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John Schumacher

University of Connecticut - Storrs, john.schumacher@uconn.edu

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Environmentally Sustainable Practices at Small Community Sport Facilities

John H. Schumacher

B.A., Whitman College, 1995

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Master of Science Thesis

Environmentally Sustainable Practices at Small Community Sport Facilities

Presented by

John H. Schumacher, B.A.

Major Advisor _____

Laura J. Burton, Ph.D.

Associate Advisor _____

Jennifer E. McGarry, Ph.D.

Associate Advisor _____

Joseph N. Cooper, Ph.D.

University of Connecticut

2016

Abstract

Despite the “greening” trend of professional/university sport organizations adopting more environmentally friendly approaches to the management of their sport facilities, a significant “greening gap” has grown between those organizations and the thousands of small community sport facilities (SCSFs) across the country. These SCSFs have yet been able to integrate environmentally sustainable (ES) policies into their operations in the way that the professional and university facilities have.

As limited research existed in this area, I conducted a qualitative research investigation utilizing the framework of the diffusion of innovation theory to explore SCSF managers’ perceptions concerning the implementation of ES in the maintenance and operation of their facilities. In order to collect the necessary data to develop a deeper understanding of the SCSF managers’ perceptions, I conducted interviews with seven SCSF managers across New England to assess awareness and priority of ES in the SCSF managers’ jobs, as well as to identify what barriers they saw as preventing them from implementing more ES enhancements.

The results indicated that SCSF managers were only superficially aware of ES practices and that the respondents perceived that a lack of available funding was the greatest factor preventing them from implementing ES enhancements. However, a deeper analysis of the data revealed that it was not funding, but rather a fundamental lack of understanding of ES – or at least an inability to articulate what ES meant in the context of their job – that was the most significant factor limiting the adoption of ES innovations.

Accordingly, the implication of these findings suggest that the roadmap to increased adoption of ES initiatives at SCSFs begins with an enhanced educational focus with the goal of elevating ES to a foundational pillar within university Sport Management curriculum.

Keywords: sport, environmental sustainability, facility management, small community, diffusion of innovation theory

Chapter 1: Introduction

Background

Over the last several decades, scientific research has indicated that construction, transportation and industrial development in support of human activity have been voraciously devouring our global resources and significantly contributing to the increasingly rapid degradation of our planet's ecosystems and environmental conditions (Ralph and Stubbs, 2014). At the same time, an increased focus on individual health, fitness and the consumption of sport as both participant and spectator has driven the development of the sport facility industry to reach new heights, significantly increasing the amount of resources claimed by the industry as it continues to grow (Rivera, 2015).

At the intersection of construction, transportation and sport are the facilities in which sports are played as participants or consumed as spectators. Over the last twenty years alone, Americans have seen more than 100 new elite sports facilities opened across the country. Of this newly developed infrastructure, 90 percent has replaced previously existing structures – most of which were replaced simply to allow increased revenue streams, rather than due to any age-related structural issues (Gordon, 2013).

This increased development of sport infrastructure has become a major issue from an environmental standpoint, as buildings account for more than 40% of world's energy use, emitting more CO² than the transportation and industry sectors alone and using extraordinary amounts of energy (Clark, 2014). As an example, the annual energy consumption of the Dallas Cowboy's stadium is over 23 million kilowatts per season, which is equivalent to the same amount of energy utilized by the 88,000 residents of Santa Monica, CA over the course of an entire year (Glubiak, 2009). Overall, it is estimated that “the four major professional leagues (NFL, MLB, NBA, NHL)

generate approximately 35,000 metric tons of carbon dioxide (CO²) each year from their fans' waste activities alone" (Waste Management, 2013, p.1).

In order to reduce the environmental impact of sporting infrastructure across the United States, a concerted effort needs to be made across all sectors of sport – at the professional, collegiate and community levels. Since 2010, more than 30 professional teams from the NFL, NBA, MLS and NHL (NRDC, 2012) as well as more than 50 universities (NRDC, 2013) across the country have established some sort of certification or environmental partnership associated with the development, construction or operations of their sporting facilities.

