ENVIRONMENTAL SUSTAINABILITY IN SPORT: AN ASSESSMENT OF ENVIRONMENTAL VALUES, BELIEFS, NORMS OF SPORT MANAGEMENT STUDENTS IN HIGHER EDUCATION INSTITUTIONS

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

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May 2022

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ACKNOWLEDGEMENTS

There are so many people that I need to thank for all their love, support, and mentoring during this ten-year journey. You know who you are…thank you for everything. I would not have made it through without each and every one of you!

ABSTRACT

Students studying sport management should be aware of the current environmental challenges in sport. Hence, as professionals, they will be better prepared to deal with issues that negatively affect the sport sector. The expansion of educational opportunities is needed for students to reflect the sport industry's implementation of sustainability into operations. Understanding students' awareness of environmental sustainability is critical to educating them better to manage such challenges during their sports careers.

The purpose of this study was to evaluate undergraduate and graduate sport management students' values, beliefs, and norms relating to environmental sustainability in higher education institutions across North America. Using Stern's Value-Belief-Norm Theory, a survey was developed to gather data to determine environmental awareness, students' personal sustainable behaviors, beliefs about businesses and sport organizations' sustainable behaviors, and students' awareness of environmental sustainability in sport. Higher education institutions can use this information to develop curricula to educate future sports professionals better.

Findings indicated that students expect sport organizations to incorporate environmental sustainability strategies into daily operations more than other organizations. Students were aware of and participated in sustainable measures (e.g., recycling) at sporting events, and they desired to work for a sports organization that supports environmental sustainability. However, they were unwilling to pay more for a ticket to promote sustainability. Furthermore, although there was no statistically

significant difference between the values, beliefs, and norms of undergraduate and graduate students, there was a significant statistical difference in behaviors. Variations in environmental educational possibilities, exposure to on-campus environmental efforts, sporting activities, or simply personal experiences, such as where they reside, could explain the differences. Awareness of environmental sustainability may not be sufficient to facilitate action; knowledge is what may be necessary to connect the gap. To be successful, future sport management professionals will need to learn about environmental sustainability, which will necessitate a collaborative effort between higher education institutions and the industry to provide more educational and practical opportunities for students.

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CHAPTER ONE
INTRODUCTION AND GENERAL INFORMATION

From Environmental Sustainability in Sport to Sport Ecology

Over the past few years, climate change and environmental awareness have become controversial topics everywhere, from political arenas to higher education classrooms (Nerlich & McCleod, 2016). In recent years environmental changes in North America have been seen as wildfires scorch the west and hurricanes pound the east coast. However, there is no generalized public consensus on climate change despite the scientific evidence (Deryugina & Shurchkov, 2016). The spectrum of belief and value on the natural environment and climate change is vast and wide as a rainbow arching across a blue sky. Regardless of an individual's belief, it is hard to dispute the scientific evidence on the subject and the changes to our planet (Oreskes, 2004, 2018).

One of the areas that is being significantly affected by changing climate and weather is sport. Outdoor sporting events and recreation activities have been transformed from natural to artificial settings due to human beings' anthropogenic activities (Orr et al., 2020). Outdoor ponds are no longer freezing, causing the sport of hockey to be steered away from its roots and brought indoors to be played (Fairley et al., 2015). Ski slopes do not have sufficient natural snowfall slopes and are moving into massive warehouses with artificially blown snow (Mallen & Chard, 2011; Rutty et al., 2015). Kayak courses are now designed and human-made due to changing river conditions which is now the norm for elite competitions (Ridge et al., 2007). Athletes have suffered respiratory issues from inhaling smoke when competing in the Australian Open during the December 2019

wildfires (Booker, 2020). Professional sports leagues have shown grave concern over the smoke emanating into the ballparks from the California wildfires in 2020 (Beaten & Diamond, 2020). Football games that had been hastily relocated, canceled, or postponed due to impending hurricanes and extreme weather on the east coast of the United States have caused legal disputes (Murfree & Moorman, 2021). Special sports events, such as the 2019 Tour de France, were historically altered due to unexpected summer snow and hailstorms in the mountains that caused catastrophic landslides (Lowe, 2020). Most recently, the United States Olympic track and field trials were suspended due to a historic heat wave in the Pacific Northwest (Pells, 2021). Fans were evacuated and a collapsed athlete carted off the field in a wheelchair as temperatures soared to 108 degrees in Eugene, Oregon.

As the above evidence illustrates, the natural environment is now significantly impacting sport and sport participation in various ways. However, the relationship between sport and the environment has been present for many years and is bi-directional, meaning sport has also been leaving its mark on the environment (SEG, n.d.). During the 2009 Ziegler Lecture, Dr. Lucie Thibault addressed the relationship between the global environment and sport and the detrimental ecological impact that sport leaves behind. Sadly, damage to the environment from global sports events is not a new revelation. As early as the 1930s, concern for the damage to the environment was shown by various stakeholders involved with the host countries of the Olympic Games (Kietlinski, 2020). However, sport professionals and academics have finally started to develop approaches to address pertinent issues (McCullough et al., 2020, Mercado & Grady, 2017; Trendafilova

et al., 2014). The concern for the natural environment has prompted two environmental initiatives: reducing the ecological footprint that sport leaves behind and using the sports platform to raise environmental awareness (Trendafilova et al., 2014).

Over the past twenty years, scholarship in academia and practical applications of environmental sustainability in sport in the industry has continued to rise and is now one of the topics at the forefront of conversations between both academia and industry (Green Sports Alliance, 2020; Mallen & Chard,2011; McCullough et al., 2020; Mercado & Grady, 2017). Mallen et al. (2011) compiled a comprehensive review of environmental sustainability research. The study's focus was to identify and examine the breadth of scholarship published in sport-related journals. The research team found 21 sport-related academic journals that included 4,639 peer-reviewed articles published from 1987 to 2008. This first review of the literature identified areas under-emphasis and recommended future research areas to help move environmental sustainability in sport out of its infancy stage. An under-emphasis was noted on environmental sustainability as only 17 articles were found on the subject.

To report on the growth of environmental sustainability in sport, Trendafilova et al. (2014) used semi-structured interviews, website analysis, and published documents to gauge the overall current state and future trends in environmental sustainability in both sport scholarship and industry. The authors concluded that sports organizations are taking constructive measures to resolve the adverse environmental effects of their activities, resulting in increased corporate credibility, avoided legal action, cost savings, and improved partnerships with critical stakeholders. To further evaluate the upward trend in

environmental sport sustainability research, Trendafilova and McCullough (2018) published a rapid review of environmental sustainability literature. The rapid review evaluated published work on environmental sustainability over 11 years, determining if scholarship in this area is or is not addressing the endeavors of the sport industry.

Trendafilova and McCullough (2018) showed scholarship growth within the discipline as manuscripts addressing sustainability in sport have steadily increased in number. Additionally, the authors highlighted the importance of research that the Green Sports Alliance (GSA) has embraced. The GSA is the "environmentally-focused trade organization that convenes stakeholders from around the sporting world (teams, leagues, conferences, venues, corporate partners, governmental agencies, athletes, and fans) to promote healthy, sustainable communities where we live and play" (Green Sports Alliance, 2021). The GSA continues to grow, expand, and share resources every year. It now boasts over 600 organizations, teams, and venues as members from 17 sport leagues and 14 countries (GSA, 2018). Additionally, Green Sports Alliance Japan was launched as a sister organization in April of 2018.

The advancement of scholarship related to environmental sustainability in sport has led to the birth of a new sub-discipline within sport management. A conceptual manuscript was published in the Journal of Sport Management, recognizing, and establishing this new sub-discipline called sport ecology. The authors define sport ecology as "the study of sport, the natural environment, and the bidirectional relationship between the two" (McCullough et al., 2020, p. 1) McCullough et al. (2020) argued that most sport literature published since the 1990s has only focused on how sport has

affected the environment. The authors demonstrate a disconnect of literature on the bidirectional relationship between sport and the natural environment. McCullough et al. (2020) present arguments for why sport ecology should become a subdiscipline of sport management. Specifically, there is a critical mass of research in the discipline, the urgency of tackling environmental issues is palpable and mounting, and the natural environment is so entwined with sport that a subdiscipline such as sport ecology could enhance and progress research in other sport subdisciplines.

McCullough and colleagues' work has contributed to the formalizing of sport ecology as a legitimate sub-discipline of sport management. Furthermore, this led to Dr. Madeline Orr's efforts to create the Sport Ecology Group (SEG), which she co-directs with Dr. Brian McCullough. The Sport Ecology Group was established in 2019 with eight original members. Since then, due to growing interest in the topic of sport ecology, the group has grown to 14 members from around the globe and now boasts an advisory board with a team of sport sustainability industry leaders who support the work of the SEG members by providing the group with information and assistance to help address the most challenging environmental issues. The mission of the SEG is "to produce high-quality research in sport ecology, catalyzed industry-academy knowledge exchange, raise public awareness of sport ecology-related topics, and create opportunities for students to learn and grow as professional" (SEG, n.d., About section). The vision of the SEG is straightforward as "a community of academics seeking to share our research with a broader audience than traditional academic journals will allow. We are guided by a simple vision: imagine if all people understood and supported the environment with the

same interest and passion they showed their favorite sports teams" (n.d., About section). One of the group's objectives is to create opportunities for students to learn about sport ecology and grow their careers through mentorship. The objective is accomplished through the Graduate Student Mentorship Initiative (GSMI), which is now in its third full year and continually growing and expanding. The GSMI program offers students guidance and knowledge from sport industry and academic professionals. Additionally, students have access to the SEG database of research on sport ecology, personalized reading lists, and monthly group meetings with specialized topics and discussions on the pressing issues being faced in the industry and by scholars. (Sportecology.org, 2021). This GSMI program is an example of collaboration by experienced practitioners and industry to help forward environmental sustainability in sport by providing mentorship, knowledge, and direction to the next generation of sport management professionals.

Study Purpose and Significance

Regardless of personal beliefs, there are environmental issues that sport management professionals, both current and future, will have to address and find solutions for sport to continue and thrive in these changing environmental conditions (Greenhalgh et al., 2015; McCullough et al., 2020; Orr et al., 2020). Higher education students should be aware of the current environmental state in sport and learn about environmental sustainability as they complete their studies and move forward into their professional careers (Casper & Pfahl, 2012; Casper et al., 2012, Graham et al., 2018). As the sport industry continues to embrace and includes environmental sustainability in its operations (Mercado & Grady, 2017; Trendafilova & McCullough, 2018), qualified

personnel will be needed to find creative solutions for organizations and institutions to navigate the environmental challenges they will face (Mercado & Grady, 2017). For example, the better education that sport management students receive in higher education, the better prepared they will be to help prospective employers overcome some of the known obstacles that sport organizations face when implementing environmental initiatives. The growth of educational opportunities is a continued need for developing a thorough awareness and understanding of environmental sustainability across the sport industry (Graham et al., 2018).

As researchers and educators, it is vital to assess the current level of students' values, beliefs, norms, related to environmental sustainability. Additionally, evaluating sport management students' awareness regarding environmental sustainability in sport and sport ecology may help higher education institutions develop better curricula to prepare students for their professional careers in sport. To that point, Mercado & Grady (2017) claimed that when faculty are designing a plan for introducing and incorporating environmental sustainability into programs and classrooms, it is imperative to first evaluate and understand the students' current level of awareness of environmental sustainability, including personal daily practices. An assessment will act as a starting point when designing curricula to ensure students are ready to learn about the topics that are in the course.

Therefore, this research aimed to evaluate students' values, beliefs, and norms relating to environmental sustainability in higher education institutions across North America. More specifically, students enrolled in both undergraduate and graduate-level

sport management programs. Whitley and colleagues (2018) state that undergraduate students' environmental values, beliefs, and norms can fluctuate during different years in college. Therefore, using samples from both undergraduate and graduate students in the study produced a more accurate representation of the study population. The information gathered in this study provides researchers with data to understand the following: the current state of environmental values, beliefs, and norms of sport management students, and how their values, beliefs, and norms relate to personal behaviors and their beliefs regarding sport organizations sustainable operations. This information will allow faculty and higher education institutions to discuss how to create and frame curricula to better prepare future professionals in the sports industry.

CHAPTER TWO
LITERATURE REVIEW

Sport has been around for centuries. In 776 B.C., Greece hosted the first Olympiad (HistoryWorld, n.d.). However, it has not been until recently that sport organizations have been actively trying to become more environmentally responsible at the collegiate, professional, and international levels (Babiak & Trendafilova, 2011; Trendafilova & McCullough, 2018; Trendafilova et al., 2013). Additionally, more research has been conducted to evaluate the current and emerging state of sustainability within sport, sport management, operations, facilities, event management, spectators, and fans (Trendafilova & McCullough, 2018). Despite the increase in scholarly research about sustainability in sport, certain areas are just starting to be explored. The following literature review will be organized into four sections: Olympics, professional sport, collegiate sport, and higher education.

Environmental Sustainability in the Olympics

The search for a universally acceptable definition of sustainability has led to many futile attempts. Holden and colleagues (2008) investigated the various meanings of sustainability using the instrument of the "language game," developed initially by philosopher Ludwig Wittgenstein. The authors examined sustainability as a "language game" during the 2010 Vancouver Olympics planning stage to consider the possibility of international and local circumstances for sustainability successes and shortfalls. The authors considered four possible scenarios. In the most hopeful scenario, sustainability language congregates throughout the international and local language schemes,

supporting the progress of sustainability in Vancouver policy, allowing other Olympic cities to follow suit, and generating institutional change within the IOC. In the opposing scenario, the failure to find a common place in sustainability could set back Olympic cities' environmental future and policy procedures in Vancouver. Two other mixed outcome scenarios are considered in the study. The results lend a greater understanding of the boundaries of the meaning of sustainability in a mega-event setting. The authors conclude that the conveyed message of sustainability may be the Olympics' most lasting legacy.

The Brundtland Report of 1987 was one of the catalysts that heightened concern for the impact human beings have on the environment (Ross & Leopkey, 2017; Ross et al., 2018; World Commission on Environment and Development, 1987). At the Centennial Olympic Congress in 1994, after public outcries and pressures from stakeholders (Mallen & Chard, 2011), the International Olympic Committee (IOC) adopted the environment as the third pillar of the Olympics (Cantelon & Letters, 2000; Holden et al., 2008; Weiler & Mohan, 2010). In 2000, Sydney, Australia hosted the first-ever official "Green Games" after making environmental sustainability a priority in the IOC bidding process (Karamichas, 2012), but Rio 2016 failed to fulfill its sustainability pledge and promises to the athletes and residents (Boykoff & Mascarenhas, 2016). Now, the sustainable world holds its collective breath. Can Japan 2020 accomplish its ambitious promise of sustainability "Be better, together – For the planet and the people" (Olympics, 2021)? Furthermore, how do the organizers of the Paris 2024 Olympic Games

plans on becoming “the first major sporting event to positively impact the climate” (Paris2024, n.d.)?

The Olympics and the Environment in the 20th Century

Pierre de Coubertin resurrected the Olympics in 1896, thus creating a unique event that would become an international mega-event by connecting it with a proclaimed philosophy called “Olympism,” and a collaborative practice called the “Olympic Movement” (Weiler & Mohan, 2010, p. 188). “The goal of the Olympic Movement, according to the Olympic Charter, is to contribute to building a peaceful and better world by educating youth through sport practiced without discrimination of any kind and in the Olympic spirit, which requires mutual understanding with a spirit of friendship, solidarity, and fair play” (Weiler & Mohan, 2010, p. 188). Intriguingly, it would not take long for the environment to become a discussion in the Olympic context. According to Kietlinski (2020), evidence shows that the environment was of concern to the Olympic Games organizers as early as the 1930s. They wanted Japan to clean up their environment and image for the international visitors attending the Games. Furthermore, Chappelet (2008) and Gold and Gold (2013) discussed the controversy surrounding the Winter Olympic Games and the environment starting with the 1932 Winter Games in Lake Placid. A local activist group protested against the falling of 2,500 trees to build the bobsled run. The activist group (Association for the Protection of the Adirondacks) was effective in their plight, with the aid of New York State law, and ultimately an alternate site for the venue was found. Chappelet (2008) and Gold and Gold (2013) show examples of environmental legacies (debacles and successes) throughout the 20th Century that led

to the rise of the environment as a pillar of the Olympic Games. However, despite the concern, the environment did not become a presence in the IOC bidding process until the 1970s when citizens, organizations, and coalitions effectively voiced their support for the environment, not the mega-event. Denver citizens and environmental supporters held a referendum in 1974 and subsequently rejected the IOC's bid award to host the 1976 Winter Games, citing too much environmental damage to the area (Chappelet, 2008; Lenskyj, 1998). Subsequently, opposition due to the environmental risk was also seen in Toronto (1989-90) during bids for the 1996 Summer Olympic Games and Rome (1997) for the 2004 Summer Olympics (Lenskyj, 1998). Due to surmounting pressure from various stakeholders surrounding the Olympic Games, IOC President Juan Antonio Samaranch suggested adding the "environment" as the third pillar of Olympism in 1986 (Ross & Leopkey, 2017). Despite this decision, it would take years before the environment was brought to the forefront of the bidding, planning, and hosting of the Olympic Games.

The 1990s saw an unprecedented time in developing environmental sustainability for the IOC and the Olympic Games. In 1991, the IOC modified its Charter to propose that the Olympic Games host cities should care for the natural environment (Chappelet, 2008; Gold & Gold, 2013; Ross & Leopkey, 2017; Ross et al., 2019). This amendment to the Charter included: environmental requirements for bidding cities, environmental policy, and created a Commission on Sport and the Environment (Lenskyj, 1998). It is the ultimate responsibility of the host cities to ensure a positive environmental legacy as

directed by the IOC with the ecological projects led by the Olympic Games Organizing Committee to plan at the local level (Ross et al., 2019).

During the Charter amendment, the planning of the 1994 Lillehammer Olympic Games (known as the first environmentally friendly Games) was well in progress, addressing the environment, and trying to avoid the environmental results of the Albertville Olympics in 1992, which were considered a disaster. The environmental failure of Albertville and the success of Lillehammer decisively positioned the term ecology into the minds of the IOC (Cantelon & Letters, 2000). "Lillehammer proved to be a solution to Albertville's critiques while also offering the IOC an opportunity to redeem its now damaged environmental reputation" (Pentifallo & VanWynsberghe, 2012, p. 430). In 1994, at the Centennial Olympic Congress, the environment was thrust into the forefront of the Olympic Games when the IOC formally added the “environment” as the third pillar of the Olympism alongside sport and culture (Gold & Gold, 2013; Ross & Leopkey, 2017, Weiler & Mohan, 2010).

Further emphasis on the environment was seen in 1999 at the *IOC World Conference on Sport and Environment* when the United Nations Agenda 21 was adopted to help the IOC create its framework for environmental sustainability (Ross & Leopkey, 2017; Ross et al., 2019). The United Nations (2021) definition follows:

> Agenda 21, the Rio Declaration on Environment and Development, and the Statement of principles for the Sustainable Management of Forests were adopted by more than 178 Governments at the United Nations

> Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, 3 to 14 June 1992 (para. 2)

Amendments to Olympic policy on environmental sustainability continued in the 21st century with the creation and adoption of Agenda 2020, which acts as a roadmap for the Olympic Movement's future by providing a set of 40 comprehensive recommendations whose principal goal is to protect the Olympic values and fortify the role of sport in society. (IOC, 2021; Ross & Leopkey, 2017).

Environmental Sustainability in the Olympics

Ross and Leopkey (2017) explored environmental management's evolution in the Olympic Games using Institutional Theory, examining over 100 documents from the IOC archives, including past bids. The authors found that initial efforts to integrate environmental management into the Games resulted from the need to minimize negative environmental impacts. Environmental management eventually evolved into a focus on sustainable outcomes for the community and further minimized any environmental impact of the Games. Olympic Organizing Committees mimicked previous successful Games bids' environmental management plans and responded to pressures from the IOC and society when espousing environmental practices. As a result of the evolutionary track, Olympic bids' environmental management proposals are increasingly similar as pro-environmental behaviors have been institutionalized within the greater Olympic Movement. Langenbach and Krieger (2017) tracked the IOC's environmental policy's progress by examining the IOC Session protocols. The authors aimed to connect the environment to the Winter Olympic Games in Albertville in 1992 and Lillehammer in

1994. The IOC addressed the environment more robustly due to the environmental disaster of the 1992 Winter Olympic Games. After the disastrous results at Albertville, the IOC established a global environmental policy in 1995 for the Olympic Movement (Olympic Agenda 2020) with the Lillehammer Olympic Organising Committee (LOOC). The authors show how progress has been slow. “Whilst consideration for the environment can be dated back to the Ancient Olympic Games, it is important to note that it took the IOC (founded in 1894) almost a century to enact its first environmental policy” (Langenbach & Krieger, 2017, p. 16).

