of environmental efforts; at the conclusion of the season, recall and influence of three environmental initiatives (recycling, water conservation, and composting) featured at each game over the season were assessed. Results indicate that sport-event norms were a significant predictor of lower perception of recycling inconvenience, higher perception of recycling benefits, and positive influence of athletic department sustainability efforts while values and personal norms were non-significant predictors. Values and personal norms were not significantly related to sponsored initiative awareness, sponsor recall, and perceptions of influence related to at-home behaviour change. Sport-event norms significantly predicted influence towards at-home composting. Future research should longitudinally examine the influence of environmentally sustainability focused fan engagement initiatives on sustainable behavioural change at events and at-home.

1. Introduction

The excitement generated from sport often elicits immediate and highly engaged emotions in fans that are strong and memorable (Madrigal, 1995; Wakefield, 2016). In the case of fan behaviour focused on sustainability issues, many sport organizations want to instil the same intense calls to action channelled through sport to influence pro-sustainable behaviour (Jefferson Lenskyj, 1998; Thibault, 2009; Trail & McCullough, 2019). While environmental issues are part of a broader societal narrative and system, the movement to sustainable sport means that societal concepts, and even scientific debate and discussion, are entering the sporting arena (Mallen & Chard, 2011). Sport, sometimes a mirror of societal issues, continues the societal dialogue and adds to it in its own unique way.

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Environmentally driven fan engagement initiatives have been in place for several years now (Mallen, 2018; Mallen & Chard, 2011; Mallen, Stevens, & Adams, 2011; Trail, 2016). The motivations for these campaigns include increasing fan engagement opportunities, increasing fan identification, increasing goodwill perceptions of the sport organization, cost savings, promoting environmental behaviours, and reducing the sport organization's environmental impact (Babiak & Trendafilova, 2011; McCullough & Cunningham, 2010). As this work continues to grow, it is important to understand not only the ways in which sport organizations are operating environmentally responsible, but also to understand the outcomes of these efforts, especially as they pertain to fans and other stakeholders (Cantelon & Letters, 2000; Casper, Pfahl, & McSherry, 2012).

The impact of environmental messaging and actions from sport organizations and/or allied sponsors must be examined for issues of fit or alignment with fan values so that ultimately the success of environmental messages can be determined for sponsors and sport organizations alike. Corporate social responsibility and corporate social strategy efforts in relation to the natural environment are widespread, positive, and *can* engage fans. However, in order to maintain sustainability efforts, there is a need to define the effectiveness levels of such initiatives and to move the conversation towards the return on investment of strategic efforts of the organization as a whole, not just as narrowly defined efforts, that can be classified as corporate social responsibility (Babiak & Trendafilova, 2011; Babiak & Wolfe, 2009; Trendafilova & Nguyen, 2015; Walker & Kent, 2009). Obtaining actual behaviour change, rather than simply awareness, might make this return on investment more likely.

Although sport, in general, has addressed sustainability and environmental issues overall (Thibault, 2009), less focus has been placed on sustainability in intercollegiate athletics (Casper et al., 2012). Intercollegiate athletics acts as a *front door* for many colleges and universities and showcases key cultural and economic elements of the central institution (Casper, Pfahl, & McCullough, 2014). The public nature of intercollegiate athletics makes it useful as a public platform for a college or university, including regard for environmental efforts (Casper et al., 2014; McCullough, Kellison, & Wendling, 2018; Jin, Mao, Zhang, & Walker, 2011).

The purpose of this study was to examine values and norms related to the natural environment and perceptions of fan engagement sustainability initiatives that influence sustainable at-home behaviours. Fan engagement campaigns are a key driver of corporate social responsibility-oriented environmental work (Casper et al., 2014; McCullough, 2013), but their influence is one that is not fully assessed in the literature. Individual values and norms should be measured (e.g., Universal Theory of Human Values, Norm Activation, The New Ecological Paradigm) because they account for the complex nature of individual interactions with the environment (Dunlap & Van Liere, 1978; Schwartz & Howard, 1981). The Value Belief Norm framework has previously been used in the context of sport and the natural environment as a way to explore how sport organization environmental efforts promote positive changes in fan environmental behaviours at events (Casper et al., 2012; Casper et al., 2014). However, these previous studies did not evaluate changes in perception related to at-home environmental behaviours to further evaluate the influence of environmental fan engagement initiatives. An adapted Value Belief Norm framework was applied in the current study utilizing a preseason and postseason survey method to assess the fans' perceptions of environmental behaviours based on athletic department environmental initiatives. The following section provides contextualization of the study within existing literature on sport, the natural environment, and fan environmental behaviours.

2. Literature review

Environmentally friendly and sustainability-focused corporate social responsibility practices are part of the modern sports landscape. Corporate social responsibility efforts, such as outreach and goodwill endeavours, are useful to sport organizations (Babiak & Trendafilova, 2011; McCullough & Cunningham, 2010). However, these efforts are difficult to analyse in terms of the impact on the lives of those they strive to engage, especially in terms of sustainability behaviours beyond the context of a sporting event. Further, as sport organizations integrate environmental concerns into their strategic and operational planning, their interactions with fans begin to shift from corporate social responsibility as an outreach effort to corporate social responsibility as a way of doing business. Effectiveness, in large part, can be measured by the influence these campaigns and initiatives have on stakeholders' behavioural intentions, and even actual actions, during the context of the sporting event and at-home/in their everyday lives. In order to understand the effectiveness (i.e., reach) of a given environmental initiative, the assessment of the perception of at-home environmental behaviours is necessary to determine the extent to which fans may integrate these messages into their lives (Casper, Pfahl, & McCullough, 2017).