One such example has been the internationally respected LEED (Leadership in Energy and Environmental Design) designation, an independently verified green building certification program with the goal of reducing the ecological impact of new and upgraded infrastructure and facilities (USGBC, n.d.). Green certifications like the North American-based LEED and U.K.-based BREEAM (Building Research Establishment Environmental Assessment Methodology) organizations emphasize strategies that have successfully enhanced performance metrics concerning energy management, efficiency of water use, reduction of CO² emissions, as well as improved the indoor environmental quality of various sporting facilities, resulting overall in a reduced impact on the natural environment, improved ecological awareness and better stewardship of natural resources by a number of professional and university sporting organizations (BREEAM, n.d.).

Huberty (2014) highlights the benefits that environmentally sustainable buildings offer facility managers: "green facilities are designed to use resources more efficiently when compared to conventional buildings built simply to code and lead to substantial operational savings. Green

buildings often provide healthier work and living environments, which contributes to higher productivity and improved employee health and comfort” (p.597).

The “greening” trend in sport infrastructure reflects both the increasing sociological and political pressure to encourage businesses (sport and otherwise) to have environmental considerations built into their corporate policies, but also the financial savings that can be reaped through the implementation of such environmental policies in their business practices, helping to align the business and corporate social responsibility units within the organizations (Anagnostopoulos, Byers & Shilbury, 2014; Chen, Chen, Tai, & Hsiung, 2015; Giulianotti, 2014; Trendafilova, Babiak & Heinze, 2012).

The Problem

However, the number of small, local community sporting facilities that have followed this “greening” trend, has been only a small fraction of the projects implemented at the professional or university level. Although a number of studies have been conducted concerning the application of ES at the professional and elite university sport level, similar research at the SCSF level has been minimal or nonexistent (Trendafilova, et al., 2012).

The purpose of this study was to explore Small Community Sport Facility (SCSF) managers’ perceptions of and procedures concerning the implementation of environmentally sustainable (ES) practices and policies in the maintenance and operation of their facilities. Accordingly, the goals of this project were to describe, interpret and understand the perspectives of these SCSF managers as they do (or do not) apply ES policies. A variety of influences could be driving their motivations – personal opinion, institutional pressure, environmental expectations from the predominate social

climate in America – and these have been formed and communicated through social interaction as cultural norms concerning environmentalism have developed over time (Ekins, 2011).

Rich qualitative interview data from managers of SCSFs in New England provided the heart of the information analyzed and underpinned the output and conclusions from this research study. Furthermore, the framework – based on the diffusion of innovation theory as explained below – was utilized to explore the unique antecedents and underlying causes affecting motivation (or lack thereof) and managers' decision-making processes for adoption of ES policies or procedures at their venues.

Framework: Diffusion of Innovation Theory

In simple terms, the diffusion of innovation theory provides a framework for understanding how, why and at what speed new and beneficial ideas are adopted by individuals and organizations. Rogers (1962, 2001, 2003) defines innovation as “an idea, practice, or object that is perceived as new by an individual” (Kellison & Hong, 2015, p.250) and identifies diffusion as “the rate of adoption by other organizations.” The theory describes the process of adoption of a particular innovation as a result of communication within a social system, and the mechanisms that increase (or decrease) the likelihood of the adoption of the particular innovation by others who have not yet done so (Rogers, 2003).

Rogers' diffusion of innovation theory is based upon the concept that there are five main characteristics that determine a specific innovation's rate of adoption: “(a) relative advantage, (b) compatibility (c) complexity, (d) trialability, and (e) observability” (Rogers, 2001, p. 7541).

Relative advantage – Rogers (2001) defines this characteristic as the “degree to which an innovation is perceived as better than the idea it supersedes...[and] may be perceived in economic terms, or as social prestige, convenience, and satisfaction” (p. 7541). A higher degree of positive perception indicates that the respective innovation will be adopted more rapidly (Straub, 2009).

Compatibility – Kellison and Hong (2015) describe the characteristic of compatibility as the degree to which an innovation fits into an “individual’s existing understanding or values” (p. 251), the more compatible the innovation is with one’s values, the more quickly it will be adopted.

Complexity – Complexity refers to “the degree to which an innovation is perceived as difficult to understand and put into use” (Rogers, 2001). The more easily understood an innovation is seen as, the more quickly it will be adopted.

Trialability – Straub (2009) explains trialability as “the opportunity to try out an innovation” (p. 631), with an increased opportunity to test resulting in the facilitation of an adoption.

Observability – Kellison and Hong (2015) explain observability as the relative visibility of the results of an innovation to others. Thus the easier the results are to be observed, the more likely the innovation will be adopted by others.