Paquette and colleagues (2011) published the first literature review focused on environmental sustainability (ES) in the Olympics. The findings indicated that the IOC and OCOGs CEM templates were dissimilar. “The results provide one indication of how poorly the Olympic Movement meets the goals of its Agenda 21 initiatives and reveals ES within the Olympic Movement is highly problematic” (Paquette et al., 2011, p. 364). Geeraert and Gauthier (2018) illustrate that the International Olympic Committee (IOC) has put a great emphasis on environmental sustainability for over two decades but has fallen short of its ecological targets or has caused direct environmental damage. The authors demonstrate that the IOC's instruments for regulating the Games organizers are inadequate. They do not alter the incentives (in terms of agency costs) of organizers to comply with environmental sustainability targets. Recent changes introduced by the IOC's Agenda 2020 reforms do not fix this problem. They recommend that the IOC employ qualified third-party experts to aid in the selection process and introduce sanctions that will be imposed if the hosts do not meet the sustainable goals. However,

the authors discuss why recommendations of the study may not be implemented. “The IOC may also be concerned that strict environmental requirements or the possibility of sanctions will scare away potential hosts, resulting in a smaller pool of hosting candidates. This reasoning may be flawed, however, as aspiring hosts will certainly be able to generate more local support for their bid if the negative effects of hosting the Games are minimized and positive effects are maximized” (Geeraert & Gauthier, 2018, p. 27).

Similarly, Ross and colleagues (2019) examined the major stakeholders in the Olympic Games' environmental management through a case study of archival data. These stakeholders include the IOC, organizing committees (OCOGs), local governments, environmental organizations, and sponsors. The IOC employs a range of convincing, frame working, and voluntary guidelines to encourage environmental management participation by these stakeholders along with the Host City Contract. “Threats to take away funding, charge for damages, complete tasks on their own, or revoking the Games altogether appear to be the IOC’s strongest mechanisms for enforcement of their policies” (Ross et al., 2019, p. 347). However, the authors found that many of these governance policies have limited actual enforcement procedures in place. Likewise, Samuel and Stubbs (2013) explored how "green" legacies are planned and managed by conducting interviews with key stakeholders. The analysis revealed that each city was unique, and the influence of the local cultural, infrastructural, governmental, and social pressures influenced green legacies. As such, there is no “one size fits all” solution to creating green legacies. “The concept of legacy is relatively new within Olympic circles: it

appeared in the 1990s, during the organizational phase of the 1996 Atlanta games. The private organizers of these centennial games felt compelled to highlight what they would leave behind for the host city" (Chappelet, 2008, p. 1885).

Del Fiacco and Orr (2019) conducted a chronologic systematic review of the literature to demarcate environmental sustainability leadership changes in the Olympic Movement through a historic account. The authors identified four eras, divided by different leadership and commitment levels concerning the natural environment: (1) public-motivated environmental sustainability, (2) host city-motivated environmental sustainability, (3) International Olympic Committee-directed environmental sustainability, and (4) environmental deterioration. Furthermore, despite positive environmental policy changes from the IOC, environmentalism has regressed. Growing public perceptions that the Organizing Committees of the Olympic Movement and the Olympic host city are socially, environmentally, and economically responsible have made incorporating the values and initiatives of sustainability a common subject in the bids of cities vying to host the Games (Weiler & Mohan, 2010). To understand the increasing position of environmental sustainability as an Olympic theme and by looking at the main Olympic Games and bids in this process, Weiler and Mohan (2010) traced the history of the Olympic Movement's environmental aspirations. The authors conclude that it is impossible to unlock the Olympic Games' ability to use sport to draw new spectators to sustainable living without credible attempts by the IOC and Organizing Committees to "practice what they preach." Attempts should include the adoption of mechanisms that create, trace, and inform on vital economic, environmental, and social outcomes relevant

to the Games and cooperation with credible NGOs. Furthermore, establishing the groundwork to explore the Olympic Games' unrealized potential to change the way individuals and organizations behave with sustainable living choices, may lead to more positive outcomes.

Other facets of Olympic research pertain to knowledge gleaned and shared comparisons and predictions of events and outright criticisms due to sustainable outcomes. Environmental sustainability knowledge is often shared from one organization to another. This is especially true in the Olympic Games context, where organizers share their knowledge on environmental efforts with organizers of future editions of the Games. Müller (2015) conducted 51 interviews with IOC staff and Olympic Games organizers, observations, and document analysis to discuss how environmental sustainability policy in the Sochi 2014 Winter Olympic Games was unable to attain all ecological promises made in the initial bid for the Winter Games. Specifically, he examined how environmental sustainability policy was mobilized (or immobilized) through the conveyance of knowledge to Sochi from previous Games, transforming that knowledge and policy into the Sochi Winter Games context, and lastly, the translation of those policies into action (and inaction). The author concludes that the failings of environmental sustainability policy in the Sochi Winter Games may relate to dysfunctional governance, lack of institutional controls, time pressures, and scaling issues. This led to irreversible environmental damage, excessive scoping of the Games to be too large for their community, limited engagement with the public by the organizing committee, limited benefits to the host community, and a limited focus on showcasing

environmental sustainability in only the most high-profile buildings and methods. “The damage to the Mzymta, a major mountain stream in the Sochi area, is a case in point for the transformation and translation of international best practice in the Russian context and the resulting failure to meet essential sustainability goals” (Müller, 2015, p. 192).

The most recent Olympic Games to come under harsh criticism for lack of environmental management is the 2016 Rio Games. Interestingly, four years before the actual event, Pentifallo, and VanWynsberghe (2012) discussed how Rio de Janeiro, Brazil, “will be to blame” for the potential environmental issues as an Olympic host city. Rio, through its bid, had effectively raised the stakes in matters of environmental protection and sustainability. The authors suggest that isomorphic pressures functioning within the organization encourage Bid Organizing Committees (BOCs) to propose environmental initiatives comparable to and progressively more aspiring than previous successful bids. Rio's bid signifies the latest Olympic host city pushed to reproduce and inflate environmental protection elements and environmental sustainability. The authors explained why BOCs have surfaced as an accountable party for improving the vision of environmental sustainability in the Olympic Movement even though the International Olympic Committee's efforts to improve environmental sustainability have been less effective. “Despite a high level of ‘environmentally friendly’ rhetoric from the IOC and strong integration of environmental considerations into the bidding process, the actual assessment of the environmental impacts of an event such as the Olympics remains problematic” (Scott et al., 2015, p. 916). Boykoff and Macarenhas (2016) examined the legacy of environmental sustainability of the Olympic Games through the lens of the

2016 Rio Olympics. To rally public support, Olympic Game organizers presented more than 25 legacies. Approximately half of legacies directly referred to environmental issues (e.g., environmental tasks such as cleaning up Guanabara Bay) or subtly pointed to environmental benefits (e.g., creating public transportation networks such as the Bus Rapid Transit system) (Boykoff & Macarenhas, 2016). Unfortunately, the environmental legacies did not come to fruition. The authors suggest that despite Rio's promise of sustainable development for the area, there was a "monstrous abyss" between the environmental promises and reality. The authors conclude that “when it comes to the Olympics, a significant gap exists between environmental sustainability rhetoric and reality” (Boykoff & Mascarenhas, 2016, p. 8). Similarly, Gold and Gold (2020) examined the relationships between remediating land for future Olympic event venues and pursuing a lasting legacy. The authors investigated ways to reimburse for the costs and hassle encountered initially in hosting the Games. They explored ways that renovation of the substantial spaces planned for event venues takes its position in more comprehensive approaches meant to offer long-term gains to the host city and community.

Nonetheless, the environmental issues that have been seen in Rio have spurred learning opportunities for others. As the understanding of environmental sustainability and its purpose concerning the Olympic Games evolves, Rowberg and Rincker (2019) considered the environmental sustainability objectives and outcomes of the Rio 2016 Olympic Games compared to the plans for the Tokyo 2020 Olympic Games. Using a weighted sum assessment, the authors compared the environmental sustainability scores for each host city's Sustainability Plan and pre-game reports using nine sustainable

dimensions. Tokyo 2020 scored significantly higher than Rio 2016 (14 and 8, respectively). Legacy stories that have emerged from Rio 2016 may be used to help define and predict environmentally sustainable impacts from future Olympic host cities. Similarly, Trendafilova and colleagues (2017) examined the challenges Rio faced preparing to host the 2016 Summer Olympics Games. “The Rio Olympic Organizing Committee was unable to meet its promise of capturing, treating, and cleaning 80 percent of the water entering Guanabara Bay” (Trendafilova et al., 2017, np).

Lastly, to show the continually increasing effects of climate change, Scott and colleagues (2015) used climate change scenarios with two key climate indicators to predict the ability of 19 previous host cities/regions of the Winter Olympic Games to provide appropriate settings for future outdoor winter sport events. Results indicated that all 19 former Olympic Winter Games (OWG) hosts have suitable climates to host the event in the 1981-2010 period. However, only 10-11 are predicted to stay viable in the 2050s and only six by 2080s. The analysis reveals that changing climates will have significant consequences for the future OWG host cities/regions in addition to broader repercussions for winter sport involvement as the Olympic Winter Games prepare to commemorate its first centennial in 2024. “Although the consequences of climate change will vary geographically, it is inevitable that all nations and economic sectors will have to adapt to additional climatic change in the decades ahead” (Scott et al., 2015, p. 916). In conclusion, the IOC has been gradually addressing environmental sustainability in the Olympics with the addition of the environment as a pillar. The IOC has added multiple environmental policies for host cities and Organizing Committees to consider and

implement to reduce the environmental impact of the Games. However, despite the intentions of the IOC, the host cities' execution of the planned environmental legacies at the Olympic Games has fallen short of expectations leaving critics wondering if true environmentalism is truly possible at a mega-event.

Environmental Sustainability in Professional Sport

Trendafilova et al. (2013) focused on the institutional influences shaping environmental sustainability efforts in the major sport leagues in North America. Results indicated that media played a crucial part in the nature and scope to which sport organizations incorporated environmental initiatives within their daily business practices. Some of the benefits related to environmental sustainability efforts were avoiding legal repercussions, cost savings, and fostering more significant relationships with stakeholders. Overall, scrutiny, regulation, normative and associative pressures impacted the dispersion of environmentally friendly initiatives among sport organizations. Following up on this study to delve deeper into understanding how professional sport teams and leagues comprehend, assign, and adopt environmental initiatives, Trendafilova and Babiak (2013) conducted interviews with various sport executives in North America. The results revealed that environmental practices were seen as strategic by teams and leagues and played a vital part in their organizational practices.

Ciletti and colleagues (2010) examined the websites of 126 professional sport teams in the United States to understand how sport organizations communicate their triple-bottom-line initiatives and sustainability practices. The content of each website was individually analyzed for evidence of sustainability efforts along 12 categories: energy

usage, water use, pollution/emissions, waste, building/grounds, compliance/accountability, philanthropy, community participation, children, employment and labor practices, vendor/supplier relationships, and transport (Ciletti et al., 2010). Results indicated that the majority (96%) of the teams' websites' home pages communicated social sustainability principles, 33% communicated environmental sustainability, although none communicated economic sustainability. The MLB led the other leagues in communicating environmental sustainability: 97% of their teams' sites communicated environmental sustainability compared to only 32% of NBA teams, 6% of NHL teams, and 0% of NFL teams. A similar study was conducted by McCullough et al. (2020), aiming to discover the communication strategies through website communications explicitly related to environmental initiatives in sport organizations from the five major professional sport leagues in North America (NFL, MLB, NBA, NHL, and MLS). The study revealed that only one team (Cleveland Indians) published a standalone environmental sustainability report on their website, 25 teams (17%) had a webpage dedicated to environmental sustainability, and only 11 teams (7.4%) referred to environmental sustainability on their website (McCullough et al., 2020). Furthermore, three teams (New York Giants, New Your Jets, and New York Mets) had published sustainability reports associated with the venue website, 13 teams (8.8%) had dedicated web pages on the venue website, and only 11 teams (7.5%) made mention of environmental sustainability. The authors argue that the lack of reporting poses numerous questions worthwhile of further consideration for academics and for professionals to understand why environmental sustainability metrics are not being reported.

Along the same lines, Mallen et al. (2013) focused on environmental sustainability website communications of the sport facilities that housed Major League Soccer franchises during 2011. The results indicated an environmental pattern that those venues communicated regarding renewable resource use, resource reduction, and recycling. It was concluded that environmental resources are increasing, but continuous study is needed to understand the impact of sustainable communications during this time of ecological crisis. Francis and colleagues (2017) also examined the environmental sustainability initiatives highlighted on 19 professional United States soccer teams' and associated venues' websites. The website data were separated into the following categories: stadium design, efficiency, and functionality; waste reduction, recycling and composting; sustainable food alternatives; community outreach; and a variety of additional aspects (Frances et al., 2017). The results indicated that teams are engaged in some form of pro-active practices to further environmental sustainability objectives. The most sustainable activities can be seen in the Western Conference where the Timbers, Sounders, Whitecaps, Galaxy, and Chivas USA's home venues are located.

Given professional sport's widespread appeal across cultures, notable teams' embrace of pro-environmental measures can promote positive social change among fans, viewers, and supporters. The new building or refurbishment of venues with environmentally friendly features is possibly the most conspicuous emblem of environmental stewardship for organizations. Unfortunately, research on sport venues showed that only 40% of new stadium construction in North America was environmentally friendly (Kellison et al., 2015). To this point, Kellison and Kim (2014)

conducted interviews with sport administrators who were familiar with their organizations' sustainable facility design and initiatives through LEED certifications. Results indicated the potential for environmentally conscious buildings to attract new fans, suggesting that there may be a strong interaction between the social and economic aspects of the triple bottom line (i.e., people, planets, and profit). The authors argued that when a teams' leadership communicates strong pro-environmental business philosophies, the organizations' attention to environmental causes is prioritized.

Kellison and Orr (2020) examined the extent to which stadium replacement relied on climate justifications and whether new stadiums adequately address the climate hazards used to justify their construction. The authors investigated three examples of recent early stadium replacements justified by climate change. Globe Life Field in Arlington, Texas, was built with a roof to ensure athletes were not at risk by practicing in the extreme heat of the Texan summer. In California, Oakland Ballpark was built to last for an extended period and is designed to withstand the sea-level rise and shifting weather patterns. Marlins Park was designed to hold up in the most extreme wind and weather conditions in Miami, such as hurricane-level winds, and minimize potential damages. Results illustrated that even though all three examples meant replacing a remaining venue, only in Texas was climate adaptation clearly mentioned as the principal purpose for stadium replacement. Replacement plans in Oakland and Miami included substantial and pricey design elements to protect the venues from extreme weather. In each case, however, the climate vulnerability of the sports organization involved was reduced due to the new infrastructure. It was concluded that as cities and metropolitan areas continue to

struggle with the known and unforeseen impacts of climate change, the associated susceptibility of major sports stadiums can no longer be ignored (Kellison & Orr, 2020).

Trendafilova and colleagues (2021) examined the composition and scale of environmental sustainability endeavors of the four Grand Slam tennis tournaments as communicated through the event or venue website. Results illustrated that Grand Slam events emphasize energy and water savings, sustainable food options, and educating spectators about environmental sustainability. However, formalized strategic planning is missing at the Grand Slam events except for Roland Garros (i.e., the French Open) and each event engages in different paths when engaging with environmental sustainability. This necessitates understanding organizational behavior, tactics, and communication techniques in unison and approaching environmental sustainability more holistically. Talavera et al. (2019) reviewed research on environmental sustainability in sport mega-events and lessons to the environmental sustainability plan for the 2022 FIFA Men's World Cup to be held in Qatar. Similar to the Olympics, the World Cup organizing committee acknowledges the difficulties in integrating environmental frameworks in event planning but hopes to use the 2022 World Cup as an opportunity to promote the growth of sustainable development opportunities in the host country. Talavera and colleagues (2019) also acknowledge the difficulty of hosting the World Cup in Qatar (compared to previous hosts) due to climate, culture, and sporting opportunity differences. Results identified the following areas of opportunity for environmentally sustainable legacies within this World Cup: governance, institutions, social opportunities,

education, economics, buildings, transportation, urban planning, human resources, environment, energy, water, food, waste management, procurement, and climate change.

Concerning fans of professional sports, one avenue that is being investigated by Greenhalgh and Dryer (2020) was to understand if a professional sport organization can show cost savings and increased revenues because of environmental sustainability initiatives. Results indicated that fans would be willing to pay an average of $6.50 more for tickets through an additional environmental sustainability fee to aid the organization in implementing environmental initiatives. These findings challenge conventional thinking and theoretical models surrounding fan behavior and more research needs to be done on this topic. Similarly, Kellison and Cianfrone (2020) investigated how fan attitudes about a professional American football team varied because of fans' self-expressed levels of environmentalism. The results indicated that environmentalist and non-environmentalist fans deviate in certain anticipated ways, but there is a solid base in which professional sport organizations could participate and endorse environmental stewardship to the whole fanbase, not just the ecological-conscious portion. Teams may develop a “superordinate social identity” to surmount political disparities among fans, thus increasing fans’ awareness of the team’s environmental sustainability programs and increasing support for environmentalism (Kellison & Cianfrone, 2020). In conclusion, over the past decade, literature has comprised broad topics relating to environmental sustainability in professional sport. A great deal of the literature is interconnected and pertains to website communication, venues, events, and fans. To this point, Carmichael (2020) provided a commentary stating the need for sport ecology research to go beyond

the contexts and theoretical perspectives provided thus far in current literature that is focused on the broad term of sustainability.

Environmental Sustainability in Collegiate Sport

Despite having 1,098 member colleges and universities, three divisions, and 102 athletic conferences, there is limited research on the specific National Collegiate Athletic Association (NCAA) divisions and conferences (NCAA, n.d.). This is most likely due to the scope and size of collegiate athletics combined with the newness of research of environmental sustainability in sport. As environmental sustainability continues to be embraced and implemented in the sport industry, it is the natural progression that each level of sport (i.e., international, professional, collegiate) adopt environmentalism into its operations. Collegiate sport is no exception, but despite being known as the "front porch of the university" (Pelcher & McCullough, 2019), collegiate athletic departments have been slower to implement environmental sustainability into operations (Pelcher et al., 2020). Due to the high visibility and status of athletics, therein lies an opportunity for the department to reach a large and diverse audience, and raise awareness about environmental issues (Barret et al., 2019; McCullough et al., 2018; Pelcher et al., 2020). Similarly, although environmental sustainability may be becoming a focus of many higher education institutions, the level of sustainable commitment may vary greatly between campuses and even departments. For example, Pelcher et al. (2020) examined higher education institutions' participation in (AASHE's) Green Athletics category in the sustainability tracking, assessment, and rating system (STARS) sustainability report, evaluating how collegiate athletic departments participate in the various categories within

Green Athletics. The analysis found that of the 335 institutions that currently participate in the STARS reporting tool, 247 rated institutions were part of the NCAA. Only 50 of the institutions tried to attain points in Green Athletics and just 21 institutions were successful (Pelcher et al., 2020).

Casper et al. (2012) explored the environmental sustainability practices, organizational strategies, and personal perspectives of collegiate athletics department personnel in the NCAA Division I Football Bowl Subdivision (FBS) universities. The results insinuated that athletic departments are aware of the broad environmental sustainability issues; nevertheless, this awareness did not necessarily correspond to action. Due to the inconsistency of initiatives, results may not be stellar and may impede future planning. Lastly, having the appropriate resources (human and financial) is necessary for successful environmental sustainability action. Casper and Pfahl (2015) provided a model of environmental ordering, planning, decision-making, and initiative execution within DIII athletic departments. The results were compared to those of DI institutions. The authors found that the majority of DIII participants thought university or college employees rank environmental sustainability initiatives as a high-ranking priority while only one-third of DI institutions held the same beliefs. 94% of the participants confirmed they did not have a Green Team. Recycling, energy conservation, and water reduction were highlighted for most DIII athletic programs. Findings revealed that the athletic director in DIII institutions was the person who would most likely champion environmental issues in the department.