2.1. Individuals and their awareness and actions related to the environment

Since the environment is unable to speak for itself, despite its power to make itself present (e.g., hurricanes, earthquakes), individuals are empowered to take actions that work in the interest of the environment (Etzion, 2007). The environmental issue is one that is grounded in a person's engagement with the world and how he or she fits within it. Therefore, an environmentally driven theoretical framework was developed to understand individual values-beliefs-norms (i.e., Value Belief Norm framework) as it is a precursor to predict individual behavioural intentions using personal values, beliefs, and norms (Ajzen, 1991; Stern, 2000). While the measurement of actual behaviours may be ideal it is often not feasible, so social psychological research assumes that the stronger the behavioural intention to perform the behaviour (i.e. efficacy), the more

likely the behaviour will be performed. As such, behavioural intentions have been found to have high predictive validity in relation to behaviour (Ajzen & Madden, 1986; Hagger, Chatzisarantis, & Biddle, 2001).

The Value Belief Norm framework incorporates multiple perspectives (Universal Theory of Human Values, Norm Activation, The New Ecological Paradigm) to address the complex nature of the relationship between an individual and the natural environment (Dunlap & Van Liere, 1978; Dunlap, Van Liere, Mertig, & Emmet Jones, 2000; Schwartz & Bilsky, 1987; Schwartz & Howard, 1981). The Value Belief Norm framework intertwines personal values, beliefs, and norms to predict individual behavioural intentions (Stern, 2000). Individual awareness of environmental issues is the extent to which understanding of an issue is present in an individual, and knowledge refers to the depth and breadth of knowledge a person has in a given situation (Casper et al., 2012; Casper et al., 2014). A person's awareness and knowledge are balanced against various contextual aspects of a situation. Data and information improve an individual's understanding of environmental issues, which influence environmentally friendly actions (Spaargaren, 2003).

The Value Belief Norm framework fits within the scope of this study because it facilitates examination of individual level factors that contribute to or hinder environmental behaviours (e.g., at sporting events, at-home), which is the goal of the efforts of sport organizations in the environmental space (Scherbaum, Popovich, & Finlinson, 2008; Spaargaren, 2003). Further, it fosters a window of insight into perceptions of actions undertaken by an individual in relation to his or her choice to act within their perceived value and norms. Such a framework drives greater understanding of the effectiveness of environmentally focused fan engagement initiatives to promote behavioural change.

2.1.1. Values

Personal values are situation-transcending beliefs about what is important in life (Schwartz & Bilsky, 1987). Environmental values orient an individual in relation to the natural environment, influencing his or her willingness to support environmental actions (i.e., behavioural intentions; Steg, Dreijerink, & Abrahamse, 2005).

The full Value Belief Norm model includes three value orientations (ego, altruistic, and biosphere) that relate to people maximizing individual outcomes, focusing on the welfare of others, and having concern for the environment and all non-human entities within it respectively. A central finding from past studies with the Value Belief Norm framework is that individuals who focus concerns beyond themselves are more likely to engage in pro-environmental behaviour, although values themselves were not a single driver of behaviours due to the mediation of other factors including beliefs and norms (Dietz, Dan, & Shwom, 2007; Steg et al., 2005; Stern, 2000). However, researchers examining environmental behavioural change did not evaluate the influence of values in contexts beyond sporting events (Casper et al., 2014; McCullough, 2013; McCullough & Cunningham, 2011). Specifically, previous studies have focused only on influences on personal behavioural intentions (McCullough, 2013; McCullough & Cunningham, 2011) or evaluated the influence of a one-off intervention (i.e., green game) to promote environmentally friendly behaviours at a sporting event (Casper et al., 2014).

2.1.2. Beliefs

Value Belief Norm theory posits that environmental behaviour results from worldviews, or beliefs, individuals have about the relationship between humans and the environment (Steg et al., 2005). Previous studies with the Value Belief Norm framework found the connection between individual worldviews and behaviour weak and non-significant predictor of behavioural intentions and that additional belief elements, offer better predictors of behaviour (e.g., ascription of responsibility; awareness of consequences; Casper et al., 2012; Steg et al., 2005). Considering these recommendations and due to a need for brevity in the survey instrument, beliefs were not included in the current study.

2.1.3. Norms

Norms have been shown to influence whether or not individuals engage in environmental behaviours in their daily lives as well as in sport-oriented contexts (e.g., as fans at events; Casper et al., 2012; Goldstein, Cialdini, & Griskevicius, 2008; Pfahl, 2010). McCullough and Cunningham (2011) found that social norms, or the perceived social pressure to perform or not to perform the behaviour (i.e., external expectations; Ajzen, 1991), significantly predicted environmental behavioural intentions among sport spectators. Additionally, McCullough (2013) found that college football tailgaters were influenced by social norms to engage in environmental behaviours. However, these studies did not examine the influence of personal norms, defined as expectations that people hold for themselves (Schwartz & Howard, 1981). Personal norms are self-expectations and feelings to oblige what is morally right (Steg et al., 2005) and are of particular interest when examining behaviours, especially the perceptions a person has of his or her individual activities or actions and the ability to execute them.

Previously, Casper and colleagues (2017) examined the effects of personal norms on behavioural intentions of game day and at-home environmental behaviours. However, the intervention used to prompt fans was a one-time event (i.e., green game) and not an ongoing fan engagement campaign. Previous researchers have encouraged sport practitioners to use consistent messaging across a season to promote environmental behaviours as part of a sustainability campaign (Casper et al., 2014; Casper et al., 2017). However, no studies have examined the influence of such an effort on fans.