Diffusion of Innovation Theory: Extensions

Dearing (2009) and McCullough, Pfahl and Nguyen (2015) summarize the extensions of Rogers’ initial theory by identifying four additional unique elements that can be utilized to explain the diffusion process. In addition to the innovation itself (as described above), the other elements taken into consideration are (1) time, (2) the social system, (3) the channels of communication, and (4) the adopter’s decision-making process.

(1) Time

Straub (2009) explains this element of Rogers' theory by framing the fluctuating levels of adoption and diffusion in a context of time – and thus dividing adopters into categories related to the speed it took them to adopt the innovation: innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003).

(2) Social System

Kellison and Hong (2015) summarize the relationship of an innovation to this element by pointing out that “all diffusion occurs within a social system” and thus is “influenced by the social structure or norms of the system” (p.252). Therefore, one needs to include the consideration of cultural values and informal opinion leaders within a social unit, as well as change agents (i.e., those who seek to intervene the system's opinion leaders, paraprofessional aides and innovation champions), as well as the perceptions of social pressure to adopt innovations (Dearing, 2009).

(3) Channels of communication

Straub (2009) describes the communication channels as “the means and mechanisms by which information about a particular innovation is passed from individual to individual... this can be direct communication, vicarious observations of peers and models, or even the influence of mass media” (p. 631).

(4) The adopter and their decision-making process

The final element refers to an individual's tendency to adopt innovations in general and reflects upon where they fall on the diffusion curve of early, mid or late adopters of other innovations. It emphasizes the importance of understanding how individual adopters are influenced

by opinion leaders within their social groups and what kind of impact change agents have with respect to the individual adopter's decision-making process (Dearing, 2009).

Straub (2009) clarified the stages of an individual's decision-making process to adopt (or not adopt) an innovation. These stages included awareness (whether sought out or learned from another person, organization or the mass media), persuasion (where they have gained enough information to make a personal judgment), decision (adoption or rejection), implementation (acting upon the decision), and confirmation (where the individual evaluates the decision and implementation process).

Research Questions

Through the exploration of these topics and utilization of the framework based on the diffusion of innovation theory, the purpose of this study was to assist in the development of an understanding of the level of importance of ES implementation to SCSF managers, identification of what barriers or impediments prevent a greater degree of implementation of such policies at SCSFs, and a determination of what potential actions could be taken to increase the adoption of ES policies at SCSFs. In addition, a supporting objective of this study was to help fill the gap in the literature with respect to the understanding of the perceptions of ES at SCSFs.

In order to collect data concerning the problems identified, the following research questions were utilized to guide the interview design process:

1. To what degree are SCSF managers aware of ES practices and what level of priority does ES hold within the management of their facilities?

2. What barriers or impediments do small community sport facility managers see as preventing them from pursuing the implementation of environmentally sustainable policies, procedures or certifications?
3. How do the social value and potential economic benefits factor into the decision-making process when considering green management policies?

Chapter 2: Literature Review

Environmental Sustainability and Sport

Environmental researchers Ralph and Stubbs (2014, p.1) emphasize that “the current state of the global natural environment constitutes one of the most urgent and significant challenges in recent history [and] the overwhelming view of scientists is that organizations, industries and governments must adopt sustainable practices and commence mitigation action to prevent further degradation, to decrease current greenhouse gas emissions and to prevent further increases in emissions in order to minimize these impacts”. Goodland (1995) emphasized the time urgency of environmental sustainability – described alternatively as sustainable development – by noting that “most natural capital or environmental services cannot be substituted for, and their self-regenerating properties are slow and cannot be significantly hastened” (p. 13).

Sustainable development – commonly defined in academic literature (Mallen, Adams & Stevens, 2011) by using the United Nations’ (UN) Brundtland Report (1987) definition – refers to the ability to meet “the needs of the present without compromising the ability of future generations to meet their own needs” (p.16). The concepts within this report became a driving force behind the 1992 UN Conference on Environment and Development (UNCED) and foundation for the UN’s Agenda 21, which was subsequently adopted by the International Olympic Committee (IOC), one of the world’s leading and most influential sporting organizations, in 1999 (IOC, 2001; Paquette, Stevens & Mallen, 2011). Accordingly, the IOC took “measures to reflect such concern in its activities and educate... all those connected with the Olympic Movement as to the importance of sustainable development” (IOC, 2001, p.7), thus attempting to influence the way that “International Federations (IFs), the National Olympic Committees (NOCs), the Olympic Games Organizing

Committees (OCOGs), athletes, clubs, coaches and all individuals and enterprises associated with sport” (p.21) perceived the importance of environmental sustainability in sport.