Pfahl et al. (2015) aimed to understand the collaboration efforts between sustainability offices on higher education institution campuses and the respective athletic departments. Results indicated the importance of relationship growth, communication, decision-making expansion, collaborative endeavors, and challenges accompanying associations between the sustainability offices and the athletic departments. Pfahl et al. (2015) concluded that although the sustainability office plays a more significant role in the environmental sustainability decision-making process, collaboration demands a greater understanding of the other. Therefore, it is essential to engage the athletics department personnel even though other priorities are highlighted. A similar study was conducted by McCullough and colleagues (2018). The authors explored cross-sectoral social partnerships (CSSP) in the context of a Green Team (Green Teams are committees comprised of voluntary members with diverse backgrounds who collaborate to conduct environmental sustainability activities). Encouragement from the university's upper administration and Office of Sustainability was viewed as an impetus to the Green Team. Also, the Athletic Director contracted the Green Team because of a proposed major renovation to the football stadium. As associates of the athletic department began to accede to external experts, it allowed new partnerships to inform the athletic department about how to meet environmental sustainability goals, therefore traversing the borders of the athletic department and its usual support system. In conclusion, because CSSPs (like the Green Team) operate autonomously with an overarching goal to advance environmental sustainability, it can bridge the academic–athletic ideological gap and

orient all parties toward a pro-environmental mission. One area of focus for a Green Team is collegiate sport events.

Costello and colleagues (2017) conducted a study at the University of Missouri (M.U.) football stadium during the 2014 season as various stakeholders related to the athletic department strive for zero waste. Zero-waste means "designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them" (Costello et al., 2017, p. 2). A generally accepted goal for zero waste is the 90% diversion of waste from landfills (into compost or recycling). Nonetheless, reaching 90% waste diversion at stadiums and arenas is a difficult endeavor that necessitates changes to supply chains, staff and volunteer coordination, and administration, as well as an investment in waste receptacles and fan education. The authors concluded that situations reaching zero-waste compliance were not always the most efficient ways of decreasing GHG emissions or energy consumption; the two most successful methods are avoiding food waste and recycling.

Sport events are known to have large carbon footprints due to the high energy usage of the event, high waste, and travel. The carbon footprint is a term used to describe the total amount of carbon dioxide (CO_2) emissions that are created by a product, activity, or population (Triantafyllidis et al., 2018). The most significant contributor to overall CO_2 emissions at sporting events is transportation. Triantafyllidis and colleagues explored CO_2 emissions from spectators at home and away collegiate football games at two southeastern universities. Data were collected through face-to-face interviews at one

on-campus football game and one off-campus football game. In terms of transportation CO_2 emissions, results indicated that off-campus events can have lower emissions. Similarly, Dolf and Teahan (2015) evaluated the carbon footprint of team and spectator travel at minor varsity sports events held at the University of British Columbia. A Life Cycle Assessment (LCA)-based method was used to determine the carbon footprint. On a per-person basis, event spectators left a lesser ecological footprint than teams but a greater overall carbon footprint. The most significant chances for footprint reductions by both spectators and teams are plans that lessen long-distance air travel, boost vehicle occupancy (e.g., carpooling), and promote low-emission travel modes.

Scholarship has also looked at the relationship between athletic departments' environmental sustainability initiatives and fan behaviors. Inoue and Kent (2012) explained how a sport team could encourage spectators to participate in pro-environmental behaviors. Results indicated that positive environmental stewardship by a team increased the spectator's acceptance of the team's values. Sequentially, the improved acceptance facilitated the relationship between environmental practices and pro-environmental behavior determined by two behavioral objectives: intention to support the team's environmental initiative and intention to participate in daily pro-environmental behaviors (Inoue & Kent, 2012). Building on the work of Inoue and Kent (2012), Casper and colleagues (2014) evaluated collegiate sport fans' environmental behavior intentions at a Division I football game with a gameday focus on environmentalism. Most respondents (79%) were not aware of the topic before coming to the event, and only 2% of the respondents effectively remembered the Green Game

slogan. However, most participants (over 75%) participated in tailgate and stadium recycling and expected athletic departments to incorporate environmental sustainability into sport events. Fan education can positively impact game day sustainable behaviors (Casper et al., 2014).

Casper and colleagues (2017) also examined the degree of fan engagement impact from a Division I collegiate environmentally-themed games. Results indicated that fans want and expect home athletic departments to engage in environmental action. In addition, initiatives taken by the athletic department had a positive influence on fan behaviors at a home event. Furthermore, Casper and colleagues (2020) assessed fans' values and norms associated with the natural environment and opinions of the fan engagement environmental programs that affect sustainable behaviors at events. Norms related to home games had a significant connection with positive opinions of the three in-game environmental sustainability initiatives while motivating at-home environmental behavioral intentions related to composting. However, fans' environmental predispositions (e.g., more/less pro-environmental) were not related to receptiveness, awareness, and influence. The results of these studies give practical assistance to industry assertions of the capability to use the sport platform to involve new populaces with environmental education, awareness, and communicate messages to promote positive, sustainable behavioral change (Kim et al., 2021). Moreover, these environmental sustainability initiatives may allow athletic departments to create new sponsorship opportunities (Casper et al., 2014; 2017; 2020). Looking from a different angle, Walker (2013) examined whether a university's environmental initiatives can impact donor

behaviors. Consistent with previous research, the results confirmed that donors' disposition and attitude toward environmental initiatives predict donation intentions. Adopting, implementing, and marketing environmental initiatives can positively influence donors' perceptions and ensuing donation behaviors, making environmental initiatives one mechanism for improving the overall public image of an athletics department and can positively influence donations (Walker, 2013).

Recycling is perhaps the most common form of environmental sustainability in sport. Sport organizations will employ recycling programs because they are straightforward to understand, lower cost to implement, and highly visible to stakeholders (McCullough et al., 2016). Regarding recycling behavior, McCullough (2013) explored the attitudes of spectators towards recycling at sporting events, the ways subjective norms influence spectators' intentions to recycle at a sport event, and the role of apparent behavioral controls in influencing recycling at a large sport event. Results indicated that some participants recognized a positive shift in attitudes, although others' positive attitudes toward recycling faltered. Also, younger individuals are more likely to recycle than older individuals. In general, spectators thought the costs of recycling overshadowed the benefits. Martin and colleagues (2015) explored the influence of a community-based social marketing campaign on the recycling behaviors of tailgaters at a home collegiate football game. Students and student-athletes were used as recycling educators during the campaign. The recycling baseline of collectible materials was determined to be at .13 pounds per person, and the last collection yielded .45 pounds per person, representing an increase in overall recycling after the social marketing campaign. Those who participated

in the intervention reported higher recycling rates than those who did not participate. The intervention was also successful in increasing recycling knowledge among participants.

Focusing more on the political ideology of fans, Casper et al. (2021) investigated sport fans' environmental values, perceptions, and norms associated with awareness, engagement, and effect of the environmental sustainability endeavors of USA collegiate sport based on political affiliation. Political ideology was one of the most potent prognosticators of opinions about environmental sustainability and associated behaviors. Results indicated that self-identified Democrats stated significantly higher pro-environmental values and norms. However, environmental sustainability program engagement supported initiatives awareness, and the impact of initiatives on behavior was politically non-aligned. Additionally, the ascription of responsibility was a significant forecaster of environmental action and behaviors for Independents and Republicans (Casper et al., 2021).

In conclusion, due to the complexity of the collegiate sport sector, scholars need to continue to conduct more research to understand the working environmental sustainability dynamics of departments within higher education campuses, specifically athletic departments. The literature shows how various stakeholders in collegiate athletics (Green Teams) can work together to address pro-environmental measures to reduce the impact of sport on the physical environment. The most common areas of research revolve around collegiate sport events. This includes recycling and fan behaviors at events. However, as environmental sustainability becomes more engrained in athletic departments, areas of research should develop along with environmentalism.

Environmental Sustainability in Higher Education

Campus management, strategic planning, and community engagement within the higher education sustainability movement have made substantial progress since the early 1990s (Savelyeva & Mckenna, 2011). It is essential to demonstrate progress and to reveal one facet of advancement. Scholars have highlighted the magnitude of higher education institution's role in the overall plight to evoke societal environmental change through leadership by publicly committing to environmental declarations. Universities and higher education institutions have been amongst the earliest signatories to environmental sustainability declarations (Adams et al., 2018; Horhota et al., 2014; Wright, 2002). Ultimately, it does not matter how an institution of higher education approaches environmental sustainability. Wright (2002) indicates that there are foundational bases that exist in full-spectrum methods to environmental sustainability. The bases include "sustainable physical operations, sustainable academic research, environmental literacy, ethical-moral responsibility, cooperation amongst universities and countries, the development of interdisciplinary curriculum, and partnerships with government, non-governmental organizations, and industry" (Wright, 2002, p.214).

Numerous colleges and universities are dedicated to preparing students to be talented professionals and responsible citizens who will contribute to a more sustainable future (Gramatakos & Lavau, 2019; Murray, 2018). However, there appears to be a disconnect between what is and what should be regarding sustainable education in higher education institutions. For example, Druckman and Muir (2021) published a viewpoint paper that examines the use of environmental sustainability frameworks in incorporating

education into higher education institutions' curricula. The authors emphasize the contradiction that sustainability frameworks must enable change of existing constructs within institutions while also being sufficiently aligned with current realities for today's higher education institutions to accept them. Similarly, Seater and Ceulemans (2017) state that "a paradox arises when educators approach a sustainability curriculum that has the potential to transform students' thinking and actions, with a reductive and non-substantive pedagogy" (p. 47). It is challenging to teach sustainable development in higher education, and students, as future professionals and members of the public, may be without understanding, dedication, or a sense of position on important ideas and activities connected to environmental sustainability. Seatter and Ceulemans (2017) provide three curricula environmental sustainability positions in addition to three pedagogical models that vary due to the student's prior and existing knowledge and beliefs, level of engagement, and potential for critical thinking and transformative learning.

Ralph and Stubbs (2014) agree with the existing paradox in higher education and provide reasons for higher education institutions to change existing protocols. The authors express that universities are critical in tackling global environmental concerns because their education, research, and community participation may have long-term environmental and societal repercussions. Universities have multiplier effects on society by exhibiting best practices in operations, research, and teaching. For universities to effectively lead, environmental sustainability must be handled holistically. A sustainable strategy must be integrated into all aspects of institutional operations synergistically. Individuals devoted to the objective of a more sustainable world have a critical role in the

success of integrating environmental sustainability into colleges. A robust policy environment, funding of plans, and encouragement of leaders and environmental sustainability advocates were all found to be essential aspects in facilitating universities to make the transformative changes required to incorporate environmental sustainability into all departments. A successful plan required educating and raising awareness among all university workers, including educators, about the need for environmental sustainability education and experience for future generations.

Universities (and their stakeholders) have been acknowledged as potential leaders to create policies and innovative resolutions necessary to promote the shift to sustainable societies (Horhota et al., 2014; Leal Filho et al., 2018; Murray, 2018). Furthermore, students have an essential role in bringing this agenda ahead as an influential stakeholder group in universities; nonetheless, students' behaviors are understudied in the literature on environmental sustainability in higher education (Murray, 2018). According to Emanuel and Adams (2011), many higher education institutions in the United States have chosen to include environmental sustainability strategies into campus planning and day-to-day operations since the 1980s. These colleges and universities are quickly establishing themselves as environmental leaders and innovators. Understanding students' perspectives on environmental sustainability can help determine whether they are likely to engage in sustainable actions and how they will do so. Likewise, White (2014) examined the application of integrated campus environmental sustainability plans at 27 United States colleges and universities as a basis to establish a framework for appraising the strategies. Findings emphasized the extreme diversity of environmental sustainability

plans across institutions with campus operations receiving more sustainable consideration than academic or administrative departments. Although many institutions have adopted a campus-wide approach to environmental sustainability, plans may potentially fall short of formal education in the classrooms.

Although the work on a broad, globally accessible education model continues and appears promising, there is limited literature pertinent to the successful integration of environmentally sustainable curriculum in the United States. As higher education institutions add policies and have a greater motivation to incorporate environmental sustainability initiatives on the campus, Dmochowski et al. (2016) provided detailed guidance and explained how the University of Pennsylvania successfully integrated a sustainable program. The proposed program could be replicated at other higher education institutions by addressing some common sustainable barriers of both faculty and students (e.g., knowledge, engagement, logistics, recruitment, and pay), in addition to a list of other institutions that have similar effective programs. As students and professors collaborate on environmental sustainability concerns and revise existing course content, the program instills a cultural and behavioral shift (see Adams et al., 2017). It also fosters the formation of a shared vocabulary of environmental sustainability.

One of the most studied universities (both main campus and athletics) in North America is the University of Colorado Boulder (UCB) because of its history and leadership in the continued implementation and improvement of environmental sustainability initiatives. This is an example of how a holistic approach to sustainable education can become transformative. The advanced level of environmental sustainability

did not come easily, as Krizek and colleagues (2012) pointed out. In 1951 a Conservation Education course was offered at UCB. In 1972 it was replaced by Environmental Science and had continually been strengthened. In 1970, student advocacy began on the campus when they founded the CU Environmental Center (EC) on Earth Day. The EC has grown in the ensuing 40 years into a vigorous environmental sustainability operations and service program that now employs over 100 part-time students, eight full-time professional staff and generates an annual budget of $6 million (Krizek et al., 2012). However, this sustainable outcome did not come without controversy. The student-led group met with extreme resistance from the administration but eventually begrudgingly gained their support. Now the administration is looking to take leadership in zero-waste, carbon neutrality and has had a campus sustainability director for many years (Krizek et al., 2012). As history shows, progression did not happen quickly, but with perseverance and creative solutions to challenges, environmental sustainability is now fully embedded in the campus culture. In conclusion, regardless of the area or tactic used to incorporate environmental sustainability into higher education, progress is being made. However, progress is filled with ebbs and flows (see McCullough et al., 2016); some of the same barriers to sustainable progress that researchers see today are similar to those pointed out by original researchers on the topic (see Leal Filho, 2000). More importantly, literature shows that scholars and sustainable champions in higher education are tirelessly working to overcome the obstacles, raise awareness, share knowledge, and promote sustainable change.

Environmental Sustainability in Sport Management Programs

Only fifteen years ago, in his Ziegler lecture, Dr. Laurence Chalip (2006) spoke about the relative youth of sport management as an academic discipline. He stated that being youthful can come with both opportunities and hardships. The most substantial opportunity is to shape and form the discipline's future by providing a solid foundation to build upon. However, with the positives can come difficulties; growing pains, such as self-doubt, can make scholars question the current state, the future, and the direction for the continued legitimization of the discipline (Chalip, 2006). Nonetheless, even then, the importance of the natural environment was noted by Chalip as an emergent topic in the discipline. Consequently, with the increase of environmental knowledge, and expectations of environmental management by sport organizations, there will be an increasing need for sport managers and, by extension, future sport managers to be educated and adequately prepared for facing the environmental challenges in the sport industry (Mercado & Grady, 2017).

Therefore, it is critical to address the relationship between the sport and the environment in higher education (Graham et al., 2018; McCullough & Kellison, 2020; Mercado & Grady, 2017). Students as future professionals must have the necessary knowledge on the topic to be well prepared for a career in the sport industry (Mallen et al., 2010; Mercado & Grady, 2017; Pfahl, 2015). Innovation in teaching environmental sustainability can be an option to meet the demands of colleges and universities and the sport industry (Mercado & Grady, 2017). To this point, Orr et al. (2020) discussed the benefits of using experiential and transformative sustainable learning to educate students

on environmental sustainability in sport. More education is needed to ensure that future sport management professionals have the means to affect a positive environmental change (Ličen & Jedlicka, 2020; Mallen et al., 2010; Orr et al., 2020).

Scholars have evaluated the current state of environmental sustainability in sport management curricula in the United States higher education institutions. For example, Graham et al. (2018) performed an inventory of courses offered in sport management curriculum. Findings indicated that there were a few standalone environmental sustainability courses offered in sport management programs despite evidence that environmental sustainability (or some variation of) education is becoming an integral part of the education process (Mercado & Grady, 2017; Shek et al., 2015). This is making a solid case for adding environmental sustainability into curricula by affirming the benefits for the institution, department, program, students, sport industry, and especially, the environment. Similarly, Ličen and Jedlicka (2020) examined program descriptions, learning outcomes, and curricula of 84 sport management graduate programs (or similar) at 65 R1 universities in the United States. The goal was to assess the use of the United Nations' Sustainable Development Goals and evaluate the extent to which sport management programs are placing themselves as facilitators of knowledge and expertise in sustainable development. Results indicated that "the discipline [sport management] has coalesced around a key set of skills and content areas. This standardization may come at the expense of adaptability and responsiveness to changes in sport and in society" (Ličen & Jedlicka, 2020, p. 1).

Other scholars have investigated and provided suggestions for incorporating and setting the foundation to add environmental sustainability into sport management programs (Dingle and Mallen, 2018; Mercado and Grady, 2017). Specifically, Mercado and Grady (2017) provide a “roadmap” for sport management programs and facilitators to integrate environmental sustainability into the curriculum and meet the growing demands of universities and industry. Teaching environmental sustainability in the classroom echoes universities’ “broader goal to prepare future leaders and help students learn cutting-edge skills to be better equipped to enter a dynamic workforce” (Mercado & Grady, 2017, p. 122).

Others have suggested methods of model delivery to be based on previously highly used and effective teaching practices in sport management programs: an entire course dedicated to environmental sustainability in sport (Dingle and Mallen, 2018) or incorporating environmental sustainability into the various course offerings in the program. Mercado and Grady (2017) focused on the latter, as they explained the benefits of integrating environmental sustainability into existing classes. By integrating environmental sustainability into different courses, students can learn sustainable concepts and see development in varying facets of sport management sectors through practical applications in each course and not become overloaded with information at one time. They stress that it is imperative to assess students' present degree of personal awareness of environmental sustainability. It can act as a guide and starting point when developing environmental topics for the course.

Alternatively, Dingle and Mallen (2018) argue that a standalone course should be created first, as a launching point, then environmental sustainability should be added to each course in the curriculum. The goal is for students to gain a foundational knowledge of environmental sustainability concepts, problems, and approaches before applying them to sport scenarios that can produce unique situations. Since the sport industry embraces environmental sustainability as part of operations, it lends credibility and argument for adding a standalone environmental sustainability course into sport management programs. Although there may be different recommendations from others for the implementation of environmental sustainability into sport management programs, there is an overall agreement that there may be obstacles to face during the process (Dingle & Mallen, 2018; Graham & Trendafilova, 2018; Mercado & Grady, 2017). For example, lack of knowledge or awareness by faculty in environmental sustainability, identification of external partners or venues for practical experience, buy-in from department, faculty, and students, no environmental "champion" to take the lead, lack of available resources, crowded curriculum, and uncertainty about the importance of environmental sustainability.

Graham et al. (2018) explored environmental sustainability courses offered in sport management programs. Results indicated that very few sport management programs have a standalone course on environmental sustainability. Obstacles for creating and implementing environmental sustainability courses included regional ecological beliefs of students, not deemed necessary by students, lack of available faculty and class space, too new of a topic, and lack of resources. However, despite these obstacles, a significant

number of respondents (71.9%) said that they incorporated environmental sustainability into a "parent" course (Graham et al., 2018). In conclusion, the benefits of adding environmental sustainability into the curricula far outweigh the challenges.

Research in environmental education has demonstrated that transformative sustainability learning (TSL) is a valuable framework for designing learning experiences that inspire students to change their perspectives on the natural environment (Hales & Jennings, 2017; Orr et al., 2020; Thomas, 2009). TSL is an elevated form of experiential learning wherein hands-on experiences drive social or environmental change (Orr et al., 2020). Instructors design TSL interventions to specifically engage the student's head, hands, and heart (see Sipos et al., 2008). The learning experience must incorporate all three elements: students must engage in coursework (readings, lectures, and discussions) that supports and encourages critical thinking about environmental sustainability, and then have the opportunity to put these concepts into action (through a hands-on or kinetic experience of some sort). Orr et al. (2020) introduce three TSL interventions with various degrees of instructor involvement, aimed at various levels of learners (from first-year university students to seniors and graduate students). The three interventions are environmental sustainability-oriented guided sport venue tours (low-involvement, lower-level students), green teams (moderate involvement, lower to mid-level students), and living labs (more invested learning, long-term projects, best suited to higher-level students). Likewise, Pelcher and McCullough (2019) presented initial findings on the benefits of experiential learning in promoting positive change, new knowledge, and

improved course design, as well as expanding the experiences of students learning how to integrate environmental sustainability into the sport sector.