To this end, this study incorporates an examination into the influence of personal norms, as opposed to subjective or social norms that are influenced by significant peer groups (Ajzen, 1991). Personal norms relate to a feeling of moral obligation or responsibility to perform or refrain from specific actions (Stern, 2000). Therefore, personal norms add a behavioural component that goes beyond beliefs and relates more to what someone should or ought to do.

2.1.4. Behaviours: Perceptions and influence

The Value Belief Norm has been used to predict many different types of behaviours types including environmental activism, non-activist behaviours in the public sphere, private-sphere environmentalism, and organizational actions (Stern, Dietz, Abel, Guagnano, & Kalof, 1999; Stern, 2000). We focused specifically on behaviour in the public sphere (e.g., at-event) and private sphere (e.g., at-home). To examine these issues, perceptions and influence related to pro-environmental behaviours both at-events and at-home were measured.

Recycling cans and bottles at sporting events is now commonplace (McCullough, Pfahl, & Nguyen, 2016). Despite previous research focusing on the environmental behavioural intentions, specifically recycling behavioural intentions (McCullough, 2013; McCullough & Cunningham, 2011), these researchers had mixed findings in the influence of attitudes on recycling behaviours. As a result, further examination is needed to explore and refine this line of inquiry.

As fans begin to understand and to adopt environmental values and norms within their overall lives, sport organizations can utilize their social position to influence environmental issues and behaviours via sport (Stern, 2000). Athletics departments offer opportunities to educate fans about environmental issues and efforts to address them in a unique manner (e.g., green games, environmental initiatives; Natural Resources Defense Council, 2013). Offering educational and other environmentally related outcomes at sport events is an important step towards influencing and changing personal behaviours fans (Casper et al., 2014). Therefore, it is necessary to evaluate the foundations of sport fans' receptivity and importance of environmental initiatives to understand the engagement with and connections between fans and the environmental activities of a sport organization (Lin & Huang, 2012; Ottman, 2011; Stern, 2000). To this end, we proposed the following research question.

Research Question 1: Do values and personal norms significantly predict (a) perceptions of the inconvenience of recycling, (b) perceptions of the benefits recycling, and (c) a positive influence of athletic department environmental efforts?

2.2. The green experience in sport: Measure to manage, not to market

Reaching out to fans has become a part of the overall organizational work related to the environment. For example, the United Nations wants sport organizations to use their social platform to influence positive sustainable behaviours among sport fans (United Nations, 2018). Yet, despite many successes in this area, the core issue remains whether or not fans (and other stakeholders) care about the corporate social responsibility efforts and the extent to which these initiatives have a lasting impact in their everyday lives (e.g., at-home behaviours) beyond the context of the event. Scholars have shown that fans are receptive to the efforts that sport organizations have undertaken to date (Casper et al., 2014, 2017; Walker & Kent, 2009), but the question remains as to whether or not the fan engagement campaigns promoting at-home environmental behaviours have (or can) positively influence fans (i.e., real, lasting behavioural change).

The interplay between the personal (e.g., values, norms, perceptions, awareness, knowledge) and the contextual (e.g., intercollegiate athletics department recycling initiative), discussed in previous sections, results in resource allocation and strategic decisions by sport organization personnel designed to influence and to foster behavioural change through engagement activities (Casper & Pfahl, 2015; McCullough & Cunningham, 2010; McCullough et al., 2016; Stern et al., 1999; Stern, Dietz, Kalof, & Guagnano, 1995). For example, National Collegiate Athletic Association (NCAA) departments at the Division I and III levels recognize their impacts on the environment and have been working to incorporate a range of strategic and operational processes to mitigate these impacts (e.g., energy conservation through LED lighting, recycling programmes, sustainability-themed games; Casper & Pfahl, 2015; Casper et al., 2012). However, athletics departments require assistance, and even guidance, to achieve their environmental goals due to various enablers (e.g., support from university sustainability staff) and constraints (e.g., not a strategic objective) (Casper & Pfahl, 2015; Casper et al., 2012; Dolf & Teehan, 2015; Inoue & Kent, 2012; Pfahl, Casper, Trendafilova, McCullough, & Nguyen, 2015; Trail & McCullough, 2018). Further, the place of athletics departments (i.e., within a university structure) enables and constrains the abilities of these departments to act (e.g., budget issues, partnerships/cooperative behaviours; Dolf & Teehan, 2015; Pfahl et al., 2015).

Intercollegiate athletics programmes of all types are making changes related to environmental issues and fan/community engagement as environmental understanding grows making them a useful area of study. For example, the University of Missouri football stadium has been working towards a zero-waste goal following in the footsteps of other peer institutions such as the University of Michigan and Ohio State University, while noting the difficulties inherent in such a move including fan behaviour (Costello, McGarvey, & Birisci, 2017). In another example, the University of North Texas added wind turbines to its football stadium footprint. Utilizing funding from a grant, university personnel are using the turbines to power the football stadium and several other campus buildings in that immediate area (University of North Texas, 2011).

Walker and Kent (2009) examined the ways in which corporate social responsibility efforts overall were received by fans. In general, corporate social responsibility efforts were received in a positive manner highlighting the importance of such outreach efforts within overall sport organization strategy. However, personal behavioural intentions were not examined closely nor were personal (e.g., at-home) behavioural intentions examined against event behavioural intentions. That is, Walker and Kent did not evaluate if corporate social responsibility efforts extended beyond the context of the sporting event into the fans' everyday lives. Thus, it is worthwhile to examine the reach of such corporate social responsibility efforts and their impact on fans' everyday lives as a manifestation of a return on investment measure.