Over the last decade, mega-event, professional and university sport infrastructure development has been the most visible manifestation of the application of environmental sustainability (Paquette, et al., 2011; Trendafilova, et al., 2012; Casper, Mcsherry & Pfahl, 2012). In addition, Kellison and Hong (2015) highlight the increased academic examination of this intersection of sustainable development and sport (Casper et al., 2012, McCullough & Cunningham, 2010; Ralph & Stubbs, 2014) emphasizing important elements such as the consideration of the natural environment as a primary stakeholder in sport management (Mallen & Chard, 2011) and an awareness of the significant value that socially responsible environmental practices can provide (Uecker-Mercado & Walker, 2012). Recent academic literature has combined the environmental and social aspects with their economic impact, creating a three-dimensional model of sustainability (Janeiro & Patel, 2015) where environmental, social and economic aspects have to be taken into account, often referred to as the “Triple Bottom Line” (TBL): “thinking that integrates profit, people and the planet” (Giminez, Sierra & Rodon, 2012, p.149).

Application of the Diffusion of Innovation Theory

The diffusion of innovation theory has been applied in a number of different disciplines, from healthcare to technology, and from communication to education. In this section, I summarize some of the academic literature from different industrial applications and highlight how the framework was utilized.

The use of the diffusion of innovation theory in health management has been applied to many aspects of the healthcare industry, from the adoption of new pharmaceuticals to newly developed

autism interventions. Makowsky, Guirguis, Hughes, Sadowski and Yuksel (2013), for example, found the diffusion of innovations theory to be a valuable tool for identifying the most prominent factors influencing a pharmacist's decision for prescribing new medications in the healthcare industry. In contrast, Dingfelder and Mandell's (2010) research utilized the diffusion of innovation theory to explore why effective and successful interventions for autism were rarely adopted in public mental health education systems. As a part of their conclusions, they note that the diffusion of innovation theory suggests that contextual factors are "critical to the adoption and continued, committed use of the intervention", and that key stakeholders must be involved to foster "large scale use of effective treatments" (p.603).

The technology industry has also seen many uses of the application of the diffusion of innovation theory in its discipline, ranging from the adoption of mobile banking in various countries to the implementation of IT advances in education. As examples, Al-Jabri and Sohail (2012), Lin (2014) and Odumeru (2013) all utilized a framework of the diffusion of innovation theory to identify the comparative antecedents, relative advantage and compatibility of mobile banking for customers in Saudi Arabia, China and Nigeria, respectively. For example, Lin's (2014) research emphasized the value of the trialability and observability of an innovation, and how the communication channels over time and through the social system provide feedback to adopters that reduce the uncertainty of the benefits and risks of the innovation.

Wang and Qi (2010), however, focused on an examination of the development of practical and effective IT applications utilized by primary and secondary educational institutions in China. They utilized the framework of the diffusion of innovation theory to examine the various factors that influence the adoption of educational IT applications. Through their research, they determined that

strengthening the educational resources and enhancing training opportunities were the most influential factors in increasing adoption of IT innovations.

Utilizing the Diffusion of Innovation Theory Across Disciplines

Several researchers have also successfully blended different disciplines in their application of a diffusion of innovation theory framework, such as in technology/environment, and healthcare/technology.

Dijk, Kemp and Valkering (2013) utilized a framework of the diffusion of innovation theory to focus on the creation of a theoretical model that could be applied to the intersection of technology and the environment: specifically to help identify the cause-and-effect relationships of social connotation with investments, prices, technological progression with respect to Hybrid Electrical Vehicles (HEVs). Their research indicated that there is a waterfall effect and tipping point along the time scale of innovations where more consumers acknowledge the positive social connotation of ES product innovations, consumer appetite for such products will increase, which triggers further R&D investments and subsequently more new and innovative products.

Similarly, Hilz (2000) utilized technology as the common element in a blended use of a framework derived from the diffusion of innovation theory as applied to healthcare. Specifically, her research focused on the role of an informatics nurse as a change agent for increased adoption within healthcare settings. Hilz's research highlighted the significance of the change agent in the diffusion of innovation process, particularly with respect to their ability to influence the social system. In addition, she utilized the elements of the decision-making process to design training interventions to specifically address each element to facilitate the adoption of the respective innovations.