There have been limited resources (e.g., human experts, educational materials, experiential learning opportunities) available to higher education institutions for incorporating environmental sustainability in sport curriculum (Graham et al., 2018; Mallen & Grady, 2017). However, scholars in the discipline continually add resources for students, faculty, departments, and industry to expand knowledge on the subject that is more easily accessed (SEG, n.d.). This may help educators overcome some of the prevalent obstacles in integrating environmental sustainability into sport management programs (see Dingle & Mallen, 2018; Graham et al., 2018; Mallen & Grady, 2017). In turn, it may potentially open doors to increased educational experiences and curriculum at all levels. Some examples are provided in Appendix A.

In conclusion, trends in the sport industry deem the subject of environmental sustainability important. Many educators in higher education seem to favor the addition of environmental sustainability within sport management curricula. Literature suggests there is a consensus by faculty and experts to add and teach environmental sustainability which reiterates the importance and need to bridge the gap between sport management and environmental sustainability education. However, obstacles to implementation will need to be addressed to forward environmental sustainability in sport management classrooms.

Value-Belief-Norm Theory of Environmentalism

This study will be framed within Stern and colleagues' (1999) Value-Belief-Norm theory (VBN) and Stern's (2000) follow-up study, which provided a conceptual framework for developing theories of environmentally significant individual behavior. Stern and colleagues (1999) started by clarifying the difference in terms (movement activism and movement support) used when referring to the environmental movement. The success of social movements is not only dependent on highly engaged and self-motivated activists but the support of others outside of the committed group is needed to forward the cause (Dietz et al., 1989). For the VBN theory and the author's conception of the environmental movement, both activists and supporters are included. Stern et al. (1999) define movement activists as "those who are committed to public action intended to influence the behavior of the policy system and the broader population" (p. 82). In comparison, movement supporters are "those who are sympathetic to the movement and who are willing to take some action and bear some costs in order to support the movement" (Stern et al., 1999, p. 82). It should be noted that there is a fuzzy delineation between activist and supporter as people tend to move back and forth between the two groups at different points in time (Snow et al., 1986).

This movement is similar to a concept proposed by McCullough and colleagues (2016) regarding environmental "green waves" of progress in sport organizations. The waves are characterized by gauging standard levels of environmental consciousness and the intricacy of the engagement. McCullough et al. (2016) utilized institutional theory, diffusion of innovations, and organizational learning perspectives as theoretical

frameworks in assessing these waves. Interesting and like individuals classified as activists or support, the authors noted the possibility of ebbs and flows of organizations as progression and regression is possible between the three waves of environmental sustainability.

One goal of the research and creation of the VBN theory by Stern (1999) was to connect the widespread literature on the social psychology of environmentalism with social movement scholarship. Specifically, although activists and supporters are critical for the success of a movement, the difference between the two is vital to understand because the VBN theory was born out of the need to understand "how individuals come to support movements short of committed activism-how they become part of the mobilization potential of a movement" (Stern at al., 1999, p. 83). To formulate VBN theory, Stern and colleagues (1999) believed the base for movement support began at the conjunction of values, beliefs, and personal norms.

The VBN theory was conceived, adapted, and formed using three standalone theories and paradigms from legends in social psychology whose work (built off pioneers in the discipline) incorporating environmentalism paved the way for Stern and colleagues to combine and forward these theories in a new direction. To start the process, Stern et al. (2019) looked to different theories and paradigms to help synthesize the VBN model: personal values (value theory), norm activation theory, and the New Ecological Paradigm (NEP). The goal of Stern and colleagues' (1999) work on VBN was to advance earlier theories of environmentalism. Ultimately the value theory, norm-activation theory, and the New Environmental Paradigm (NEP) were linked through a contributing chain of five

variables, explaining the causal relationship between the components. The variables are personal values (primarily altruistic values), NEP, awareness of adverse consequences (AC), ascription of responsibility (AR) to self-beliefs about general conditions in the environment, and personal norms for pro-environmental action that result in support for social or more importantly environmental movement (Stern et al., 1999). The VBN theory model provides a clear explanation of the causes of the broad predisposition towards pro-environmental behavior. Simply stated, the theory suggests that personal values (specifically altruistic) on environmentalism lead to beliefs (NEP, AC, and AR) about the state of the biophysical environment, which in turn form personal pro-environmental norms and, ultimately, lead to pro-environmental action and behaviors. Each variable in the chain directly affects the next and may also influence variables further down the chain (Stern et al.,1999). Furthermore, the VBN theory provides "the best available social-psychological account of non-activist support for the goals of the environmental movement" (Stern et al., 1999, p. 91).

Components of Value-Belief-Norm Theory

Personal Values (Value Theory)

Prior to theory development, Stern et al. (1993) hypothesized three value preferences or types of values that apply to environmentalism. These values are self-interest, altruism towards other species, and the biosphere (humans living in harmony with nature). The authors looked towards altruistic values specifically for the emerging theory because social movements tend to pursue collective goods for the benefit of people on a regional, national, and even global scale. Altruism is a concern for the greater

good and a willingness to help due to concern, not an obligation (Stanford, 2020). At the time of publication of the VBN, there was no empirical evidence in a United States sample providing a distinction between the three values (Stern et al., 1999). Interestingly, Stern and colleagues (1999) noted that this distinction might be vital in more fiercely environmentalist populations, such as students. This distinction between values can be seen in the second iteration model of the VBN theory in Stern's (2000) follow-up publication introducing a conceptual framework advancing environmentally significant behavior.

Stern and colleagues drew on the value measures developed by Schwartz et al. (Schwartz & Bilsky, 1987; Schwartz, 1992, 1994) and used them or amendments of them for the development of the VBN theory. For the initial publication on VBN theory (1999), the authors investigated two of the three value bases of environmental concern. Altruism and self-interest values were examined, which correlate to Schwartz's Self-transcendent and Self-Enhancement clusters (Stern et al., 1999). Additionally, two more of Schwartz's value clusters were assessed, Conservation (traditional) and Openness to Change, because these values have been linked to environmentalism in other studies (Stern et al., 1995). Schwartz's (1992, 1994) comprehensive work on value theory is the basis for the value construct of the VBN theory; therefore, the tenets of this work will be discussed in greater detail.

An overview of the Schwartz theory of basic human values (2012) addresses the essence of the values, describes the characteristics common to all values and explains what separates one value from another. Values have been a central theme in the social

sciences since their establishment, and the works of Durkheim (1897-1964) and Weber (1905-1958) were instrumental in building the foundation for Schwartz's value theory (Schwartz, 2012). The theory describes 10 fundamental personal values known through many cultures and discusses where they derive from. At the center of value theory is the idea that values form a circular form representing the motives expressed by each value. This circular structure, capturing the contradictions and the harmony between the 10 principles, is typical in most cultures.

Schwartz (2012) explains the importance of values and states that they have been a central concept in social science since their beginning. Values can describe people, cultures, and groups within a culture, track changes over time, and explain the motivational foundations of attitudes and behavior (Schwartz, 2012). The values of culturally different communities are organized in similar ways. This indicates that human intentions are uniformly coordinated. Although the essence of values and their meaning may be similar, the relative importance assigned to values is substantially different for individuals and groups. "Priorities" or "hierarchies" carry different values for individuals and classes (Schwartz, 2012, p. 3). The value theory (Schwartz, 1992) implements an idea of values that defines six key features suggested in the writings of many theoreticians. Schwartz (2012) highlights these items as:

1. Values are convictions that are inextricably related to affect.
2. Values are the desired goals that motivate action.
3. Values override different acts and circumstances.
4. Values serve as guidelines and standards.

5. Values are ordered relative to each other according to the utility of the individual.
6. The relative significance of several values drives behavior.

Schwartz (2012) prefaces the ten values (self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence, and universalism) of the Schwartz theory of basic human values with the values theory's nature because the above list is a feature of all values. These values are universal to all cultures because they are grounded in one or more of the three basic universal requirements of human existence and their ability to cope. These requirements are the biological needs of individuals, coordinated social interactions, survival, and welfare of the group. Based on these requirements, Schwartz suggests that individuals cannot cope alone, but people must cope together by creating concepts and goals from values that define their social interactions. Schwartz (2012) then created a theoretical model of dynamic relations among ten motivational types of values. When one value is pursued, it may conflict with some values but be congruent to others. Ultimately Schwartz's work helped to provide more clarity to each value's underlying belief.

Beliefs (New Ecological Paradigm)

Stern and colleagues (1999) utilized the New Ecological Paradigm (NEP) to assess individuals' beliefs in the VBN model. The original New Environmental Paradigm scale was developed and published in 1978 by Riley Dunlap and Kent Van Liere at Washington State University to measure how the world viewed environmentalism and the current degree of environmental consciousness (Anderson, 2012). The original NEP consisted of twelve statements. It was developed to measure how the population viewed

environmentalism as it transitioned from the dominant social paradigm (DSP) used in the 1970s to the NEP. Milbrath (1989, p. 116) defined DSP as "a society's belief structure that organizes the way people perceive and interpret the functioning of the world around them." Pirages and Ehrlich (1974) argued that the anti-ecological DSP needed to be replaced by a more realistic world view to avoid an ecological disaster. Despite the prominence of the anti-ecological DSP, the NEP reflects newer and more significant environmental concerns shown by the world posing a direct challenge to the DSP (Dunlap, 2008; Dunlap et al., 1978).

The original NEP was criticized for many shortcomings (Anderson, 2012; Dunlap, 2008). The scale was revised three times by Dunlap (2008) before one major final revision that started in 1990. Dunlap and colleagues (2000) revised the NEP scale (over ten years) to address lingering criticisms. These shortcomings included "a lack of internal consistency among individual responses, poor correlation between the scale and behavior, and "dated" language used in the instrument's statements" (Anderson, 2012, p. 260).

The revised NEP has 15 statements. Eight of the statements reflect endorsements of the NEP, while an agreement with the other seven mirrors endorsement of the older DSP. The revised NEP still had several criticisms, including the omission of some elements of a pro-ecological world view, the validity of the scale, debate over the revised scale's dimensionality, and being seen as a poor predictor of environmental behaviors (Anderson, 2012; Dunlap, 2008). Despite recorded weaknesses in aspects of the paradigm, the revised NEP (2000) continues to be highly used in research (Dunlap, 2008;

Harraway et al., 2012; Ntanos et al., 2018; Rideout, 2005; Rideout et al., 2005; Vikan et al., 2007) and is the most popular and widely used measurement of environmental beliefs, values, and attitudes in the world (Anderson, 2012; Dunlap, 2008; Ntanos et al., 2019). The 15 revised NEP statements are as follows:

1. We are approaching the limit of the number of people Earth can support.
2. Humans have the right to modify the natural environment to suit their needs.
3. When humans interface with nature it often produces disastrous consequences.
4. Human ingenuity will ensure that we do not make Earth unlivable.
5. Humans are seriously abusing the environment.
6. The earth has plenty of natural resources if we just learn how to develop them.
7. Plants and animals have as much right as humans to exist.
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
9. Despite our special abilities, humans are still subject to the laws of nature.
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.
11. The Earth is like a spaceship with very limited room and resources.
12. Humans were meant to rule over the rest of nature.
13. The balance of nature is very delicate and easily upset.
14. Humans will eventually learn enough about how nature works to be able to control it.

15. If things continue on their present course, we will soon experience a major ecological catastrophe (Dunlap et al., 2000, p. 433).

Norms (Moral Norm Activation)

To understand the influences of more common movement support, Stern and colleagues looked to Schwartz's (1977) moral norm-activation theory of altruism (NAT). Theories of altruistic behavior explaining environmentalism were used before Schwartz. For example, Heberlain (1972) proposed this approach by suggesting that individuals require altruistic motivations to make a significant contribution to environmental quality as a public good. Schwartz provides the most developed example of Heberlain's approach by describing the relationship between activators, personal norms, and behaviors (Macovei, 2015). Schwartz's theory of altruism suggests that people are more willing to embrace behaviors (including pro-environmental) if the individual is aware of harmful consequences (AC) to others from an environmental situation and when that individual ascribes responsibility (AR) to themselves for altering the offending environmental situation or condition (Stern et al., 1993). Macovei (2015) reiterates that the progression of norm activation involves four situational factors or activators: 1) awareness of need, 2) situational responsibility, 3) efficacy and 4) ability, in addition to two personal trait activators: 1) awareness of consequence and 2) denial of responsibility. These factors and activators make up an individual's moral norms (also called personal norms), in which Schwartz denotes the most significant predictors of conservation behavior (Kaiser et al., 2005; Stern, 2000, Wiidegren, 1998). Actions and behaviors are

activated when individuals feel impending harm to other people, species, and the biosphere due to an ecological condition (Stern et al., 1999).

Stern and colleague's VBN theory proposes that norm-based actions flow from three factors, and each statement involves a generalization of Schwartz's theory:

1. Acceptance of particular personal values
2. The belief that things important to those values are under threat
3. Beliefs that actions initiated by the individual can help alleviate the threat and restore the values (Stern et al., 1999, p. 83).

Direct comparison of Schwartz's (1977) original NAT with Stern et al.'s (1999) generalizations of the theory used in VBN can help shed light on the subtle differences. First, the original theory assumes altruistic values; the generalization speculates that personal norms may root themselves in other values. The relevance of these varying values is as distinct as each individual. Next, the original theory stresses awareness of consequences (AC) of events for other persons (the key items valued by altruists); the generalization stresses threats to whatever items "are the focus of the values that underlie the norm" (Stern et al., 1999, p. 83). For example, when dealing with environmentalism, dangers to non-human species and the biosphere (e.g., planet, natural environment, earth) may be just as important to some individuals as altruism is to others. Lastly, in Schwartz's (1977) original theory, norm activation depends on the ascription of responsibility (AR) to oneself for the detrimental outcomes to other individuals, such as the belief or denial that the individuals' actions could have impacted or improved the

outcomes. Stern et al.'s (1999) generalization underscore beliefs about responsibility for initiating or capability to relieve threats to "any valued objects" (p. 83).

The Results: Behaviors

Stern (2000) defined environmental behaviors as those that create an impact through direct (e.g., clearing a forest, landfill waste, car emissions) or indirect (e.g., tax policies, legislature, world markets) change to the environment (see Stern, 1997). However, since the environment has become part of humans' decision-making process with environmentalism, a second definition of environmental behavior has surfaced. The second definition is "behavior that is undertaken with the intention to change (normally, to benefit) the environment" (Stern, 2000, p. 408). Both definitions are essential to research. However, using the impact-oriented definition to recognize and target behaviors that have the most significant impact on the environment is essential (Steg et al., 2014; Stern, 2000).

Early research on pro-environmental behavior presumed it to be a "unitary, undifferentiated class" (Stern, 2000, p. 409). The first rendition of the VBN theory illustrated four outcomes of social movement (behaviors) through the value, belief, and norm variables: 1) environmental activism, 2) environmental citizenship, 3) policy support and 4) private-sphere behaviors (Stern, 1999). Conclusions from the original VBN study suggested that research has progressed to the point that environmental attitudes and pro-environmental behaviors should not be discussed in general terms. Sterns' (2000) research points out distinctive types of environmentally significant behaviors caused by different combinations of factors. Based on these more distinct and

defined environmentally significant behaviors, Stern modified the original behaviors for the second rendition of the VBN theory (see Figure 1) to the following:

1. Environmental Activism-dedicated environmental activism such as participation in environmental groups or rallies
2. Nonactivist Behaviors in Public Sphere-support of movement objectives such as environmental stewardship/citizenship or support of public policy
3. Private-Sphere Environmentalism-the purchase, use, and disposal of personal and household products that have an environmental impact (Stern, 2000, p. 409). It is important to remember that an individual's behavior is minor, but the consequences can be substantial cumulatively.
4. Other Environmentally Significant Behaviors-influencing the behaviors of organizations, since organizational action can have some of the most enormous and most direct impacts

Despite the effort towards a general theory (see Figure 1), Stern (2000) believes it is far in the distance, concluding that "environmentally significant behavior is a daunting complex" in both variations involved and the causal influences that can affect behaviors (p. 421).

Value-Belief-Norm Theory in Higher Education and Sport Literature

New Ecological Paradigm

Rideout and colleagues (2005) published the results of a longitudinal study of the positive affirmation of the NEP worldview. In a different study, Rideout (2005) measured

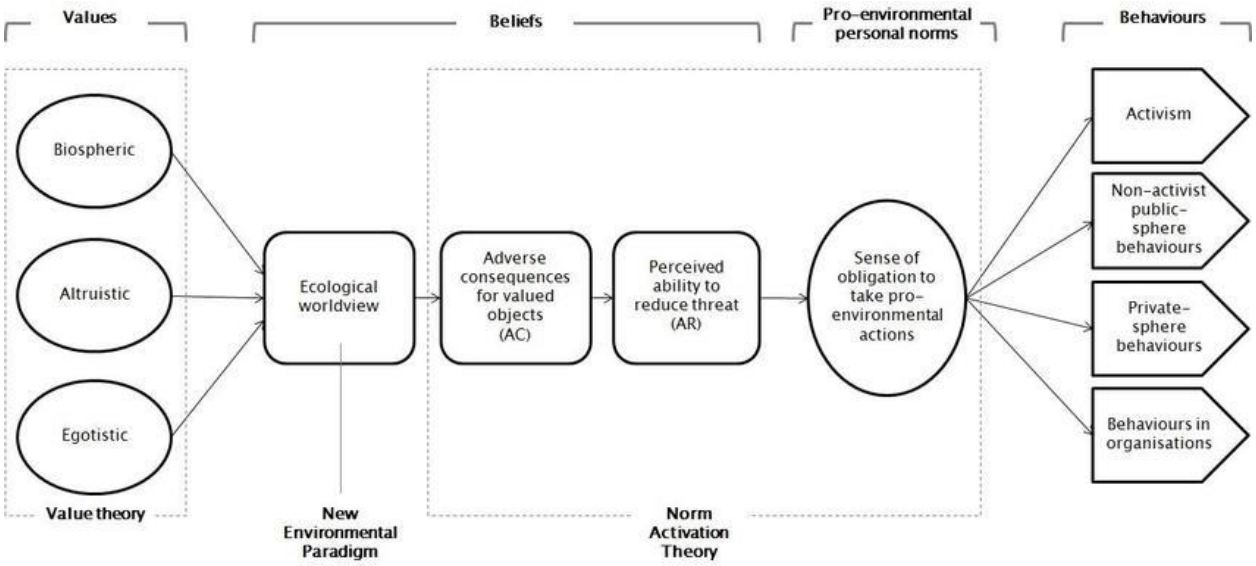


Figure 1. Value-Belief-Norm Theory Model (Creamer, 2015)

the instrument's confirmations after delivering a multiple-week module centering on global environmental issues using readings, discussion, and a writing exercise. Results revealed that receiving environmental education did alter the student's pro-environmental responses to the NEP compared to the control group; however, over time, knowledge retention diminished. Similarly**,** Harraway and colleagues (2012) used the revised NEP to monitor the development of students' ecological worldviews. Higher education institutions are interested in the impact that they and life experiences have on students' ecological views but lack the processes to track the changes over time. The revised NEP was delivered twice, over a semester, and results indicated changes in the students' ecological view. Greenhalgh et al. (2015) also used NEP to determine the impact of a one-week Sport and the Environment course on students' beliefs about the natural environment. Results were not positive concerning the efficacy of the class in changing the ecological worldview of the students.

In the context of sport, Bachman (2020) examined the environmental attitudes of fans attending a series of racing events in Monterey County, California. Historically, auto racing events are not thought to be environmentally friendly. However, findings illustrated that the participant's NEP scores were similar to those found in previous event and non-event research. Personal characteristics (e.g., age, income) did not contribute to environmental sustainability attitudes. Interestingly, results indicated an inverse relationship between environmental attitudes and spending. Even with the revised NEP's popularity, scholars try to develop improved scales to measure environmental values and attitudes. For example, López-Bonilla and López-Bonilla (2015) examined the

dimensionality shortcomings of the revised NEP. They proposed a short-form measure called the brief ecological paradigm (BEP) scale to measure the attitudes and values of 509 golf tourists from several countries worldwide. The study's BEP used five questions from the revised NEP scale that represent ecocentrism, not anthropocentrism. Results indicated that the BEP scale exhibited statistical reliability without compromising the construct validity. This new brief measure has slightly more internal consistency than the original NEP scale and the Revised NEP scale (López-Bonilla & López-Bonilla, 2015). For this study, a BEP will be used to provide a general overview of the sport management students' environmental values before analyzing their environmental values.