Specifically studying sport fan behavioural intentions in relation to environmental issues, Casper and colleagues (2014) showed that sport fans can make relational connections with environmental activities, in this case, a 'green' sporting event. The results of surveying the event's fans showed that individual awareness levels of fans towards the environment were raised by the concept of a green game. The initiative's activities and educational objectives were realized (Casper et al., 2014). Most importantly, fans were both shown and demonstrated themselves how environmental behavioural intentions are active at sporting events (e.g., recycling, composting) and that personal norms and values related to environmental issues can connect with sport organization tactics at such events. Despite the strengths of this study, Casper and colleagues did not have a baseline in which to quantify how well the fan engagement initiative (i.e., green game) improved behavioural intentions at the sporting event. Moreover, their study did not evaluate or compare behavioural intentions at the sporting event as compared to at-home behavioural intentions. A gap still exists in the literature to evaluate the extent of the influence of such initiatives.

Additionally, numerous examinations into the strategic and relational role of corporate social responsibility have been undertaken ranging from customer relationships (Lacey & Kennett-Hensel, 2010) to sponsorship (Plewa & Quester, 2011) to communication issues in corporate social responsibility (Walker, Kent, & Vincent, 2010). Han, Nelson, & Kim (2015) and Casper and colleagues (2014) showed there is awareness by fans of environmental issues and actions that can be taken. They demonstrate that fans are aware of their own actions. However, absent in these studies is a purpose to develop a clear picture of the link between institutional work (e.g., a green initiative) and the influence on an individual during the event and more lasting impacts in their everyday lives. As a result of these areas of need, we propose the following research question:

Research Question 2: Do environmental values and norms predict (a) awareness of environmental initiatives, (b) accuracy in recognition of sponsorship, and (c) perceptions of influence of promotions on pro-environmental behavioural intentions?

To conclude, sport organization personnel must move away from simply providing awareness of an environmental issue and move to link fan perceptions, expectations, and norms to organizational strategy and operations to understand deeper perceptions of behaviour change and assess the impact of environmental messages/initiatives (Casper et al., 2014, 2017; McCullough et al., 2016; Walker & Kent, 2009). The method discussed next provided a framework from which to better understand fan perceptions related to the natural environment as well as to investigate the link from awareness to behaviours.

3. Method

3.1. Participants and procedure

3.1.1. Preseason survey

This study was approved by the Human Subject Review Board at the lead author's institution. Data were collected from men's basketball season ticket holders at a large Division I university. The ticket manager for the university athletics department sent an email invitation using their database of 2016–2017 season ticket holders (2972 households). Season ticket holders were chosen based on availability of contact information and frequency of attendance. Compared to single game ticket holders, frequent attendees are more likely to be exposed to athletic department efforts throughout a season. Further, season ticket holders serve as the foundational basis for fan preferences and purchasing power than single game ticket holders (Biscaia et al., 2016). The invitation stated how long the survey would take to complete, athletic department partnership in the study, an incentive to win a $100 gift card, survey closing deadline, and a hyperlink to the Qualtrics hosted survey. There were 327 respondents who completed the 33-item web survey (11% response rate).

3.1.2. Follow-up survey

Participants who completed the preseason survey were asked to provide an email for a 28-item follow-up survey ($N = 267$). The respondents were given one week to complete the follow-up survey and participants were offered a $100 gift card drawing as an incentive. A total of 138 respondents completed both preseason and postseason surveys and matched (52% response rate). The response rates were within range among other sport management research surveys using a similar procedure (see Jordan, Brandon-Lai, Sato, Kent, & Funk, 2014).

3.2. Instrument: Preseason

The preseason survey included demographics (age, sex, income, and affiliation with university). Respondents were also asked about past basketball game attendance and planned future attendance for the upcoming season. Constructs created for values, norms, and perceptions of athletic department efforts, and perceptions of influence on behavioural intentions are detailed in the following section. These items, and calculated constructs, were adopted from studies specific to environmental sustainability and environmental behavioural intentions (Casper et al., 2014, 2017; De Groot & Steg, 2007; Guagnano, Stern, & Dietz, 1995; McCarty & Shrum, 1994; Steg et al., 2005). All constructs used have demonstrated adequate reliability in previous studies ($\alpha > .70$).

To assess the environmental values of the participants, three items were modified from past environmental (De Groot & Steg, 2007; Steg et al., 2005) and sport-specific (Casper et al., 2014, 2017) research. Since our study focused on the environment, biosphere (or ecocentric) values were chosen. These items included: "protecting the environment and preserving nature," "respecting the earth and living in harmony with other species," and "preventing pollution and minimizing waste." All items were measured using a five-point scale (1 = *not at all important* to 5 = *extremely important*).

Three items adopted from Scherbaum et al. (2008) were used to measure personal norms. Participants ranked their agreement to the following three items to determine personal norms: "conserving natural resources is important to me," "I have a responsibility to conserve natural resources," and "I would be willing to pay higher prices to protect the environment." All items were measured using a five-point scale (1 = *not at all important* to 5 = *extremely important*).

Based on previous research, three items were used to measure norms associated with sport organizations and personal behaviour at the events (Casper et al., 2014). The three items included: "sport teams/organizations should conserve natural resources," "I feel that I should conserve natural resources at sport events," and "I would be willing to be inconvenienced to help conserve natural resources at sport events." All items were measured using a five-point scale (1 = *not at all important* to 5 = *extremely important*).

Three items measured behavioural perceptions related to the inconvenience of recycling and three items measured perceived benefits of recycling (Guagnano et al., 1995; McCarty & Shrum, 1994). Inconvenience items included the following: "recycling is inconvenient," "I hate to wash out bottles," and "recycling is too much trouble." Benefits included: "recycling will save land that would be used as dumpsites," "recycling will reduce pollution," and "recycling is important to save natural resources. All items were measured on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*).