In addition, Khor, Thurasamy, Ahmad, Halim and May-Chiun (2015) blended technology and environmental sustainability by utilizing the diffusion of innovation theory as one of several theoretical frameworks that can guide the internal alignment of firms' resources to accelerate the adoption rate of innovations in green Information Technology/Information Systems and Information and Communication Technologies. In particular, he used the diffusion of innovation to break down the decision-making structure and identify that "technological innovation and diffusion allows firms to adopt innovative technology without substantial increase of pressure related to higher cost" (p. 585).

Application of Diffusion of Innovation Theory in Sport

Utilizing a blended application of frameworks derived from the diffusion of innovation theory with sport-related disciplines is also not uncommon within the literature. For example, O'Brien and Slack's (2004) research utilized diffusion innovation as one prong of their exploration of a new professional logic that had spread through the organization of English rugby union. They highlighted the application of Kraatz' (1998) three types of diffusion processes: "bandwagon, status-driven and the social learning of adaptive responses" (p. 18) and concluded that bandwagon and status-driven diffusion thrived "under conditions where firms lack channels for sharing rich or reliable information" (p. 20) and often resulted in faddish adoption of innovations. However, in social learning diffusion, organizations observe the adaptive responses and evaluate outcomes of the early adopters, allowing for better-informed decisions and thus more efficient and deeper means of innovation adoption.

Donaldson and Poulos (2010) blended sport and injury prevention by utilizing a framework derived from the diffusion of innovation theory to propose strategies for increasing the adoption of

sport safety guidelines in Australia. In order to increase the adoption of these safety guidelines, they examined the New South Wales sporting organizations through the prism of the diffusion of innovation theory to identify the elements that could be fortified to facilitate a more rapid adoption of the guidelines. In practice, this resulted in focusing on change agent interaction with opinion leaders to alter community sports providers' perceptions of the guidelines, and thus increase adoption.

Carey and Mason (2014) utilized the case study method to explore the diffusion of innovation theory as applied to the efforts of a Canadian city to pass a referendum to fund several facilities, including a recreation center and sport center. The diffusion of innovation theory was an ideal framework for this case study as it was able to clearly illustrate the development and dynamics of a strategic plan to utilize all of Rogers' (2003) elements through to a successful adoption. The extraordinary power of "peer networks or interpersonal contacts within and between communities" was highlighted as a significant element of influence on the adoption rate of an innovation. Within those networks, the opinion leaders were identified as the most important in convincing others of the value of adopting the innovation. Examining the linear relationship between the change agents, the opinion leaders, and the community as a whole, the opinion leaders – with inspiration from change agents – were found to be in a position of influence to harness the resources of the city environment, control information, structure the debate and recruit community champions to build towards the tipping point of majority support for the initiative.

One of Carey and Mason's (2014) conclusions was particularly valuable to the development of the SCSF manager study. They noted that "in a smaller city, opinion leaders are much more likely to have formal and informal ties with many other members of the community, and therefore are

better equipped to shape public opinion through informal interactions with other stakeholders” (p.119). Thus I kept a particular eye out for data that referenced local opinion leaders and their perceptions of ES in the community.

Hong, Magnusen and Mondello (2015) attempted to utilize a combination of the diffusion of innovation theory with the unified theory of policy innovation (described by Hong et al. as a diffusion derivative focusing on government policy innovation research, combining internal determinants with the effects of diffusion) to explore the factors influencing the probability of the construction of a new stadium from both the perspective of the sporting team and the city or state’s governmental perspective. Hong et al. had the intention to “help familiarize and inform sport professionals and policymakers about key variables that may influence collaborative innovation opportunities... [and] be able to better evaluate construction adoption opportunities, ask informed questions, and make educated decisions” (p. 79). However, Hong et al. might perhaps have made a better case utilizing the mimetic and coercive isomorphic forces of institutional theory as they spend much of the article focusing on how sporting teams and cities react in relation to other teams and cities that build new stadiums, rather than identifying the primary elements and characteristics identified by Rogers (2003).

More recently, English (2016) applied a framework derived from the diffusion of innovation theory with respect to the incorporation of social media tools such as Twitter in sports journalism, noting that the theory has become a “popular and valuable research method in the communication field” (p.486). The study indicated that the new communication channel of Twitter caused “alterations in the roles and routines of journalists” and led to “changes to traditional news gathering and publishing techniques in sports” which resulted in a change to the social system. Accordingly,

the authors concluded that Twitter adoption could provide significant benefits for individuals and organizations within the sport journalism industry – and conversely that Twitter adoption laggards ran the risk of negative consequences to their business, the longer that they held off from adopting this innovation.