Value-Belief-Norm Theory

In 2018, Whitley and colleagues examined five environmental sustainability behaviors of higher education students: 1) using lower environmental impact transportation, 2) recycling paper, plastics, and metal, 3) turning off the lights and other electronics when not using, 4) sustainable food choices, and 5) support for political candidates who will support environmental policies. Although VBN is widely used, the authors pointed out that it is seldom used to assess the ecological views of higher education students. The results indicated that overall, values play a role in predicting ecological behaviors. A student's values make a difference in environmental decision-making, but different values are linked with different behaviors. This is consistent with Stern’s (1999) results in the original study presenting the VBN theory. A study directly examining sport administration and recreation students using the VBN theory was Casper and Pfahl (2012), in which values, beliefs, and norms were explored (see Figure 2).

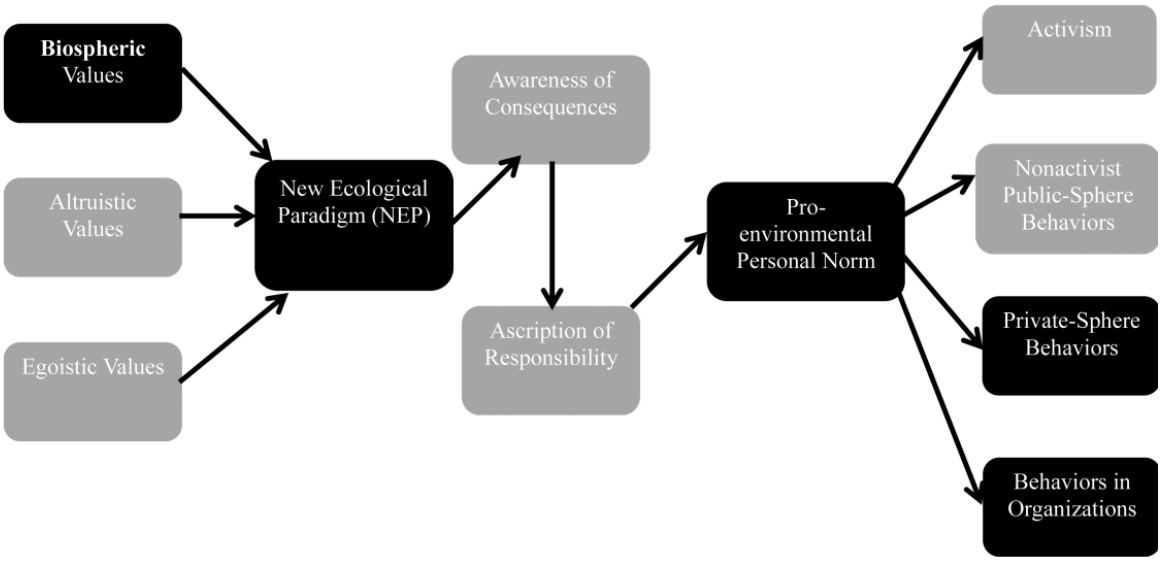


Figure 2. Value-Belief-Norm Theory Model (Casper & Pfahl, 2012)

Findings indicated a moderately strong connection between students' environmental values and environmental responsibility; in other words, those who were aware of, and valued environmental issues were more likely to assign responsibility and believe the negative environmental issue should be addressed. However, these beliefs do not always translate to action and a change in personal behavior. Given that social norms have a solid relationship to behaviors (Ghazali et al., 2019), it is suggested that strengthening social norms related to environmental responsibility is a hopeful opportunity for modifying behaviors (Casper & Pfahl, 2012). The study by Casper and Pfahl (2012) broadened research related to environmental behavior in sport; however, it was an initial study delving into future sport administration and recreation professionals' ecological values, beliefs, and norms and provided a preliminary understanding of their environmental viewpoints.

Research Questions

For this study, the Value-Belief-Norm Theory of Environmentalism (VBN) is the best fit, because a large component of the study is to assess an individual's personal beliefs on environmentally sustainable behaviors of organizations, specifically sports organizations. To better address the research questions of this study, a new and unique extended version of the Value-Belief-Norm Theory of Environmentalism (VBN) will be developed and used. The VBN paradigm fits well with the purpose, scope, and research questions as it facilitates the analysis of individual-level factors that lead to or impede environmental behaviors. The guiding questions of the research were as follows:

RQ1: What are the environmental values, beliefs, and norms of sport management students in higher education institutions in North America?

1a: What are the environmental values, beliefs, and norms of sport management undergraduate students in higher education institutions in North America?

1b: What are the environmental values, beliefs, and norms of sport management graduate students in higher education institutions in North America?

1c: Is there any difference between the two groups?

RQ2: What are the sport management students' personal sustainable behaviors and beliefs regarding business, and sport organizations sustainable operations?

2a: What are the undergraduate sport management students' personal sustainable behaviors and beliefs regarding business, and sport organizations' sustainable operations?

2b: What are the graduate sport management students' personal sustainable behaviors and beliefs regarding business, and sport organizations' sustainable operations?

2c: Is there any difference between the two groups?

CHAPTER THREE
MATERIALS AND METHODS

Participants

The population sample in this study included undergraduate as well as graduate (masters and doctoral) sport management students from higher education institutions across North America. Participants were currently enrolled in a sport management program, working toward their BS, MS, or Ph.D. in this area of study. The study population was inclusive of all students (domestic and international) in North America. All participants were over the age of 18. Participation was entirely voluntary and anonymous.

Survey as a Method for Data Collection

A survey is a methodology in the social sciences for analytically studying the properties and interrelationships of sociological and psychological variables (Roberts, 1999). One definition of survey sampling is "the method for identifying a set of observations from a population and making inferences about the population from those observations" (Brick, 2011, p. 873). A survey aims to generate statistics or numerical descriptions of various population elements under investigation. Fink describes surveys as "information collection methods used to describe, compare, or explain individual and societal knowledge, feelings, values, preferences and behavior" (2017, p. 2). The most common method of gathering evidence for a survey study is to ask individuals questions, with responses becoming the data to be evaluated. Survey questions are usually closed-ended with a specific set of response options; though, many surveys also include some

open-ended questions for respondents to briefly elaborate on (Robinson & Leonard, 2019). A survey can be completed through face-to-face or self-administered questionnaires such as in-person or telephone interviews, on paper or online, through the mail, privately, or in a public forum. In most cases, data from the survey are collected on a subset of the population, referred to as a sample, rather than on every single person, which would be extremely difficult, time-consuming, and expensive. To complete a reliable and accurate survey in which inferences can be made to the population, researchers must choose the appropriate survey type based on the overall purpose, research questions, population of study, along with ethical and survey error considerations (Fink, 2017).

Online Survey Delivery

The use of online or web-based surveys has increased significantly recently (Robinson & Leonard, 2019). Some of the most significant reasons for the increased use of web-based surveys are low cost is low and does not increase with the number of targeted respondents, time efficiency for the delivery, reminders, and responses of survey, the use of web-based programs assist with organization and analysis of data, can reach a large number of respondents in a vast geographic area, and offer the anonymity of responses (Fink, 2017; Fowler, 2014; Robinson & Leonard, 2019). Due to the increase of online surveys in everyday life, individuals may feel like they are being overwhelmed with too many surveys and ignore them all. Therefore, it is pertinent for the researcher to strategically plan all components of the survey to reach the relevant sample via e-mail with purposeful survey questions (Fink, 2017). Online surveys are often distributed

through a link in an e-mail, or the link is embedded on a website. The respondent can complete the survey on almost any device (i.e., laptops, desktop computers, notebooks, tablets, mobile phones). Due to this technology-based delivery system, there are some challenges associated with online surveys such as samples are limited to those individuals that have Internet services, accurate e-mail addresses are required, individuals can sometimes have multiple e-mail addresses and may be contacted many times, the researcher cannot know who is actually completing the survey, and there may be additional obstacles when recruiting others to share the survey link (Fink, 2017; Fowler, 2014; Robinson & Leonard, 2019).

This research utilized an online self-administered survey as the method of data collection. The online survey enabled the researcher to reach a geographically large and diverse sample of sport management students in North America through the educators that taught them at their higher education institution. Students were contacted through their institution's e-mail account and provided with a link to the Qualtrics survey. This aided in overcoming the possibility of lack of Internet access since a Harris Poll in 2018 found that a high percentage of college students have access to technology on campus (Hart, 2015). Also, students were able to take the survey when it was convenient, during a pre-specified timeframe, so it did not interfere with their studies. The online survey format provided the researcher with rapid responses from the participants and utilized the advantage of survey software that helped to organize and summarize data for export and analysis.

Sampling Techniques

A survey sampling is "the method for identifying a set of observations from a population and making inferences about the population from those observations" (Brick, 2011, p. 873). For this study, the researcher utilized a combination of readily available non-probability or convenience sampling techniques (Skinner, Edwards, & Corbett, 2015). This study relied heavily on the recruitment of faculty (who have access to students in a sport management programs in higher education institutions) to distribute the survey via e-mail. This will require multistage sampling, which Fowler explains, "in the absence of a direct sampling source, a strategy is needed for linking population members to some kind of grouping that can be sampled" (2014, p. 25). Since there is no single list readily available of every sport management student in North America, the faculty in sport management programs become the initial recruitment sample to contact the study population. First, the researcher used a convenience sample to recruit known sport management faculty and educators. Additionally, a snowball sampling technique was used by the researcher to solicit help from already identified educators to forward the e-mail and survey link to other educators. Next, the researcher posted the survey invitation to faculty, administrators, educators, and graduate teaching students on a public list-serve (North American Society for Sport Management). All faculty were invited to share the student invitation and survey link with sport management students. No incentives were offered to faculty to distribute the survey or to the students to participate and complete the questionnaire. Participation by all parties was voluntary.

Survey Instrument

Survey Development

The instrument for this study was an anonymous survey developed from multiple sources (see Appendix F). The original Casper and Pfahl (2012) survey was used for the initial portion of this study (Questions 1-29). Additionally, new revised survey items were developed and added to the instrument to address the most current issues in this field that have developed in the last decade (i.e., terminology, understanding, scientific data, social importance). The first step in the development of the new survey included a thorough literature review using the keywords: environment, environmental sustainability, greening, recycling, ecology, ecological crisis, climate change, natural resources, VBN theory, environmental sustainability in sport classes, sport ecology education, experiential and transformational sustainable learning in sport. This was performed to identify previous studies using surveys in accessing environmental values, norms, and beliefs. Next, sport industry websites and document analysis with keywords: environment, sustainability, greening, sport ecology, recycling, green programs were conducted to familiarize the researcher with the current trends within the industry as it pertains to environmental sustainability. Lastly, discussions with colleagues and website searches for environmental sustainability curriculum in sport management programs took place to examine what is currently offered. Once the search of the aforementioned steps was completed, a new model was created to show the progression and development of the VBN theory to include the new constructs for this study. Finally, survey items were developed to measure the constructs of the model.

Modifying The Value-Belief-Norm Theory

The new model shows an extension of the VBN theory (see Figure 3). It was created to specifically focus on sport management students' beliefs about sport organizations' environmental sustainability behaviors (see RQ2). Furthermore, questions in the survey instrument were developed to ask about sport management students' awareness of environmental sustainability in sport, including sport ecology. Inferences made about student awareness from the Casper & Pfahl (2012) study was asked directly in the proposed survey. Ultimately, in reiteration, this study aims to gain a greater understanding of future sport professionals, values, beliefs, and norms related to environmental sustainability in sport. The data collected from the measurement variables in the survey instrument can help faculty to better prepare sport management students through changes in the curriculum by offering relevant content pertinent to environmental sustainability in sport. This can be achieved by higher education and industry working together to bridge the known gaps for the benefit of the students and the sport industry (see Campelli, 2020; Graham et al., 2018; McCullough et al., 2020; Trendafilova & McCullough, 2018; Orr, 2020). More things and stuff and words and information.

Measurement Variables

Personal Values, Beliefs, and Norms Related to Environmental Sustainability

Values are defined as circumstances transcending convictions about what is crucial in one's life (Schwartz & Bilsky, 1987). Concerning the natural environment, ecological values orient a person, influencing his or her inclination to endorse environmental actions (Casper et al., 2020; Steg et al., 2005).

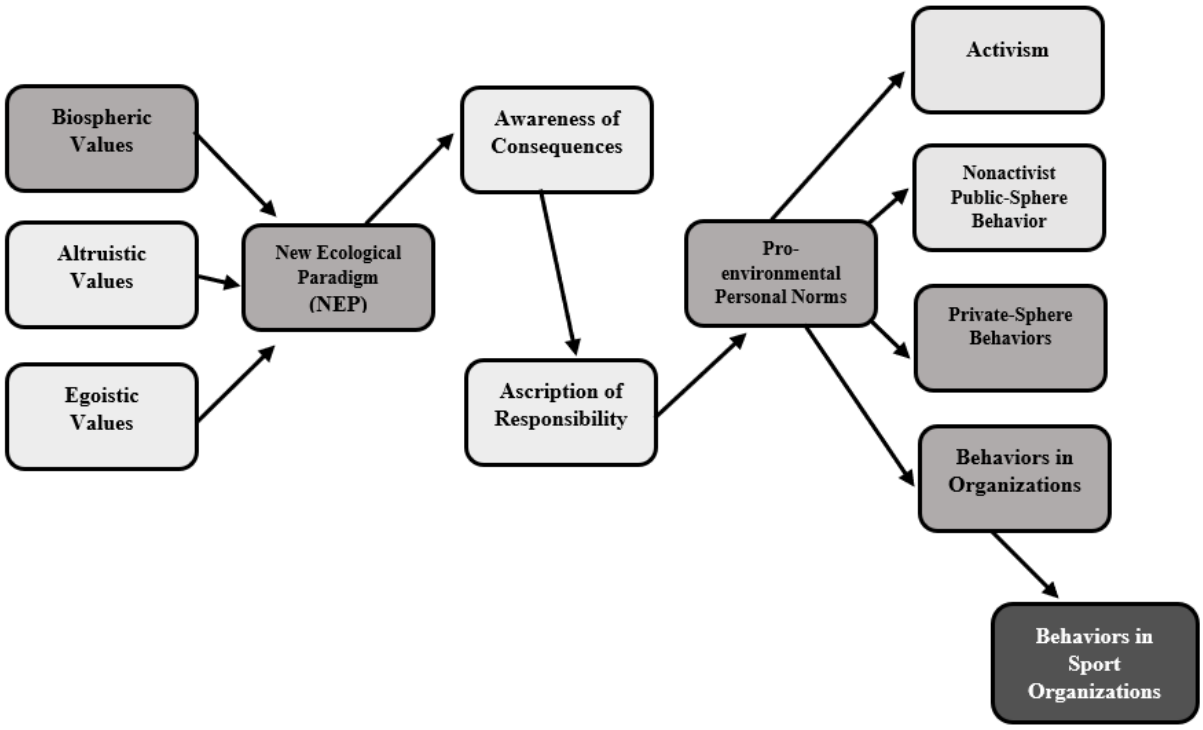


Figure 3. Proposed Value-Belief-Norm Model

Note: Adapted VBN framework from Casper & Pfahl (2012) for the current study.

Four questions (1-4) in the survey instrument (see Appendix F) pertain to personal environmental values. Questions about biospheric values were chosen (pollution prevention, protecting the environment and preserving nature, respecting the earth, and unity with nature) because the questions are more focused on the environment (Casper & Pfahl, 2012). Respondents were asked to rate the importance of the environmental values using a five-point Likert scale ranging from 1-strongly disagree to 5-strongly agree. Concerning beliefs, the Value-Belief-Norm theory indicates that environmental behavior stems from worldviews or opinions that people have about the interaction between the earth and humans (Casper et al., 2020; Steg et al., 2005). Six questions (5-10) from the revised New Ecological Paradigm will assess the participant's ecological beliefs. The NEP contains questions that deliver consistent, valid results in three categories or dimensions: balance of nature, limits to growth, and humans over nature (Casper & Pfahl, 2012). Therefore, two questions per category were used. Due to the length of the survey, only six of the 15 questions were used. Results from a study by López-Bonilla and López-Bonilla (2015) indicated that the Brief Ecological Paradigm Scale or BEP demonstrated statistical reliability without compromising the construct validity when using a portion of the NEP. Additionally, this replicates the survey of Casper and Pfahl (2012). Respondents were asked to rate each item about environmental beliefs using a five-point Likert scale ranging from 1-strongly disagree to 5-strongly agree.

Personal norms relate to measuring the degree of personal responsibility felt by an individual toward ecology and natural resources (Casper et al., 2012; Scherbaum et al., 2008). Six questions (11-16) were used to evaluate the participant's relationship to

environmental conservation and preserving natural resources. Additionally, questions were asked regarding personal responsibility in the context of leadership and personal consumption. This section was reduced by three questions from the original Casper & Pfahl (2012) survey list. The question regarding sport organizations was moved into a new survey category (Environmental Sport Organization Business Behavior). Two similar questions about natural resources were combined, and one negatively worded question was removed. Respondents were asked to rate their connection to the environment using a five-point Likert scale ranging from 1-strongly disagree to 5-strongly agree.

Environmental Personal Behaviors

The VBN Theory proposes that personal values, beliefs, and norms form a causal chain that acts as a predictor for environmental behaviors. The respondents were asked nine questions (17-25) about their personal behaviors in two categories (Casper & Pfahl, 2012), environmentally responsible purchasing and resource reduction (e.g., turning off lights, recycling). Four questions were asked in each category with a five-point scale ranging from 1-never to 5-always.

Environmental Business Behaviors

Questions 26-29 pertain to the respondents' beliefs or opinions as to how and if business organizations should act regarding environmental sustainability. This includes the businesses' strategic planning, operations, and influence on employee behavior. Four opinion questions about sport organization sustainable behaviors were randomized and

participants were asked to respond using a five-point Likert scale ranging from 1-strongly disagree to 5-strongly agree.

Environmental Sport Organization Behaviors

This new construct uses the same business behavior questions from Casper and Pfahl (2012) as a base; however, questions 30-36 were revised to directly pertain to sport organizations and take some variables into account, such as fan identification and emotions related to sport. This is a new section that inquires as to the beliefs of sport management students about the environmental sustainability practices of sport organizations. Respondents were asked to rate their opinions on randomized sport organization sustainable behavior questions using a five-point Likert scale ranging from 1-strongly disagree to 5-strongly agree. Both organization behavior groups and groups of questions were randomized by Qualtrics.

Awareness of Environmental Sustainability

Awareness is a significant variable in the VBN theory and is theorized as not only an essential predictor of environmental behaviors but a valuable explanatory factor. There is a connection between environmental awareness and action, however, research suggests that knowledge is a necessary bridge between the two variables (see Casper & Pfahl, 2012). Questions 37-40 were an extension of the sport organization behavior questions. They asked the participants if they had noticed environmental sustainability programs at sport events, if they had participated in the initiatives, if they would be willing to pay a higher price for tickets, and if they would want to work for an organization that promotes environmental sustainability. Questions 41-50 pertain to the student's awareness of

environmental sustainability in sport in higher education classrooms and gauge the participant's interest in the subject. These questions were answered with a simple, yes, no, unsure response.

Demographic Information

The last section of the survey contained seven basic demographic questions. These included the participant's year of birth, gender identification, year in school, academic major, state of participant's residence, location of higher education institution, and personal identification as a sport fan. This information is needed to assess if there is a difference in ecological beliefs of sport management students based on their gender, year in school, or institution. Having this information as a baseline could also serve as a starting point for a future longitudinal study to compare if current underclassmen's values, beliefs, and norms change as they progress through their program of study.

Data Collection Process

Survey Distribution

This survey instrument was delivered utilizing an online web-based platform, Qualtrics. The initial and reminder e-mails to recruit faculty to assist with the survey distribution included the link to the survey, a welcome statement, an explanation of the study and purpose, a copy of the informed consent form, and the IRB approval letter. The survey questions and responses were anonymous (see Appendix F). There was no personally identifiable information collected.

Pilot Study

The pilot study was conducted the first week of September 2021. Responses from seven students were collected from the population of interest in one sport management undergraduate class and one graduate class. An appropriate convenience sample of sport management students was attained to test the survey instrument. This allowed for the target demographic to take the survey and provide feedback to the researcher. Slight modifications were made to the Likert scale on one group of questions to better fit the questions being asked.

Main Study

Once the pilot study was completed, various faculty in sport management programs in North America were contacted via professional e-mail addresses and invited to assist in survey distribution to the students in the classes they teach. These personal contacts are colleagues whom the researcher has developed a professional working relationship with over the past ten years. Additionally, the list-serve from the North American Society for Sport Management (NASSM) was utilized to ask the NASSM community to distribute the survey in their classrooms after explaining the research's purpose and importance. NASSM is "actively involved in supporting and assisting professionals working in the fields of sport, leisure and recreation" (NASSM, 2021). The NASSM list-serve is a public forum that anyone can access. There were no incentives offered for participation or completion of this survey. Faculty were asked to share the survey link only. Student participation in the survey was strictly voluntary, and information will not be shared with any faculty or institution.