Four items assessed the influence of pro-environmental efforts by the athletics department at athletic events. The items were employed and validated in a previous study with the same athletic department (Casper et al., 2017). The question block included the verbiage, "Environmental efforts by < athletic department name > ": "help educate me about the importance of environmental sustainability," "influence my environmental behaviours at events," "influence my environmental behaviour at-home," and "influence my fandom of the athletic brand." All items were measured on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*).

3.3. Follow-up survey

To maintain anonymity, respondents to the preseason survey were given a respondent identification number that was used to match responses to the follow-up survey without the use of an identifier (email address). A preliminary item asked about frequency of attendance ("how many games did you attend this season?"). Additional items assessed sponsored initiative awareness and influence. Respondents were asked about recognition of the three environmental promotions that were run throughout the season using aided recall (Lavrakas, 2008).

Sponsor 1's initiative related to plastic bottle recycling with messaging on what happens when a plastic bottle gets recycled ("bring your bottle back to life") shown pre-game on the video board. Additionally, tee shirts made with recycled plastic bottle material were thrown to fans by cheerleaders for every three-pointer made by the team ("tees for threes"). Sponsor 2's initiative was a water reduction campaign conducted during halftime (three home games) with a fan "make it rain" shooting contest and video advertisements to encourage fans text "water" to the sponsor number, who then contributed to a water conservation foundation ($1 per text). Sponsor 3's initiative was an at-home composting campaign for Saturday games (two total). Fans, upon entering the arena, received an at-home composter bin with instructions on how to compost at-home. Messaging about the giveaway was shown on the video board during pre-game.

For each promotion, respondents were asked to indicate if they recognized each of the three possible promotions (items included all three of the official sponsors and two additional dummy promotions – five choices overall). For each of the promotions recalled correctly, respondents were asked about its influence ("Did < name of promotion > influence your awareness of the importance of plastic bottle recycling/composting/water conservation at-home?") using a five-point scale (1 = *definitely not* to 5 = *definitely yes*).

3.4. Data analysis

Data were analysed with IBM SPSS Statistics 24 and AMOS 23. The first step was a descriptive analysis and an examination of the data for normality (i.e., skewness and kurtosis) applying critical values of less than +/−2.0 for skewness and less than +/−3.0 for kurtosis (George & Mallery, 2010; Tabachnick & Fidell, 2001). Confirmatory factor analysis (CFA) was conducted to create and assess constructs based on multi-item scales (values, personal norms, sport norms, recycling inconvenience, recycling benefits, and perceptions of athletic department efforts). CFA also assessed reliability and validity of constructs based on factor structure, composite reliability (CR), and average variance extracted (AVE) (Garson, 2013; Hu & Bentler, 1999).

Analysis for RQ1 used structural equation modelling (SEM) to examine the predictive relationships linking values, personal norms, and sport norms to perceptions of recycling inconvenience, perceptions of recycling benefits, and perceptions of athletic department environmental efforts. The following fit indices were used: Comparative Fit Index (CFI),

Tucker-Lewis Fit Index (TLI), and Root Mean Square Error of Approximation (RMSEA). According to Hu and Bentler (1999), fit index values of CFI and TLI above .90 and RMSEA values less than .05 are considered acceptable.

Analysis for RQ2 included multiple analysis of variance (MANOVA) using an adjusted conservative p-value (.01) to investigate awareness of initiatives and accurate sponsorship recognition, while linear regression was conducted to predict how values and norms explained the influence of the initiatives on the respondents' pro-sustainable environmental behaviours (recycling, composting, and water conservation). Age, gender, and income were controlled for in the analysis. The results of the study are presented next in light of the guiding research questions of the study.

4. Results

4.1. Demographics

The average age of the respondents was 53.9 years old (SD = 17.8) who were mostly male (76.1%). A majority (81%) of the respondents had a household income over $75,000 USD annually, and 53.4% were alumni of the university. All respondents had attended at least nine of the possible 17 home games over the season. The sample populations in this study closely matched athletic department internal records of the total population of season ticket holders based on demographics (i.e., age, sex, alumni status, income).

4.2. Normality and factor analysis

Univariate normality of all items was examined with skewness and kurtosis values. All values were in an appropriate range revealing a mesokurtic distribution of the data and, therefore, a normal distribution. Multivariate normality was assessed based on relative multivariate kurtosis. All values had a normal multivariate distribution (< +/−2.0; Tabachnick & Fidell, 2001). Confirmatory factor analysis found acceptable factor loading values for all items (>.50) and all constructs were found to be reliable and valid (Table 1).

Table 1
Standardized factor loadings of items, composite reliability and average variance extracted for constructs.

Construct item	Std. factor loading	CR	AVE
Values		0.91	0.77
Protecting the environment, preserving nature	0.92		
Respecting the earth; live in harmony with other species	0.84		
Preventing pollution; minimizing waste	0.88		
Personal Norms		0.88	0.82
Conserving natural resources is important to me	0.94		
I have a responsibility to conserve natural resources	0.96		
I would be willing to pay higher prices to protect the environment	0.74		
Sport Norms		0.93	0.78
Sport teams/organizations should conserve natural resources	0.89		
I feel that I should conserve natural resources at sport events	0.95		
I would be willing to be inconvenienced to help conserve natural resources at sport events	0.88		
Recycling Inconvenience		0.79	0.56
Recycling is inconvenient	0.87		
I hate to wash out bottles	0.57		
Recycling is too much trouble	0.89		
Recycling Benefits		0.92	0.78
Recycling will save land that would be used as dumpsites	0.88		
Recycling will reduce pollution	0.82		
Recycling is important to save natural resources	0.88		
Perceptions of AD efforts		0.82	0.6
Help in educating me about the importance of environmental sustainability	0.70		
Influence my environmental behaviours at events	0.85		
Influence my environmental behaviours at-home	0.81		
Influence my fandom of < University Name > athletics	0.84		
Perceptions of Branding		0.88	0.64
Does a branded promotion (like "example promotion") have an impact on your recycling more than if there was only standard/general recycling communication (marked recycling bins)?	0.80		
Do you think more positively about a brand/company after seeing/using recycling bins branded with a specific brand name (i.e. Pepsi, Gatorade, etc.)?	0.83		
Are you they more likely to buy a brand's product after seeing/using recycling bins branded with that specific brand name (i.e. Pepsi, Gatorade, etc.)?	0.70		

4.3. RQ1

The structural equation model found that values significantly predicted personal norms and sport norms, with personal norms having the larger beta value. Respondents reporting higher sport norms were found to have significantly lower perceptions of the inconvenience of recycling, higher perceptions of benefits of recycling, and positive influence of athletic department efforts (Fig. 1).

4.4. RQ2a: Awareness of environmental initiatives

The MANOVA found no significant differences in the values, personal norms, and sport norms based on awareness of all three environmental initiatives. No interactions were found to be significant. Therefore, those that accurately recalled the environmental fan engagement initiatives were not more or less pro-environmental (Table 2).

4.5. RQ2b: Accuracy in recognition of sponsorship

The MANOVA found no significant differences in the values, personal norms, and sport norms based on accurate recall of sponsorship with all three environmental initiatives. No interactions were significant. Therefore, those that were able to accurately recall sponsorship brands were not more or less pro-environmental based on values and norms (Table 3).

4.6. RQ2c: Awareness of promotions on influencing pro-environmental at-home behaviours

Regression found that values and personal norms were not significant predictors of influencing pro-environmental at-home behaviours of any of the three at-home "asks" that were part of the sustainability initiatives (plastic bottle recycling, water conservation, and composting). Out of the three predictors, sport norms were the strongest predictor in the models and a significant predictor for influencing at-home composting behaviours (Table 4).

5. Discussion

In the first research question, we demonstrated that environmental values significantly predicted personal norms and sport norms. These findings are consistent with past research, especially at the intercollegiate level, where there is an expectation for action, from both internal and external sources (Casper & Pfahl, 2015; Casper et al., 2017; Casper et al., 2012; Walker & Kent, 2009). However, these previous studies examined the influence of subjective and social norms (i.e., norms influenced by social pressure) rather than personal norms (i.e., norms influenced by personal and moral obligations). In this study, our findings extend the current understanding by suggesting that the participant's personal norms outweigh the perceived constraints (i.e., inconvenience) to engage in pro-environmental at-home behaviours.

Moreover, we found that participants who reported higher sport norms had significantly lower perceptions of inconvenience to recycle, higher perceptions of the benefits of recycling, and positive influence of athletic department sustainability efforts. This finding provides empirical evidence for previous conceptual papers that fans *do* care how

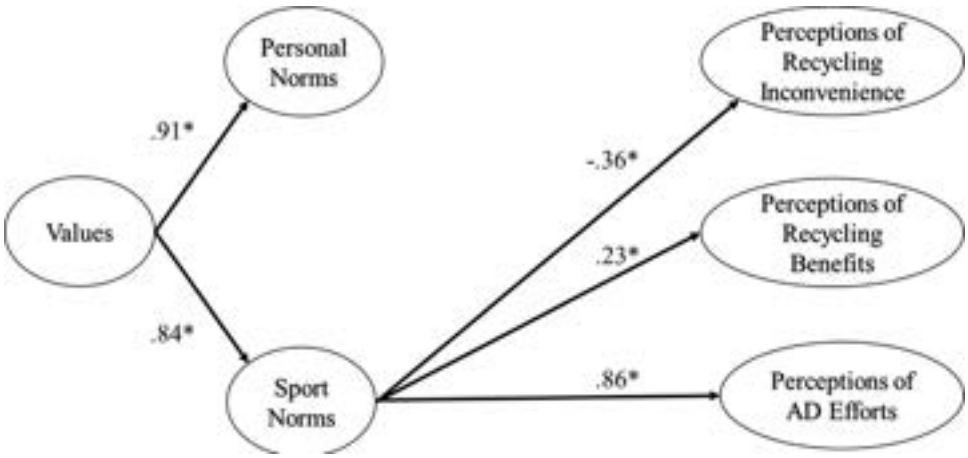

Fig. 1. Structural equation model results testing the relationship between values, norms, perceptions of recycling, and athletic department sustainability efforts.
Note. $^{*}p < .05$.
Model Fit: Chi-Square = 355.38, df = 141, $p < .001$; CFI = .96; TLI = .95; RMSEA = .04.

Table 2
Awareness of initiative main effects MANOVA based on values, personal norms, and sport norms.

	Sponsor 1 (recycling)			Sponsor 2 (water)			Sponsor 3 (compost)		
Dependent variable	Aware ($N = 60$) M (SD)	Unaware ($N = 78$) M (SD)	F	Aware ($N = 94$) M (SD)	Unaware ($N = 44$) M (SD)	F	Aware ($N = 93$) M (SD)	Unaware ($N = 45$) M (SD)	F
Values	4.24 (.60)	4.18 (.84)	.27	4.20 (.72)	4.21 (.79)	.01	4.22 (.64)	4.16 (.91)	.65
Personal norms	4.05 (.67)	4.04 (.89)	.02	4.08 (.76)	4.03 (.80)	.89	4.01 (.77)	4.07 (.87)	.65
Sport norms	3.90 (.90)	3.89 (.78)	.05	3.93 (.83)	3.83 (1.02)	.34	3.90 (.89)	3.88 (.93)	.94

Note. Control variables Age, Gender, and Income were non-significant.