The survey link was initially distributed on September 21st, 2021, with an official invite via all faculty members' professional e-mails who were recruited to assist in the data collection process. Sharing of the link with professional colleagues was encouraged. Reminders were sent to faculty on October 4th, 2021, and October 18th, 2021. The NASSM list-serv was utilized with an initial post on September 22nd, 2021, and reminders sent on September 28th, 2021, October 11th, 2021, and October 18th, 2021. The survey was closed on October 25th, 2021.

Data Analysis

Data Cleaning

Before data analysis, 523 survey responses were exported from Qualtrics online survey software program into IBM SPSS 27 and an Excel spreadsheet. Data cleaning is the process of identifying and altering "dirty" data to confirm that it is free of incomplete and incorrect information. First, data were reviewed to determine if any participant or question should be omitted due to missing entries or incomplete surveys. Responses with a completion rate of at least 75% were retained for analysis. Participants were discarded from the survey if there was a pattern in their responses. Straightlining or non-differentiation in ratings is when a participant clicks on the same response every time. This can happen due to survey fatigue, survey boredom, or in the case of a demanding or complex survey (Porter et al., 2004). Additionally, pattern-based responses can be seen as trees or equally alternating patterns, which can be difficult to identify (Vanette, 2018). After a review of the data, 510 viable responses were used in data analysis.

Reliability and Validity

Reliability is the degree to which a survey instrument would give the same consistent results if the experiment were to be retaken under the same condition (Morrow, 2020). A portion of the survey instrument included questions from a previously used survey in a similar type of research where students' values, norms, and beliefs on the relationship between humans and the natural environment were assessed (see Casper & Pfahl, 2012). The newly developed questions of the survey specific to students' beliefs on environmental sport organization behavior were the same as the widely used business behavior questions except for the word "business" being replaced by "sport organization." Additionally, three new questions were added to the sub-scale. Each sub-scale of Likert-style questions within the six constructs of the extended VBN Theory were assessed for reliability using the Cronbach Alpha test in SPSS. The test measures the strength of the relationship between items in a group of questions with a higher value meaning a stronger relationship. A Cronbach Alpha value (α) above .6 is considered acceptable in the social sciences (Mohamad et al., 2015).

Validity is the degree to which the scores from a survey measurement represent the variable they are intended to (Morrow, 2020). In other words, does the survey measure what it is intended to measure? First, a literature review was conducted to collect the results of similar studies. New survey questions were developed using previous studies as a template. Next, data analysis experts assessed the validity of the survey instrument's questions before the pilot test was administered and was deemed valid.

Statistical Analysis

Once the data were cleaned, descriptive statistics were calculated to summarize, organize, and simplify the survey results. Scores for the questions within each sub-scale for the six measurement variables (three input and three output) were averaged and a Pearson correlation analysis was performed to measure the degree of linear relationship between variables. The sub-scale averages were used in the analysis. To address RQ1 and RQ2, overall measures of central tendency (mean) and standard deviation (the distance the observed value is away from the mean) were determined and summarized for the continuous variables (i.e., values, norms, beliefs, personal, business and sport behaviors). Additionally, frequencies and percentages are presented for categorical variables (i.e., demographic). To address each part of RQ1 and RQ2, the mean, standard deviation, frequencies, and percentages were broken down by academic classification (i.e., undergraduate and graduate).

To address RQ1c, a multivariate analysis of variance (MANOVA) was performed to determine if there were statistically significant differences of the continuous input variable scales when allocated by academic classification. The inputs were the values, beliefs, and norms of participants. A MANOVA is an extension of univariate analysis of variance (ANOVA). The MANOVA stresses the statistical significance of mean differences between multiple independent and dependent variables (Morrow, 2020). To address RQ2c, individual ANOVAs were performed to determine if there were statistically significant differences of the continuous output variable scales when allocated by academic classification. A Bonferroni adjustment was used to control for

running three individual tests. The ANOVAs were chosen over the MANOVA due to the high correlation between two of the dependent variables. The output variables were the participant's personal behaviors and beliefs regarding business and sport organizations' sustainable behaviors. All analyses were set at .05 alpha level and performed in SPSS 27. Results are presented, and tables, figures, and charts are used to provide a visual display of quantitative information in the subsequent chapter.

CHAPTER FOUR
RESULTS

General Results

Demographics

Of the 510 responses from sport management students, male (n=331) and female (n=174) participants resided in 40 different states and two Canadian territories. Data were collected by individual "year in school" level (see Table 1). The multiple levels of students were collapsed into two groups (undergraduate and graduate) and used in comparisons within this study. Graduates (n=157) and undergraduates (n=352) who participated in the survey represented institutions in 23 states and one Canadian territory (see Figure 4). Slightly more than half of the students (n=276) strongly identify as an avid sport fans. Additionally, 436 students were born after 1997 (< 25 years old), 62 were born between 1981-1996 (26-41 years old), and nine students were born between 1946-1980 (42-76 years old).

Reliability

Five of the six scales tested had a Cronbach Alpha of over .8 (see Table 2). Only beliefs (.737) fell below .8, which is still above the .6 acceptable level in the social sciences. Beliefs were measured through a 15 question revised New Ecological Paradigm scale. However, only six of the 15 were used for this study, and three questions (1,3, and 5) were reverse coded.

Table 1. Student Year in School by Level

College Level		
	N	%
Undergraduate (n=352)		
First Year	105	29.8%
Sophomore	86	24.4%
Junior	69	19.6%
Senior	92	26.1%
Graduate (n=157)		
Master's Student	124	79.0%
Doctoral Student	33	21.0%

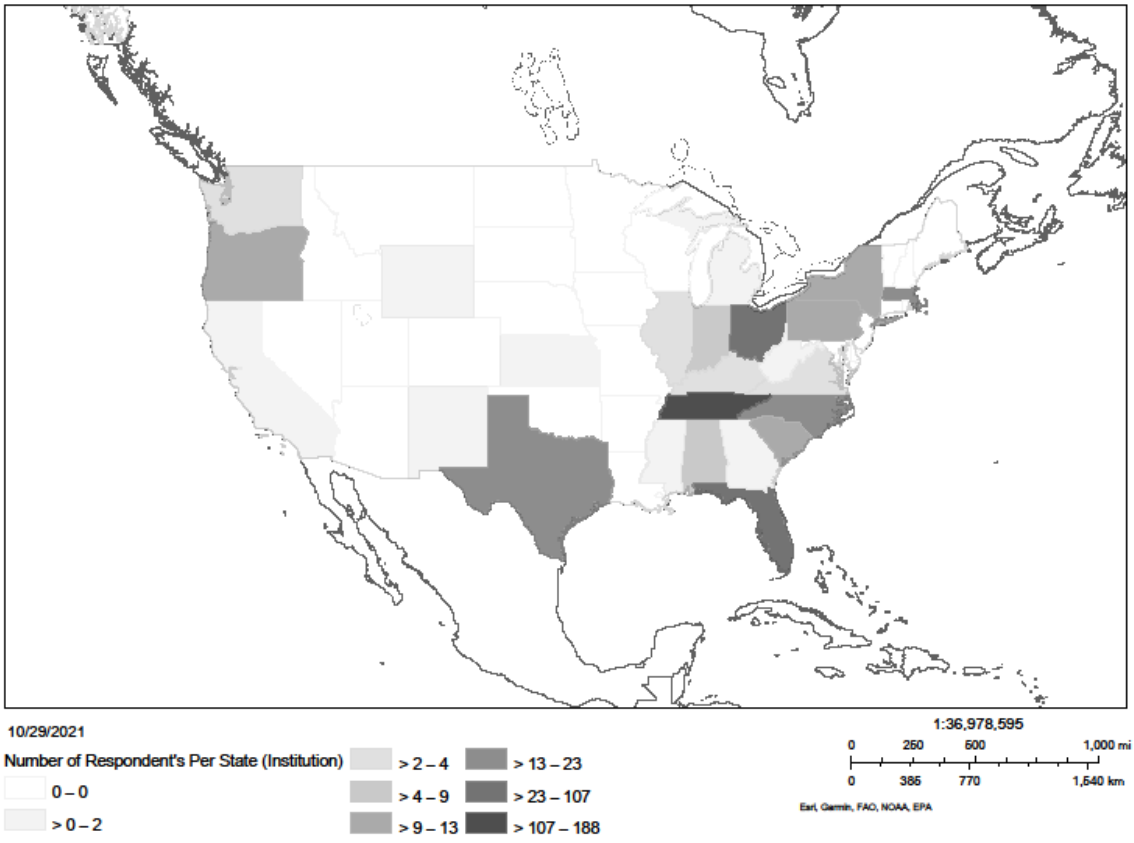


Figure 4. Map of overall student responses (by location of institution) in the continental United States

Table 2. Cronbach Alpha Values

Construct Group	**Cronbach Alpha (α)**
Values	.849
Beliefs	.737
Norms	.858
Personal Behaviors	.845
Business Behaviors	.826
Sport Business Behaviors	.897

Analyzing Research Questions

Research Question 1

RQ1 addressed the environmental values, beliefs, and norms of sport management students (undergraduate and graduate) in higher education institutions in North America. Composite or average subscale scores were calculated from the responses to the question groups (1 to 5 Likert scale) for each input variable (values, beliefs, and norms). To address the environmental values, beliefs, and norms of sport management students, overall (RQ1), undergraduate (RQ1a), and graduate and (RQ1b), student means and standard deviations for each input variable or predictor is provided in Table 3. The means of values were 4.18 for all students, 4.18 for undergraduates, and 4.19 for graduate students. The results indicate a similar, strong agreeance with the biospheric environmental statements that reflect the individuals' personal ecological values. The means of beliefs decreased compared to values, 3.50 was the mean for all students, 3.47 for undergraduates, and 3.58 for graduates. The results indicate a moderate agreeance with the environmental statements that reflect ecological beliefs about the interaction between humans and nature. The final input variable, norms, again decreased in relation to beliefs and values. Overall student means of norms were 3.45, undergraduates were 3.41, and graduates were 3.52. Although the means are slightly lower than beliefs, the results indicated a moderate agreement with the degree of responsibility and obligation felt by the student to take environmental action.

To address RQ1c, a Pearson correlation analysis was performed (see Table 4) to ensure that no assumptions were being violated before assessing the relationship

Table 3. Means, Standard Deviations, and p-Values for Environmental Values, Beliefs, and Norms of Sport Management Students

Input Variable	**Measure**	**Overall**	**Undergraduate**	**Graduate**
		n=508	n=351	n=157
Values				
	Mean (*M*)	4.18	4.18	4.19
	Standard Deviation (*SD*)	.670	.688	.626
Beliefs				
	Mean (*M*)	3.50	3.47	3.58
	Standard Deviation (*SD*)	.692	.672	.730
Norms				
	Mean (*M*)	3.45	3.41	3.52
	Standard Deviation (*SD*)	.670	.736	.803

Table 4. Correlations of Input Variable Sub-Scale Averages (n=509)

Variable		Values	Beliefs
Beliefs	Pearson Correlation	.371**	
	Sig. (2-tailed)	< .001	
Norms	Pearson Correlation	.575**	.508**
	Sig. (2-tailed)	< .001	< .001

** Correlation is significant at the 0.01 level (2-tailed)

between the means of the input variables using MANOVA. All three measures had a significant positive correlation (i.e., traveling in the same direction). Values and beliefs had a low or weak significant positive correlation, $r(507) = .371$, $p = <.001$, while norms and values, $r(507) = .575$, $p = <.001$, and norms and beliefs, $r(507) = .508$, $p = <.001$, had a significant moderate positive correlation. It is not recommended to use highly correlated variables (|>-.6|) when using MANOVA (Morrow, 2020). The results of the Pearson correlation analysis revealed that this assumption was not being violated as all variables were below |-.6|. To address additional assumptions, data were cleaned. There were no outliers in the data set and sample sizes were considerably above 20. A MANOVA was then performed to assess the statistical significance of the mean differences between the values, beliefs, and norms of undergraduate and graduate students. The results of the MANOVA analysis indicated the differences are not statistically significant, $F(3,504) = 1.386$, $p = 0.246$, partial $\eta^2 = .008$.

Research Question 2

RQ2 addressed sport management students' (undergraduate and graduate) personal sustainable behaviors and beliefs regarding business and sport organizations' sustainable operations. For each output variable (personal sustainable behaviors, beliefs about business behaviors, and sport organization behaviors), composite subscale scores were calculated by averaging the 510 Likert scale responses from each of the three question groups. The resulting means were between 1-5 and can be interpreted as strongly disagree (1) to 5 strongly agree (5). A Pearson correlation was performed prior to assessing the relationship between the means of the output variables (see Table 5).

Table 5. Correlations of Output Variable Sub-Scale Averages (n=510)

Variable		Personal Behaviors	Business Behavior
Business Behavior	Pearson Correlation	.477**	
	Sig. (2-tailed)	<.001	
Sport Business Behavior	Pearson Correlation	.534**	.809**
	Sig. (2-tailed)	<.001	<.001

Results indicated that the relationship between the three behavior variables was significant and positive. There was a strong positive correlation, $r(508) = .809$, $p = <.001$ of between business behaviors and sport business behaviors.

To address sport management students' personal sustainable behaviors and beliefs regarding business, and sport organizations' sustainable operations, overall (RQ2), undergraduate (RQ2a), and graduate (RQ2b), means and standard deviations for each output variable or predictor is provided in Table 6. The means of personal sustainable behaviors were 2.85 for all students, 2.77 for undergraduates, and 3.03 for graduate students. This suggests that more than half the time, students try to practice environmental sustainability in their personal lives. The means of students' beliefs on sustainable business behaviors increased compared to personal behaviors as 3.51 was the mean for all students, 3.43 for undergraduates, and 3.69 for graduates. The final output variable, sport organization sustainable behaviors, increased compared to personal behaviors and business behaviors. Overall student means of beliefs on the sustainable behaviors of sport organizations were 3.67, undergraduates were 3.59, and graduates were 3.85. The results indicate that students hold businesses and sport organizations to a higher level of environmentalism than their own current environmental sustainability practices.

To address RQ2c, three one-way ANOVAs with a Bonferroni adjustment to control for running individual tests were performed due to the strong relationship between the dependent variables of business behaviors and sport organization behaviors. The ANOVA tests were performed to assess the statistical significance of the differences

Table 6. Means, Standard Deviations, and p-Values for Sport Management Student's Sustainable Personal Behaviors, and Beliefs about Business and Sport Organization Behaviors

Output Variable	**Measure**	**Overall**	**Academic Classification**		**p-value**	**Adjusted p-value**
			Undergraduate	**Graduate**		
		n=508	n=351	n=157		
Personal Behavior						
	Mean (*M*)	2.85	2.77	3.04	<.001	=.001
	Standard Deviation (*SD*)	.793	.776	.800		
Business Behavior						
	Mean (*M*)	3.51	3.43	3.70	.001	=.003
	Standard Deviation (*SD*)	.850	.823	.881		
Sport Organization Behavior						
	Mean (*M*)	3.67	3.59	3.85	<.001	=.002
	Standard Deviation (*SD*)	.812	.759	.897		

between the personal sustainable behaviors, beliefs about business behaviors, and sport organization behaviors of undergraduate and graduate students. Results indicated that all three ANOVAs were statistically significant (see Table 6). There are statistically significant differences between academic classifications and personal sustainable behaviors, $F(1,507) = 12.53$, $p = .001$, partial $\eta^2 = .024$. Results indicated that graduate students (M=3.04, SD=.80) have more sustainable personal behaviors than undergraduate students (M=2.77, SD=.78). Findings from the second ANOVA test revealed statistically significant differences between academic classifications and students' beliefs on sustainable business behaviors, $F(1,507) = 10.42$, $p = .003$, partial $\eta^2 = .020$. Results indicated that graduate students (M=3.70, SD=.88) believe that businesses should incorporate sustainable behaviors into operations more than undergraduate students (M=3.43, SD=.82). Lastly, results indicated a statistically significant differences between academic classifications and student's beliefs on sport organization's sustainable behaviors, $F(1,507) = 11.71$, $p = .002$, partial $\eta^2 = .023$. Results illustrated those graduate students (M=3.85, SD=.90) believe that sport organizations should incorporate sustainable behaviors into operations more than undergraduate students (M=3.59, SD=.76).

Environmental Sustainability Awareness

Two sets of questions were asked about students' awareness of environmental sustainability in sport (events and sport management programs). Awareness is an important variable in predicting and explaining environmental behaviors (Casper & Pfahl, 2012). The term "awareness" refers to a person's comprehension of the

fundamental parts of a problem, not simply being aware that one exists. The findings of this study indicated that approximately 72.9% of the participants have noticed environmental sustainability promotions at events while 83.7% reported participation in sustainable initiatives at a sporting event. Furthermore, 71.4% indicated that they would want to work for a sport organization that promotes and practices environmental sustainability, with 2% stating they would not want to work for a sustainable organization. However, only 22% of the students reported a willingness to pay more for a sport ticket to support environmental sustainability programs.

When students were asked about awareness of environmental sustainability education opportunities in their sport management programs, only 8.2% of all students reported that their institution had a standalone environmental sustainability course, while 74.3% responded that they were unsure. Similarly, 12.2% of students reported that they had taken a class related to environmental sustainability, while 73.5% of students reported they had not ever taken a standalone course. However, when asked if a professor or guest lecturer had spoken about the topic in a sport management class, the percentage of affirmative responses increased (>10%). Results of students' responses to awareness of environmental sustainability in sport are provided in Table 7.

Table 7. Student Awareness of Environmental Sustainability in Sport and Higher Education

Awareness	**Overall**		**Undergraduate**		**Graduate**	
	n=510		n=352		n=157	
	N	%	*N*	%	*N*	%
Sport						
I have noticed sustainable initiatives at a sporting event I have attended						
Yes	372	72.9%	255	72.4%	117	74.5%
Unsure	96	18.8%	69	19.6%	26	16.6%
No	42	8.2%	28	8.0%	14	8.9%
I have recycled my waste at a sporting event						
Yes	427	83.7%	301	85.5%	125	79.6%
Unsure	40	7.8%	29	8.2%	11	7.0%
No	43	8.4%	22	6.3%	21	13.4%
I would be willing to pay a higher price for sport tickets to support environmental sustainability programs						
Yes	112	22.0%	65	18.5%	47	29.9%
Unsure	191	37.5%	138	39.2%	52	33.1%
No	207	40.6%	149	42.3%	58	36.9%
I would want to work for a sport organization that promotes and practices environmental sustainability						
Yes	364	71.4%	247	70.2%	116	73.9%
Unsure	136	26.7%	98	27.8%	38	24.2%
No	10	2.0%	7	2.0%	3	1.9%

Table 7. continued

Awareness	Overall		Undergraduate		Graduate	
	n=510		n=352		n=157	
	N	%	*N*	%	*N*	%
Higher Education						
Does the department or college your major is housed in offer any environmental sustainability classes?						
Yes	42	8.2%	11	3.1%	31	19.7%
Unsure	379	74.3%	292	83.0%	86	54.8%
No	89	17.5%	49	13.9%	40	25.5%
Have you taken any classes related to environmental sustainability?						
Yes	62	12.2%	34	9.7%	28	17.8%
Unsure	73	14.3%	54	15.3%	19	12.1%
No	375	73.5%	264	75.0%	110	70.1%
Have you had a guest lecturer in any of your classes that pertained to environmental sustainability?						
Yes	100	19.6%	57	16.2%	43	27.4%
Unsure	51	10.0%	258	73.3%	100	63.7%
No	359	70.4%	37	10.5%	14	8.9%
Have your professors ever spoken about or included a module on environmental sustainability in sport in their class?						
Yes	80	15.7%	47	13.4%	33	21.0%
Unsure	154	30.2%	109	31.0%	44	28.0%
No	276	54.1%	196	55.7%	80	51.0%

CHAPTER FIVE

DISCUSSION AND CONCLUSION

Discussion

Awareness

The development of environmental awareness is part of the professional socialization process for sport management students (Casper & Pfahl, 2012). Faculty need to assess students' environmental awareness before designing curricula to help students develop the appropriate knowledge and skills before entering the professional sport arena (Mercado & Grady, 2017). Literature shows a connection between awareness, knowledge, and action, but there is limited research on this topic regarding sport management students. According to Casper and Pfahl (2012), awareness of an issue does not necessarily equate to knowledge. The issue's importance to the individual in conjunction with knowledge is a determinant for action. Therefore, although a student may be aware of the environmental issues in sport, without education, context, perspective, and knowledge, action may not be undertaken.