Table 3
Sponsor recall of initiative main effects MANOVA based on values, personal norms, and sport norms.

	Sponsor 1 (recycling)			Sponsor 2 (water)			Sponsor 3 (compost)		
Dependent variable	Correct ($N = 27$) M (SD)	Incorrect ($N = 33$) M (SD)	F	Correct ($N = 55$) M (SD)	Incorrect ($N = 39$) M (SD)	F	Correct ($N = 26$) M (SD)	Incorrect ($N = 67$) M (SD)	F
Values	4.18 (.59)	4.23 (.59)	.11	4.23 (.70)	4.12 (.68)	.24	4.07 (.77)	4.27 (.62)	1.51
Personal norms	4.09 (.69)	4.00 (.67)	.27	4.04 (.76)	4.12 (.58)	.56	3.87 (.80)	4.02 (.79)	.62
Sport norms	3.99 (.86)	3.84 (.55)	.54	3.85 (.90)	4.03 (.58)	1.04	3.65 (.98)	3.98 (.87)	2.24

Note. Control variables Age, Gender, and Income were non-significant.

Table 4
Regression predicting values, personal norms, and sport norms on influencing at-home behaviours.

	Influence on at-home plastic bottle recycling ($N = 60$)				Influence on at-home water conservation ($N = 94$)				Influence on at-home composting ($N = 93$)			
Construct	B	Std. Error	Std. B	t	B	Std. Error	Std. B	t	B	Std. Error	Std. B	t
Values	.10	.45	.05	1.05	.30	.29	.20	1.05	−.06	.31	−.03	−.19
Personal norms	−.21	.42	−.12	−.50	−.11	.32	−.07	−.33	−.09	.29	−.06	−.30
Sport norms	.32	.33	.20	.95	−.32	.27	.24	1.12	.64	.26	.52	2.49*
Age	.29	.24	.17	1.20	−.13	.16	−.08	−.79	−.01	.16	−.01	−.08
Gender	.20	.44	.07	.47	.02	.29	.01	.06	−.26	.28	−.10	−.95
Income	−.18	.25	−1.12	−.73	−.16	.17	−.10	−.94	−.16	.17	−.10	.35
			$R^2 = .07$				$R^2 = .13$				$R^2 = .19$	

* p-value < .01.

organizations they support are managed (Sartore-Baldwin & McCullough, 2018) and that engaging in sustainability initiatives can increase goodwill perceptions (McCullough & Cunningham, 2010).

In our second research question, our results do not show a strong connection between awareness and accuracy of recall of initiatives and sponsors. This may be seen as a positive finding, as awareness and recall do not have a pro-environmental bias. Fans who are non-pro-environmental are just as receptive to environmental promotions as those who are highly pro-environmental. This may further explain why attitudes towards sustainable behaviours did not significantly predict sustainable behavioural intentions in prior research (McCullough & Cunningham, 2011). Our findings demonstrate that people are aware of environmental initiatives and can recall an environmental-focused sponsor without being overtly environmentally oriented.

Results pertaining to our second research questions indicated that sport norms were the only significant predictor of influence of at-home behaviours based on a sponsored initiative (e.g., composting). This at-event finding offers insight for influencing behaviours. Creating a space (i.e., stadium) where sport norm expectations include pro-environmental behaviours offers an opportunity for interventions. Aligning sponsors with specific activities can foster and increase behavioural intentions (e.g., sponsor giveaways) by overcoming perceived external constraints (Ajzen, 1991; Stern, 2000; Trail & McCullough, 2018).

Previous researchers have examined the behavioural intentions of sport spectators (McCullough, 2013; McCullough & Cunningham, 2011), the influence of these intentions as part of an intervention (i.e., fan engagement initiative; Casper et al., 2014; Casper et al., 2017), and the use of sport as a platform to promote pro-environmental messages (Inoue & Kent, 2012). However, these previous studies did not utilize pre and post-engagement surveys to examine the effectiveness (i.e., reach) of these fan engagement campaigns. Thus, the purpose of this study was to examine values and norms related to the natural environment and perceptions of fan engagement sustainability initiatives that impact at-home behaviours. In this study, we adapted theoretical framework to understand behaviours in a sport spectatorship setting and at-home. This approach improved upon prior research using a modified Value Belief Norm framework (Casper et al., 2017; Casper et al., 2014) and

theory of planned behaviour (Ajzen, 1991; McCullough, 2013; McCullough & Cunningham, 2011). The current study also added to the body of literature and examined the sponsor awareness and recall associated with sustainability focused sponsorships as another way to evaluate the recall of sustainability focused fan engagement efforts.

5.1. Managerial implications

Our results suggest that there are several ways in which sport managers can better leverage their sustainability initiatives to increase fan participation and promote sustainable behaviour behaviours among their fans. Specifically, our results provide further support to increase the reach of environmentally focused fan engagement campaigns (McCullough et al., 2016; Trail, 2016). Sport managers should approach such strategic initiatives like any other initiative by creating messages targeted to their fan segments specially to promote sustainable behaviours. However, Trail (2016) suggests that this approach to environmentally focused campaign messages requires that sport managers better understand their fan segments concerning sustainability focused initiatives (e.g., composting, water conservation, etc.) with regards to their motivations for engaging in such campaigns. These concerted efforts can increase the effectiveness and results of such campaigns. For example, specific marketing messages can be created targeting various fan segments based on their values and previous environmental behaviours (see Trail, 2016 for a detailed methodology). As we examined in this study the campaign was limited to in-venue messaging. Targeted communications can engage fans beyond the context of the event and in the context of the focus of the engagement campaign (e.g., at-home).