A greater understanding of the role awareness plays in student's sustainable decision making can play an essential part in understanding what content needs to be created and taught in the classroom for future sport managers promoting environmental actions within the industry (Casper & Pfahl, 2012; Mercado & Grady, 2017). As reported in the results, the findings of this study indicated that most students participated in sustainable initiatives at a sporting event and indicated that they would want to work for a sport organization that promotes and practices environmental sustainability. This suggests

that students are aware of the presence of environmental initiatives at sport events and of the importance of sport organizations to promote environmentalism. However, as Casper and Pfahl (2012) suggest, basic awareness may not indicate knowledge and a complete understanding of the importance of personal environmental stewardship within the sport industry itself. This is evident in this study as less than one-quarter of the respondents indicated they would pay a higher price for tickets to support environmental sustainability programs. The findings contradict the results of Greenhalgh and Dryer (2000) who found that fans and spectators of professional sport teams would be willing to pay up to $6.50 more for a sport event ticket to support environmental sustainability. A contributing factor to the unwillingness of a student to pay more for a ticket could be the student's status and stage in life. Usually, students are on a limited budget, and paying a higher price for a ticket to support environmental sustainability may not be a high priority to them. When undergraduate and graduate students were compared, a higher percentage of graduate students would be willing to pay more for a ticket to support environmental sustainability programs than undergraduate students. This could be explained by the fact that financial status plays a role in students' willingness or even ability to pay more for a sport ticket. Another contributing factor could be that as students progress through the education system, they are exposed to more information, education, and experiences with environmental sustainability, which could change their environmental perceptions. This is similar to Whitley and colleagues (2018) work, who stated that students' environmental values fluctuate throughout college. Alternately, another contributing factor could be that although students are aware of environmental sustainability in sport and responded that

they would want to work for an organization that promotes environmental initiatives, students may not believe that it is their personal responsibility to act sustainably (Macovei, 2015), or they may be limited by barriers such as lack of knowledge and potential consequences or available resources.

Although students reported a high level of awareness of environmental sustainability initiatives at sporting events, responses were vastly different regarding awareness in higher education institutions. Few students reported that their institution had a standalone environmental sustainability course or that they had taken a class related to environmental sustainability. However, when asked if a professor or guest lecturer had spoken about the topic in a sport management class, positive responses increased. These results support Graham and colleagues' (2018) findings, whose research exhibited the gap between environmental sustainability and sport management education. The findings showed that few standalone environmental sustainability courses are offered in sport management programs. However, instructors are finding ways to incorporate environmental sustainability modules into existing classes which could explain students' responses. Additionally, based on students' high level of awareness of environmental sustainability at sport events and low awareness in the classrooms, it can be suggested that the sport industry understands the importance of environmental stewardship and embraces and incorporates environmental sustainability at a substantially faster pace than higher education. Casper and Pfahl (2012) suggested that there is a link between awareness and action, but knowledge needs to be available to bridge the gap between the two. Higher education settings will need to find a way to incorporate environmental

sustainability educational opportunities in the curricula and address the disconnect between higher education and industry (Mallen & Grady, 2017).

Values, Beliefs, and Norms

The first three sub-sections of questions were related to students' environmental values, beliefs, and norms referred to as input variables. Even though graduate students had slightly higher means than undergraduate students in each of the three sub-sections, the differences in the means were not statistically significant. The lack of statistical significance is not surprising because climate change and environmentalism is a highly contested global topic that is becoming a topic of conversation on many social and political fronts (Nerlich & McCleod, 2016), in which students may be exposed. Although the results in this construct may not be statistically significant, it does not mean that they are not important. As Whitley (2018) pointed out the VBN Theory is not often used to evaluate students in higher education. Thus, all the results are critical in establishing a baseline of understanding for future research. The overall, undergraduate, and graduate mean for each variable represented a moderate to strong agreeance with the environmental statements, suggesting that students are aware of the importance of environmentalism. Values had the highest mean; however, the means of beliefs and norms variables decreased. Norms (the lowest average means of the input variables) represent the personal accountability felt by an individual to act responsibly. This is similar to the results seen in the study by Casper and Pfahl (2012). The authors used the VBN theory, and results indicated that personal norms were more significant predictors of environmental behaviors than values. This is consistent with the results of this study

and suggests that the link between awareness (values) and action (behaviors) needs a connector (knowledge). For example, values can be compared to awareness, and in both studies, there was a strong to moderate awareness of the importance of environmental sustainability. The moderate to strong connection continued from values into beliefs that action should protect the natural environment. However, as beliefs transitioned into ascription of responsibility or norms and eventually behaviors, the convictions (mean scores) that students would act (pay more for tickets) decreased. These results agree with Schwartz's (1977) moral norm-activation theory which suggests that norms are the most significant predictor of environmental behaviors. This is when knowledge becomes essential to bridge the gap between norms and behaviors or awareness and action. Findings in this study revealed that the amount of knowledge acquired by students is highly diverse regarding environmental sustainability. This is seen in the student's responses to the questions posed about awareness and exposure to environmental sustainability in higher education. A small percentage of students reported that professors had included a module on environmental sustainability in the class, while the majority were unsure or stated they did not know about environmental sustainability opportunities in the classroom. The results of this study support the initial findings by Casper and Pfahl (2012) and the work of Graham et al. (2018), illustrating the importance of adding sustainable education opportunities.

Behaviors

According to Stern (2000), environmental-related behaviors either directly or indirectly impact the environment. Three output behavior sub-scales were measured to

assess the current personal behaviors of students (overall, undergraduate, and graduate), in addition to the student's beliefs on the expected environmental behaviors of businesses and sport management organizations. First, there was a statistically significant difference between undergraduate and graduate students' responses in all three sub-scales. Graduate students had higher means scores in all output variable sub-scales using a 1 to 5 Likert scale. This suggests that graduate students have higher pro-environmental personal behaviors, hold businesses to a higher standard of environmental behaviors, and expect even more environmental stewardship from sport organizations than traditional business entities. The same as the input variables, the average scores for graduate students were higher in all categories and sub-scales than undergraduate students.

These variances in mean scores could be explained by differences in environmental educational opportunities (Graham et al., 2018; Greenhalgh et al., 2015), increased exposure to environmental initiatives on campus and sport events (Krizek et al., 2012), or simply life experiences, such as the geographic region in which they reside (Harraway et al., 2002). The average age in North America for undergraduates is 20.4, while the average age for graduates is 31.7 (Southeastern, 2021). The age difference between the two groups could indicate a difference in education and knowledge acquisition. First, graduate students may have been exposed to more advanced and broad curricula, in which environmental sustainability educational opportunities could have been more assessable (Graham et al., 2018; Greenhalgh et al., 2015). Additionally, as more campuses include environmental sustainability campus and institutional operations, graduate students may be exposed to more ecological resources due to spending longer

amounts of time on campus or being involved with higher education programs for longer than undergraduate students (Mercado & Grady, 2017; Shek et al., 2015). A study by Murray and colleagues (2022) showed that the United Nations Sustainable Development Goals were more common and aligned in graduate courses than undergraduate. Similarly, graduate students may have attended a variety of sport events at different levels and taken part in sustainable initiatives promoted by the sport organization at the event. Finally, graduate students are in a different stage in life than undergraduate students. Based on the age of the average graduate students, additional knowledge from life experiences has been collected, such as marriage, children, living in different regional areas, homeownership, and employment opportunities. The combination of unique life and educational experiences could have subjected graduate students to more aspects of the environment, thus accumulating more knowledge and understanding of the importance of sustainable behaviors (Shephard et al., 2015).

Personal Behaviors

Students' mean scores for expected environmental behaviors by sport organizations were higher than college students' current personal sustainable behaviors. Personal behaviors' mean scores were slightly higher than average, while sport organizations' mean scores strongly agreed with the statement. This is consistent with the awareness section where three-quarters of students responded they wanted to work for an environmentally conscious sport organization; however, few were willing to pay more for a sport event ticket if it was to support environmentally-friendly initiatives. The results

suggest that students' ecological values and beliefs may be pro-environmental, but that is not transferring into pro-environmental behaviors or actions.

Several reasons or barriers may explain lower personal environmental behavior scores. One reason is the lack of sustainable knowledge or retention. Students may not have been exposed to or learned about environmental sustainability during various life experiences. Rideout and colleagues' (2005) longitudinal study revealed that students' sustainable knowledge diminished over time after learning about environmental issues in the classroom. Another possible explanation could be the lack of environmental sustainability resources on campus (e.g., recycling centers). Although many colleges and universities have chosen to add environmental sustainability operations into daily campus life (Emanuel & Adams, 2011), there is diversity regarding the level of sustainable engagement by higher education institutions (White, 2014). For example, environmental sustainability is part of the culture in some universities (i.e., University of Colorado, Boulder) where a high level of engagement can be seen in all areas of campus life, including athletics.

Nevertheless, some institutions may not embrace environmental sustainability and have other focus areas. As White (2014) points out, even though campuses may promote environmental sustainability, the students' educational component to acquire sustainable knowledge may be missing. One final possibility for the difference between personal behaviors and business and sport beliefs could be explained through Stern's VBN Theory: the (lack of) awareness of consequences or ascription of responsibility. Students need knowledge of environmental sustainability to understand the potential consequences

of actions (or lack of). If a student does not deem the topic as important, they may not be interested in or seek out knowledge in the area. However, suppose a student deems knowledge of the subject important for his/her personal and professional future and the educational opportunities are not available. In this case, programs may need to be reassessed to ensure that resources are available to students to help them better prepare for their futures. After awareness of consequences, the next step in the VBN model is the ascription of responsibility. This is when an individual decides if personal actions will either avert or stimulate adverse environmental consequences. For example, in the awareness section of the study, students want to work for a pro-environmental sport organization and expect the organization to act in an ecologically-friendly manner.

However, students are not willing to pay more for tickets that will help sport organizations address environmental sustainability. This suggests that students may be deferring the personal responsibility to sport organizations, and by potentially working for one, the student is doing "their part." Again, students' personal behaviors may be due to a lack of knowledge and accurate understanding of environmental sustainability and the potential consequences of actions. By expecting more environmentalism from businesses and sports organizations, students transfer personal responsibility to the entities. This suggests that they value environmental sustainability but may not have the proper resources to take action. This could explain the lower mean scores for personal sustainable behaviors when compared to beliefs of sustainable behaviors from business and sport entities.

Implications and Recommendations

Communication and knowledge exchange will be needed to bridge the gap between higher education and the sport industry for enhanced environmental education. It will take a collaborative effort between the two to ensure that future sport management professionals acquire the environmental knowledge needed to succeed in the sport industry. As sport management programs within higher education institutions look to provide students with more environmental sustainability opportunities in the classrooms, facilitators will need to know what educational experiences would better prepare students for the professional future they seek in the sector. In addition, the sport industry needs to make recommendations of specific practical knowledge that new professionals need to be active promoters of environmental stewardship within sport organizations. Likewise, higher education should seek sport industry experts in environmental sustainability to assess what environmental skills and knowledge new professionals lack when entering the sport industry. Results of the study indicate that students hold sport organizations to a higher standard than traditional businesses, and students want to work for a sport organization that promotes environmental sustainability. Therefore, any feedback and input from the sport industry that can be shared with the students may encourage increased interest in gaining knowledge on the subject.

Although collaboration between higher education and the sport industry may have been a daunting task for each entity a few years back, now, it is highly feasible. Organizations such as the Green Sports Alliance and the Sport Ecology Group (SEG) have platforms in place for the collective collaboration, cooperation, and advancement of

environmental sustainability. Each organization has members (national and international) from higher education institutions and the sport industry with a cohesive goal of promoting environmental stewardship in sport through education, awareness, and promotion. Thus, allowing for knowledge transfer between all interested parties.

There are known barriers to implementing environmental sustainability education in sport management programs (see Graham et al., 2018 and Mercado & Grady, 2017). Lack of expertise on the subject is one of the known barriers to implementing environmental sustainability in the classroom. However, both human and educational resources relating to environmental sustainability are becoming more readily available. For example, the establishment and growth of the Sport Ecology Group have helped to alleviate this and other barriers. The SEG facilitates knowledge exchange between industry and academia and provides free resources (i.e., reading lists, case studies, slide presentations, teaching guides, podcasts, glossaries) for including environmental sustainability modules in sport management classrooms. The various resources are appropriate for use by educators of both graduate and undergraduate classrooms and their students (see Appendix A). In addition to free resources, The SEG provides access to industry and academic experts that could potentially be guest lecturers in higher education classes. The SEG also provides opportunities for graduate students to learn and grow as future professionals through the Graduate Student Membership Initiative (SEG, 2021). Therefore, sport management programs and educators can provide needed knowledge by incorporating environmental sustainability education into curricula, even if

it is only a module, to prepare future sport management professionals to be active participants and champions for continued sustainable development in the sport industry.

An additional option for environmental sustainability resources is the Office of Sustainability located on higher education institution campuses. Many athletic departments rely on the Office of Sustainability to provide knowledge and resources to implement environmental sustainability initiatives into athletics, such as student Green Teams (Pelcher & McCullough, 2019). The same resources may be available to sport management classrooms. The Office of Sustainability may be able to provide guest speakers and educational resources to educators to add environmental sustainability content into sport management classes. Additionally, many sustainability offices may be able to provide students with options to learn more about environmental sustainability through volunteer opportunities on the campus or at sport events. This would allow sport management students to gain practical knowledge of environmental sustainability through experiential learning, which can help prepare them for their professional futures.

Limitations

A few potential limitations of this study need to be acknowledged. Due to the subject matter, environmental sustainability, and ecological beliefs, it is possible that social desirability bias may affect responses. Social desirability bias is when "respondents edit their answers to questions to portray themselves in the best light, or at least better light to researchers" (Robinson & Leonard, 2019, p. 138). Even though the survey was anonymous, respondents could potentially over-report their ecological beliefs and behaviors due to this bias. Over-reported responses could result in higher mean values.

Additionally, students were asked about personal sustainable behaviors and future behaviors; therefore, subjectivity based on their level of sustainable knowledge must be considered.

There were more responses from males (n-331) than females (n=174). This gender ratio is typical of sport management students in higher education institutions. Research shows that 81% of sport management programs nationwide reported that female students represented less than 40% of the total number of students; furthermore, 40% of these institutions reported less than 20% female enrollment in sport management programs (Harris et al., 2014). Although this study's respondents represent a typical male-female proportion in sport management programs, and the results can be used to make inferences about sport management students, applying the results to the general higher education student population may not be appropriate.

Finally, the geographic locations of the respondents' institutions represented 23 states in four regions in North America. However, there were limited responses from the West (19), North (41), and Midwest (117) regions of North America, with the most responses coming from the South (320). Additionally, there was a similar distribution of students' primary residences with 34 residences in the West region, 83 in the North, 104 in the Midwest, and 243 in the South. Implications of this could result in skewed responses. If sport management students have different environmental perceptions in regions outside of the South, they may be underrepresented.

Future Research

Due to the limited amount of research using VBN to evaluate students in higher education, the findings of this research are essential in establishing a basis for future research. Whitley (2018) found that values play a role in predicting environmental behaviors of undergraduate students, but different values predict different behaviors. Casper and Pfahl (2012) alluded personal norms were more significant predictors of environmental behaviors than values. Therefore, a future study could use the data collected in this research to run a multiple regression analysis to evaluate the causal relationship between values, beliefs, and norms and the various environmental behaviors. The results of the multiple regression analysis could then be directly compared to the results from Casper and Pfahl (2012) to see if there is a difference in findings during the ten years.

Furthermore, because this research looked at graduate and undergraduate sport management students, the results can be used as a baseline for future longitudinal studies. Scholars can evaluate changes (if any) over time as more educational and professional opportunities related to environmental sustainability become available to students. This means that research will need to be conducted to assess if there are more educational opportunities in sport management curricula in the future. This could be done by repeating the study conducted by Graham et al. (2018), assessing the number of various environmental sustainability courses offered in sport management programs, and re-assessing student awareness of environmental sustainability classes offered in their programs. Repeating studies in this area is an essential step in longitudinal research.

Finally, future studies could assess if additional knowledge on environmental sustainability promotes pro-environmental behaviors. This could be achieved by including more open-ended, qualitative questions asking students to elaborate on specific responses, which in turn may identify the best predictors or catalysts for environmental actions. Furthermore, more open-ended questions can be added to understand the ascription of responsibility component. Results of the study indicated that students are aware of the importance of environmental sustainability in sport yet, most respondents stated they were not willing to pay more for a sport ticket to support environmentalism by a sport organization. Qualitative questions may aid researchers in understanding potential reasons for the quantitative results to better understand what might be done to change behaviors. There are numerous components of Stern's VBN Theory (1999) with limited studies revolving around college students, and even more so with sport management students. Opportunities are vast and needed to understand the causal relationship VBN Theory offers between the many facets of values, beliefs, and norms and the predicting capabilities on behaviors. However, having a baseline study on awareness, educational opportunities, values, beliefs, norm, and behaviors of sport management students will allow researchers to repeat those studies and evaluate the educational catalysts needed to turn awareness into action and bridge the gap between higher education and the sport industry.

Conclusion

Qualified personnel will be needed to find creative solutions for sport organizations to navigate the environmental challenges they will face as the sport

industry continues to implement environmental sustainability in its operations (Mercado & Grady, 2017). Sport management students should be aware of the current environmental state in sport and learn about environmental sustainability as part of their studies (Casper & Pfahl, 2012; Casper et al., 2012, Graham et al., 2018). The more sustainable knowledge students glean, the better prepared they will be to help prospective employers overcome some of the known obstacles that sport organizations face. As researchers and educators, students' environmental sustainability values, beliefs, and norms must be analyzed. Evaluating sport management students' awareness of environmental sustainability in sport may aid higher education institutions in developing more effective curricula.

The purpose of this study was to evaluate sport management students' (undergraduate and graduate) values, beliefs, and norms relating to environmental sustainability in higher education institutions across North America. The data were gathered through a survey utilizing the VBN Theory as the framework. The findings of this study provide scholars and practitioners with a baseline to understand the following: the current state of environmental values, beliefs, and norms of sport management students, student's personal sustainable behaviors, beliefs regarding the sustainable behaviors of businesses and sport organizations, and student's awareness of environmental sustainability in sport.

Regarding students' personal values, beliefs, and norms, the means indicated a strong agreement with the environmental statements indicating that students understand the importance of environmentalism. Results for the behavior variables were significant

and the mean scores (overall, undergraduate and graduate) for expected environmental behaviors by sport organizations were higher than college students' expected business beliefs and personal sustainable practices. This suggests that sport management students hold sport organizations to a higher environmental standard than traditional business entities and even themselves. Findings illustrated that students' ecological values and views may be pro-environmental, but this does not directly translate into pro-environmental behaviors or activities. More specifically, findings indicated that 72.9% of students are aware of the presence of environmental initiatives at sport events and the importance of sport organizations that promote environmentalism. Furthermore, 71.4% of the students responded that they want to work for a sport organization that promotes and practices environmental sustainability. However, only 22% of students indicated they would pay more for a ticket to a sport event to support environmental sustainability programs. Furthermore, just 8.2% of all students knew that their institution had a standalone environmental sustainability course, while 74.3% responded that they were unsure. Similarly, 12.2% of students stated that they had taken a class related to environmental sustainability, while 73.5% of students reported they had not partaken in a course. However, when asked if a professor or guest lecturer had spoken about the topic in a sport management class, the percentage of affirmative responses increased (>10%). These results exhibited the gap between environmental sustainability in the sport industry and sport management education.

In conclusion, environmental sustainability awareness alone may not facilitate action; knowledge is needed to bridge the gap (Casper & Pfahl, 2012). If sport

management students are to be fully prepared to undertake environmental issues when they enter the professional field, sport management programs will need to find a way to provide additional environmental sustainability educational opportunities in the curricula to address the disconnect between higher education and the sport industry (Graham et al., 2018). Communication and knowledge exchange will be required to bridge the gap. Future sport management professionals will need to learn about the environment to be successful in the sport sector, which will require a joint and comprehensive effort between academia and industry.

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APPENDICES

Appendix A

ES Educational Materials for Sport Curricula

Online Resources

The Sport Ecology Group (SEG) provides free resources on their public website (sportecology.org) for "sport industry practitioners working at the nexus of sport and climate, teaching materials for university instructors, organizing materials for green sport initiatives, our podcast, and more" (SEG, n.d., Resources section). Additionally, SEG encourages anyone who needs more information to contact the group for help. SEG offers many resources for both educators and students.

For educators, SEG offers a reading list of academic articles chosen by SEG members, which is updated every year. These articles are broken down into various categories (e.g., facility management, teaching, fan engagement) to make areas of interest easier to locate. Lecture slides come with a detailed teaching guide that includes talking points, discussion questions, and links to additional resources. Lastly, a regularly updated sport ecology glossary provides clear and comprehensible vocabulary and terminology (SEG, n.d.).

The SEG already works with university students at the undergraduate and graduate levels to develop future sport sustainability champions through the Graduate Student Mentorship Initiative. The student resource page includes resources for students to start their sport ecology studies and more information on the opportunities offered by the SEG, such as faculty member-led Green Team opportunities at significant sport events (SEG, n.d.). The SEG is continually updating resources, sharing knowledge, adding experts and

opportunities to progress sport ecology within all facets of the industry, especially for education.

Books

The seminal book on *Sustainability and Sport* was published a decade ago in 2011. The book is a compilation of thirty-four professionals and scholars in the area who continue to play key roles in expanding sustainable strategies for major sporting events, sport organizations, and society (Savery & Gilbert, 2011). *Sport Management and the Natural Environment* is the first book to present environmental philosophy and best practices in sport management, explaining how sport organizations can become more efficient and sustainable and exploring the critical lobbying role that sport organizations play in local and global communities. (Casper & Pfhal, 2015).

McCullough and Kellison (2017) compiled a book that examines the obstacles and opportunities the sports industry faces to deal with the increasing sustainability agenda. Additionally, it demonstrates how sport academics may incorporate sustainability into their diverse areas of expertise (i.e., management, sociology, law, activities, and ethics). The newest compilation comes from editors Dingle and Mallen (2020) and is geared towards researchers in environmental sustainability in sport. Using the most recent research on the topic, *Sport and Environmental Sustainability* examines sport at all levels in all aspects of sport management, from marketing and competitions to infrastructure and communications, and provides a compelling case for greater understanding of, and need for, environmental sustainability in sport (Dingle & Mallen, 2020). One of the only textbooks written exclusively for an educational overview of environmental sustainability

in sport is by Dr. Brian McCullough. He created *Introduction to Environmental Sport Management* (2015) which was used in the Sport Sustainability Leadership program at Seattle University.

Case Studies

One of the earliest case studies that evaluate environmental issues within sport through the triple bottom line is Fairley et al. (2011), who highlighted issues with the Formula One (F1) Australia Grand Prix held in Melbourne, Australia. The study background emphasizes the substantial government funding that the event receives, which creates continual public scrutiny. Fairley et al. (2011) created a case study that allows students to think about the theoretical and practical problems that arise when planning a sporting event, a venue, and dealing with stakeholders. It demonstrates the difficulties that entities face when providing public support for a sporting event and stresses the concerns with economic impact studies and the need to examine the event's economic, social, and environmental issues from a triple bottom line perspective.

Pelcher et al. (2021) examined the sustainability efforts communicated and put forth by the event organizers of the 2019 President's Cup golf tournament at the Royal Melbourne Golf Club in Melbourne, Australia. Pelcher and colleagues (2021) note, "it is unknown if the new trajectory in sustainability is being implemented and embraced by fans at all tournaments, specifically those that have unique cultures of their own, such as the President's Cup." The authors provide students with an "opportunity to (a) identify major issues and challenges in managing sport events in an environmentally friendly manner, (b) apply sustainable management and pertinent communication practices to the particular

context of golf tournaments and facilities, (c) broadly contextualize the complexity of environmental sustainability issues in sport, and (d) create a strategic sustainability plan" (Pelcher et al., in press).

Pelcher & McCullough (2019) designed a case study that explores the identification and formation of a "Green Team" or green committee on a college campus, Smallville University. This paper is a business case study for students to work as individuals or teams to use as an exercise to brainstorm original ideas and conclusions to solve the problem based on the information provided. The case study provides students with an "opportunity to (a) explore the importance of sustainability in sport, (b) analyze the role of stakeholders in a sports organization, (c) investigate common barriers to implementing sustainability in college athletics, and (d) consider creative options for implementing sustainable initiatives" (p. 13). Ultimately, students should discuss and share findings to better understand the nuances of implementing sport sustainability initiatives in their individual organizations by leveraging respective stakeholder groups.

Appendix B

Informed Consent Form

Consent for Research Participation

Research Study Title: Environmental Sustainability in Sport:
An Assessment of the Environmental Values, Beliefs, Norms, and Behaviors of Sport Management Students in Higher Education Institutions

Researcher(s): Jamee Pelcher, University of Tennessee, Knoxville
Dr. Sylvia Trendafilova, University of Tennessee, Knoxville

I/We are asking you to be in this research study because you are a college student (undergraduate, graduate or doctoral) in North America whose majors fall under the broad category of sport studies (i.e., sport management, sport studies, kinesiology, sport tourism and recreation, sport communication, etc.). You must be age 18 or older to participate in the study. The information in this consent form is to help you decide if you want to be in this research study. Please take your time reading this form and contact the researcher(s) to ask questions if there is anything you do not understand.

Why is the research being done?
The purpose of the research study is to examine the environmental values, beliefs and norms of sport management students, and how their values, beliefs, and norms correlate to personal sustainable behaviors and their beliefs on businesses and sport organizations sustainable behaviors.

What will I do in this study?
If you agree to be in this study, you will complete an online survey. The survey includes questions about personal value, beliefs, norms, behaviors and awareness of environmental sustainability in general and about the sport industry and should take you about 20minutes to complete. You can skip questions that you do not want to answer.

Can I say "No"?
Being in this study is up to you. You can stop up until you submit the survey. After you submit the survey, we cannot remove your responses because we will not know which responses came from you.
Either way, your decision won't affect your grades, your relationship with your instructors, or standing with your institution.

Are there any risks to me?
We don't know of any risks to you from being in the study that are greater than the risks you encounter in everyday life.

Are there any benefits to me?
We do not expect you to benefit from being in this study. Your participation may help us to learn more about how to bridge the gap between academia and industry and help institutions of higher education develop curriculum to better prepare students for the environmental challenges they will face in the sport industry. We hope the knowledge gained from this study will benefit others in the future.

What will happen with the information collected for this study?
The survey is anonymous, and no one will be able to link your responses back to you. Your responses to the survey will not be linked to your computer, email address or other electronic identifiers. Please do not include your name or other information that could be used to identify you in your survey responses. Information provided in this survey can only be kept as secure as any other online communication.
Information collected for this study will be published and possibly presented at scientific meetings.

Will I be paid for being in this research study?
You will not be paid for being in this study.

Who can answer my questions about this research study?
If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, If you have questions or concerns about this study, or have experienced a research related problem, contact the researcher, Jamee Pelcher (jpelche1@vols.utk.edu) or faculty advisor, Dr. Sylvia Trendafilova (sylvist@utk.edu).

For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:
Institutional Review Board
The University of Tennessee, Knoxville
1534 White Avenue
Blount Hall, Room 408
Knoxville, TN 37996-1529
Phone: 865-974-7697
Email: utkirb@utk.edu

Statement of Consent
I have read this form, been given the chance to ask questions and have my questions answered. If I have more questions, I have been told who to contact. By clicking the "I Agree" button below, I am agreeing to be in this study. I can print or save a copy of this consent information for future reference. If I do not want to be in this study, I can close my internet browser.

Appendix C

Student Recruitment Introduction

Hello!

My name is Jamee Pelcher, and I am a doctoral candidate at the University of Tennessee-Knoxville. I am currently collecting data for my dissertation research that evaluates the values, norms, and beliefs of students in regard to environmental sustainability in sport management programs in higher education institutions in North America. If you are an undergraduate or graduate (masters or doctoral) student with a major in the area of study that falls under the broad category of sport management, and you 18 years of age or older, I invite you to voluntarily participate in the survey. I have asked your instructor to forward this information to you. Participation is voluntary and participation will not affect your grades, your relationship with your instructors, or standing with your institution. Additionally, no information will be shared with your instructor or institution.

The study will take approximately 8-15 minutes, and I greatly appreciate your anonymous responses. The information gathered in this study would allow me to understand how students' environmental values, beliefs, and norms correlate to personal sustainable behaviors and their beliefs on business and sport organization's sustainable behaviors. This information will allow researchers and higher education institutions to discuss options on how to create and frame curriculum to prepare better future professionals in the sport industry based on the results of the study.

Appendix D

Faculty Request to Distribute Survey

Faculty Recruitment E-mail

Hello!

I hope that you are doing well. My name is Jamee Pelcher, and I am a doctoral candidate in the sport management program at the University of Tennessee-Knoxville. I am collecting data through an anonymous survey for my dissertation.

The purpose of the research study is to examine the environmental values, beliefs and norms of sport management students in higher education institutions across North America, and how their responses correlate to personal sustainable behaviors. Furthermore, the research will assess student's beliefs on the (environmental) sustainable behaviors of sport organizations.

For Faculty - I am respectfully asking for your assistance in forwarding this information and survey link (below) to your undergraduate and graduate (masters and doctoral) students in any sport studies or sport management classes you are teaching. I will be circulating this survey until October 25th, 2021. The survey should take approximately 8-12 minutes to complete and is entirely anonymous. Participation is voluntary. Below is the recruitment text and survey link for students and the approval from the IRB of the University of Tennessee, for your records.

Thank you so much for your assistance.

Survey Approval - UTK IRB-21-06398-XM
Please click the survey link below to begin.
Survey link: https://tiny.utk.edu/ES-Students

Additionally…I would appreciate it if you would forward this e-mail to any colleagues that may be able to distribute this survey to sport studies/management students.

For Students - If you are an undergraduate or graduate (masters or doctoral) student with a major in the area of study that falls under the broad category of sport management, and you are 18 years of age or older, I invite you to participate in the survey. Participation is voluntary and will not affect your grades, your relationship with your instructors, or standing with your institution. Additionally, no information will be shared with your instructor or institution.

The study will take approximately 8-12 minutes, and I greatly appreciate your anonymous responses. The information gathered in this study would allow me to

understand how students' environmental values, beliefs, and norms correlate to personal sustainable behaviors and their beliefs on the (environmental) sustainable behaviors of sport organizations. This information will allow faculty and higher education institutions to discuss how to create and frame curriculum to better prepare future professionals in the sports industry.

Please click the survey link below to begin.
Survey link: https://tiny.utk.edu/ES-Students

I am grateful for your consideration, help, and your time with this research. Feel free to contact me at jpelche1@vols.utk.edu with any questions or concerns.

Appendix E

IRB Approval Letter



May 10, 2021

Jamee Ann Pelcher

UTK - Coll of Education, Hlth, Human - Kinesiology, Recreation &

Re: UTK IRB-21-06398-XM

Study Title: Environmental Sustainability in Sport:

An Assessment of the Environmental Values, Beliefs, Norms, and Behaviors of

Sport Management Students in Higher Education Institutions

Dear Jamee Ann Pelcher:

The Human Research Protections Program (HRPP) reviewed your application for the above referenced project and determined that your application is eligible for exempt review under 45 CFR 46.101.

The Human Research Protections Program (HRPP) reviewed your application for the above referenced project and determined that your application is eligible for exempt review under 45 CFR 46.101. Category 2: Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met: i. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; ii. Any disclosure of the

human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or iii. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by .111(a)(7).

Your application has been determined to comply with proper consideration for the rights and welfare of human subjects and the regulatory requirements for the protection of human subjects.
Therefore, this letter constitutes full approval of your application (version 1.1). You are approved to enroll a maximum of 500 participants. Approval of this study will be valid from 05/10/2021.

Approval Information:
Application v 1.1, Exempt Category 2, Waiver of Documentation of Consent, n=500

- IC Anonymous Survey v 1.1
- Pelcher Dissertation Survey Instrument v 1.1
- Follow up e-mail v 1.0
- Request to forward survey v 1.0
- Student recruitment/Introduction text v 1.0

You may use a Consent Cover Statement in lieu of an informed consent interview. The requirement to secure a signed consent form is waived; willingness of the subject to participate will constitute adequate documentation of consent.

Any revisions in the approved application, consent forms, instruments, recruitment materials, etc., must be submitted to and approved by the IRB prior to implementation. In addition, you are responsible for reporting any unanticipated serious adverse events or other problems involving risks to subjects or others in the manner required by the local IRB policy.

Please note that restrictions are in place due to the COVID-19 pandemic, and all in-person contact with research participants is on hold until June 1, 2021.

- Newly-approved studies with in-person interactions may not begin enrollment until June 1, 2021.

- Newly-approved studies with no in-person participant interaction may begin after receiving IRB approval.

Please monitor the COVID-19 Updates at
https://irb.utk.edu/covid-19/ for the latest information.

Any alterations (revisions) in the protocol must be promptly submitted to and approved by the UTK Institutional Review Board prior to implementation of these revisions.

You have individual responsibility for reporting to the Board in the event of unanticipated or serious adverse events and subject deaths.

Sincerely,



Lora Beebe, Ph.D., PMHNP-BC, FAAN

Chair

Institutional Review Board | Office of Research & Engagement
1534 White Avenue Knoxville, TN 37996-1529
865-974-7697 865-974-7400 fax irb.utk.edu

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Appendix F

Survey Instrument

Instructions: Please identify the response that best describes the extent to which you agree or disagree with the following statements.

Environmental Values (Casper & Pfahl, 2012)

	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
1. It is important for me to prevent environmental pollution	□	□	□	□	□
2. It is important to me to protect the environment and preserve nature	□	□	□	□	□
3. It is important to me to respect the earth, nature and all its species	□	□	□	□	□
4. It is important for me to be in unity with nature	□	□	□	□	□

Environmental Beliefs - New Ecological Paradigm Scale (Casper & Pfahl, 2012, Dunlap et al., 2000)

	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
5. Humans have the right to modify the natural environment to suit their needs	□	□	□	□	□
6. Humans are severely abusing the environment	□	□	□	□	□
7. The balance of nature is strong enough to cope with the impacts of modern industrial nations	□	□	□	□	□
8. The earth is like a spaceship with very limited room and resources	□	□	□	□	□
9. The so-called “ecological crisis” facing humankind has been greatly exaggerated	□	□	□	□	□
10. If things continue on their present course, we will soon experience a major ecological catastrophe	□	□	□	□	□

Environmental Personal Norms (Casper & Pfahl, 2012)

	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
11. Conserving natural resources is important to me	□	□	□	□	□
12. I have a responsibility and should help to conserve natural resources	□	□	□	□	□
13. I would be willing to accept cuts in my standard of living to protect the environment	□	□	□	□	□
14. I would be willing to pay much higher prices in order to protect the environment	□	□	□	□	□
15. I am willing to lead environmental change efforts in organizations of which I am a member	□	□	□	□	□
16. I would encourage others to change their behaviors to become more environmentally friendly	□	□	□	□	□

Environmental Personal Behaviors (Casper & Pfahl, 2012)

	Never	Sometimes	About Half the Time	Most of the Time	Always
17. How often do you make a special effort to buy fruits and vegetables grown without pesticides or chemicals; also known as organic fruits and vegetables?	□	□	□	□	□
18. How often do you avoid buying products from a company that you know may be harming the environment?	□	□	□	□	□
19. How often do you make a special effort to buy household chemicals such as detergent and cleaning solutions that are environmentally friendly?	□	□	□	□	□
20. How often do you make a special effort to buy paper and plastic	□	□	□	□	□

products that are made from recycled materials?					
21. How often do you consider your personal impact on the environment when planning outdoor activities?	□	□	□	□	□
22. How often do you turn off lights when they are not in use?	□	□	□	□	□
23. How often do you try to reduce water consumption?	□	□	□	□	□
24. How often do you try to use less paper products?	□	□	□	□	□
25. How often do you recycle plastic or cans?	□	□	□	□	□

Environmental Business Behavior (Casper & Pfahl, 2012)

	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
26. Businesses have a responsibility to add environmental issues into their operation	□	□	□	□	□
27. Businesses have a responsibility to add environmental issues in employee's daily tasks	□	□	□	□	□
28. Businesses have a responsibility to facilitate change to employee’s non-work activities	□	□	□	□	□
29. Businesses should have a responsibility to integrate environmental issues into strategic planning processes	□	□	□	□	□

Environmental Sport Organization Business Behavior (Revised from Casper & Pfahl, 2012)

	Strongly Disagree	Mildly Disagree	Unsure	Mildly Agree	Strongly Agree
30. Sport organizations have a responsibility to include environmental issues into their operations	□	□	□	□	□

31. Sport organizations have a responsibility to add environmental issues in employee's daily tasks	□	□	□	□	□
32. Sport organizations have a responsibility to facilitate change to employee's non-work activities	□	□	□	□	□
33. Sport organizations should have a responsibility to integrate environmental issues into strategic planning processes	□	□	□	□	□
34. Sport organizations should conserve and protect natural resources.	□	□	□	□	□
35. Sport organizations should publicly address environmental issues	□	□	□	□	□
36. Sport organizations should encourage fans to participate in their environmental sustainability practices at the venue during games?	□	□	□	□	□

Instructions: For the questions in this section, select the answer you identify with the most.

Awareness of Environmental Sustainability in Sport (New Survey Items)

	No	Yes	Unsure
37. I have noticed sustainable initiatives (e.g., recycling,) at a sporting event I have attended	□	□	□
38. I have recycled my waste at a sporting event	□	□	□
39. I would be willing to pay a higher price for sport tickets to support sustainability programs	□	□	□
40. I would want to work for a sport organization that promotes and practices environmental sustainability	□	□	□

Awareness of Environmental Education (New Survey Items)

Instructions: For the questions in this section, select the answer you identify with the most.

	No	Yes	Unsure

41. Have you heard of the term environmental sustainability? (If answer is no, then survey will proceed to demographic questions)	□	□	□
42. Does the department or college your major is housed in offer any environmental sustainability classes? ** a. What is the class?	□	□	□
43. Have you taken any classes related to environmental sustainability? ** a. What was the class?	□	□	□
44. Have you had a guest lecturer in any of your classes that pertained to environmental sustainability? ** a. What was the topic? b. What class?	□	□	□
45. Have your professors ever spoken about or included a module on environmental sustainability in sport in their class? ** a. What class was it in?	□	□	□

Environmental Sustainability Education Interest (New Survey Items)

	No	Yes	Unsure
46. Do you believe the curriculum in your major should include a class focused on environmental sustainability?	□	□	□
47. Would you be interested in learning more about environmental sustainability? ** a. What would you be interested in learning?	□	□	□
48. Would you be interested in an experiential learning experience related to environmental sustainability in sport (e.g., being on green team for a collegiate or professional sport event)?	□	□	□
49. Would you take an environmental sustainability in sport course if it was offered in your department?	□	□	□
50. Do you think that knowing about environmental sustainability will be important for your future in sport?	□	□	□

51. Are there any additional comments you would like to add that were not addressed in the survey?

Demographic Items

Instructions: For the questions in this section, select the answer you identify with the most.

1. To which generation do you belong?
    - Generation Z (born 1997 or later)
    - Millennials (born 1981-1996)
    - Generation X (born 1965-1980)
    - Boomers (born 1946-1964)
    - Silent (born 1928-1945)
    - Prefer not to answer

2. Gender Identification
    - Male
    - Female
    - Nonbinary
    - Other _____
    - Prefer not to answer

3. Year in School
    - First year
    - Sophomore
    - Junior
    - Senior
    - Master's student
    - Doctoral student

    16.

4. What is your Academic Major?

5. What state or territory is your higher education institution located in?

6. What state or territory do you currently reside in?
    17.

7. Do you identify as an avid sport fan?

VITA

Jamee Ann Pelcher was born and raised in New Jersey, but she has called Franklin, NC home since 1996. Jamee was an elite level gymnast and graduated from Holmdel High School in 1987. Afterwards, she promptly began her career as an entrepreneur. Jamee owned and operated many businesses in the restaurant, event catering and hospitality, equine, and service industries. Additionally, she was a business consultant to several local sport clubs and teams. After a life-changing event, Jamee enrolled at Southwestern Community College in 2012. She found her passion for environmental sustainability while completing her business administration degree. Jamee was awarded the Chancellor's Scholarship at Western Carolina University where she was able to take her lifelong love and sport and business experience to earn her B.S.B.A degrees in sport management and finance with a minor in economics. She gained her U.S.G.B.C. LEED Green Associate certification during her time at Seattle University in the Sport Sustainability Leadership master's certificate program. Jamee returned to Western Carolina University to continue her studies in the MBA program. She graduated in spring of 2019 and started at the University of Tennessee, Knoxville as a Graduate Teaching Associate as she pursued her doctoral degree in Kinesiology and Sport Studies with a research focus in environmental sustainability in sport and sport ecology.