Our results also suggest that sport managers should not fear backlash from perceived 'conservative' or 'anti-environmental' fan segments. This has been cited as a reason for why sport organizations do not engage in environmentally sustainable business practices or highlight such efforts if they have implemented sustainability practices into their organizational operations (SportsBusiness Journal, 2016). Sport managers should be encouraged by these results that campaign messages are received by all fans regardless of their environmental values. This bodes well for sport organizations seeking sponsors to support their environmental initiatives and newly found sponsorship inventory. Through further examination and analysis, as mentioned above, sport sponsorship departments can better communicate the fit, reach, and resulting value of such sponsorship inventory. That is, since more fans are open to such messages, the reach of the sponsorships is not limited to a specific environmentally focused segment of the fan base. As such, sport practitioners should approach such fan engagement campaigns differently than others that seek to sell tickets, purchase merchandize or others (see Trail, 2016) due to the different objectives (e.g., purchasing behaviours vs. sustainability behaviours). Despite the findings of this study and managerial implications to improve current practice, there were important limitations to it that are addressed in the next section.

5.2. Limitations and future directions

In this study, we assessed values and norms before the start of a season and then assessed perceptions and recognition of environmental efforts after the season through panel data. While exploratory in nature, this study showed how the theoretical underpinning of values and norms, found to be important in environmental behaviours (i.e., precursors to action), can relate to the sport-specific environmental efforts that are becoming more common across the sport sector.

This study was limited to the athletic context of season ticket holders of a collegiate basketball team who attended games over one season. While past studies (Casper & Pfahl, 2012; Casper et al., 2014) have found the values and norms to have similar averages from fans attending different sports in different regions, the results may not be generalizable for all sport fans or to different sports (e.g., basketball versus football; collegiate versus professional). For example, receptivity may vary among sport fans based on political beliefs (McCullough, 2013), the extent of the sport organizations' commitment to sustainability (Pfahl, 2010), the design or sophistication of the sustainability campaign/efforts (McCullough et al., 2016), and frequency of attendance (i.e., single ticket holder vs. season ticket holders). More research is needed to further examine variables such as these and others that promote or inhibit sport fans' receptivity to sustainability initiatives and/or campaign messaging (Trail, 2016). Additionally, although the respondents reported high attendance over the season, we did not have the ability to confirm that study participants were present during at least one game when all sponsors' promotions were active, which may have affected awareness results.

Further, the campus examined in this study has a national reputation for being a leader in environmental sustainability, especially in intercollegiate athletics. This reputation and history of sustainability initiatives could influence the receptivity of fans to new campaign messages. The sample size and response rate for this study could also have been improved. While the sample was demographically representative of the Men's Basketball season ticket holder database, additional efforts such as follow-up reminders, statements of importance by the athletic department, coaches, or players, and reminders for both preseason and follow-up surveys may garner an overall higher response rate (Dillman, Smyth, & Christian, 2014).

While this study explores the increased awareness and perceptions towards at-home environmental behaviours, future research should explore actual behaviours and the influence fan engagement campaigns have on initial and sustained behavioural changes. As our findings suggest, sustainability-oriented fan engagement initiatives resonate with fans regardless of their environmental values (either for or against). Researchers should examine whether or not these messages influence gameday and everyday behaviours differently. That is, will fans act more sustainably at a venue as opposed to in

their everyday lives? These sustainability-oriented fan engagement messages carry the potential for other sponsorship opportunities.

Specifically, our findings demonstrate the value and potential reach of fan engagement campaigns for both the sport organization and sponsors. Sustainability initiatives and fan engagement campaigns should be approach like any other strategic initiative within the organization (McCullough & Cunningham, 2010). As such, researchers should apply the same marketing principles to analyse and develop specific campaign messaging using fan segmentation (for detailed methodology see Trail, 2016). Specifically, researchers should examine how to best raise awareness and achieve behavioural outcomes related to sustainability fan engagement campaigns.

Researchers should also explore the specific organizational attributes that facilitate a better fit between the sport organization and sponsor concerning a sustainability focused partnership. We recommend that other sport context should be examined in order to generalize these findings in other sport organizations. Lastly, future research should also examine such fan engagement campaigns from a sponsor's perspective. Most corporate sponsors have their own corporate sustainability initiatives. Researchers should examine whether these corporate sustainability initiatives fit well with sustainability-oriented sponsorships in sport. That is, does sport give them an additional platform to highlight their sustainability efforts and leverage that to enhance their brand?

5.3. Conclusion

Overall, this study further examined the awareness and behavioural intentions related to sustainability themed initiatives. The data show that the norms related to sport events have a significant relationship with positive perceptions of the efforts undertaken by sport organizations while also influencing at-home environmental behavioural intentions. While it may be intuitive to think that environmental initiatives are only received by those who care about environmental protection, our data show that environmental predispositions are not related to receptivity, awareness, and influence. As sport organizations move to increase their commitments to environmental sustainability initiatives it is imperative that they engage *all* sport spectators to ensure their awareness and participation in these efforts. This study contributes to the overall growing body of knowledge surrounding environmental sustainability fan engagement campaigns. Most encouragingly, this study gives empirical support to industry claims about the ability to leverage the social platform of sport to engage new populations to environmental messages to promote sustainable behavioural change that can combat climate change, and promote a more sustainable world (United Nations, 2018). Moreover, these sustainability initiatives afford sport organizations to create new sponsorship inventory potentially opening possibilities of new categories of sponsorship and invite new companies into sport sponsorship (e.g., BASF, Ball Aluminium, etc.). To this end, future studies warrant more investigation on this topic to help sport organizations and sponsors add value to their efforts.

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