Application of Diffusion of Innovation Theory in Environmentally Sustainable Sport

Only in recent years have a number of researchers begun to focus on the application of frameworks associated with the diffusion of innovation theory to the blended disciplines of sport and environmental sustainability (Kapoor, Dwivedi & Williams, 2014; Kellison & Hong, 2015; McCullough et al., 2015).

McCullough et al. (2015) utilized the diffusion of innovation theory to highlight the “evolution of the interplay between the environment and sport” and conceptualized it “using a series of waves as a typology to understand the environmental movement with the sport industry” (p. 18). According to their research, although organizations will exhibit variance of action, the collective activities within the framework of green waves will result in the emergence of diffused elements of awareness and knowledge, resulting from the symbiotic relationships with representatives of governing bodies, leagues and activist third-party stakeholders who wish to see environmental actions taken at organization levels.

McCullough et al. (2015) continued by emphasizing that the broad contextual variables observed in the environmental conditions of the innovation – for example social and economic aspects – play equally valuable roles as they moderate how any of the main elements of diffusion are enacted. The adoption or rejection decision is made more complex as some environmental activities have “immediate and visible impacts (e.g. changing chemicals for natural materials), while others

are not as visible (e.g. energy savings) or immediate-term oriented (e.g. solar panel energy generation)” (p. 7).

Kellison and Hong’s (2015) research into the adoption and diffusion of pro-environmental stadium designs provided important and meaningful context to this researcher’s investigation into the perceptions and procedures concerning the implementation of ES practices at SCSFs. The purpose of their investigation was to “identify the unique factors that are contributing to the widespread adoption, and subsequent diffusion, of this pro-environmental innovation” in professional stadiums and “to gain insight into the key influencers involved in the decision to incorporate eco-friendly features into the design of a new or renovated sport facility.”

As Kellison and Hong developed a qualitative research design to examine innovation adoption and diffusion of sustainable sport facility design at the professional stadium level, I deemed it appropriate also to adopt a similar research design focused on SCSFs. Although the primary incentives that Kellison and Hong identified were that professional stadium owners chose to adopt sustainable designs due to economic savings over the life of the facility, perception-management opportunities, and demonstration of their innovativeness, I had doubts that the same findings would be revealed by research into SCSF motivations.

In addition, inspired by Kellison and Hong (2015), I also chose to present my findings through verbatims wherever possible, thereby “allowing readers to experience the participants actual language, dialect, and personal meanings” (p.256).

Chapter 3: Methodology

The purpose of this research was to develop a deeper understanding of SCSF managers' perceptions of ES practices and policies in the maintenance and operation of their facilities. Although some research has been conducted on this topic at the professional and elite university-level, examination of this topic as applied to the SCSF was nearly non-existent.

In this section, I attempt to provide a clear overview of the design of the study, from its epistemological anchoring, methodological basis and framework, method, as well as a pilot study, the procedure, analysis and participants selected to be a part of the study.

Design of the Study

As the stated purpose of this research is to understand of the SCSF managers' perceptions and experiences, a qualitative design approach best serves this purpose. Qualitative research focuses on "understanding how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences" (Merriam & Tisdell, 2016, p.43-44). Furthermore, qualitative research is "concerned with the social aspects of our world and seeks to answer questions about: why people behave the way they do, how opinions and attitudes are formed [and] how people are affected by the events that go on around them" (Grenier, 2016, p.8).

Thus, in order to delve into the ES perceptions of these SCSF managers, a qualitative structure was applied to the design of this research study, so as to provide the best opportunity to reveal the underlying factors and motivations for the implementation (or lack thereof) of ES policies and procedures at their facilities.

Social constructivism functions as the philosophical and epistemological architecture behind qualitative research. At its heart, social constructivism emphasizes the collaborative nature of the development of scientific knowledge, and that at its base, it is socially determined (Detel, 2001). Thus, in seeking to understand the perceptions and motivations behind the level of adoption of ES by these SCSF managers, it was important to view the analysis with the understanding that they have developed subjective interpretations of their experiences with ES and roles as facility managers – and that everything that has shaped their perceptions has been socially constructed. A variety of influences could have been driving the SCSF managers' underlying motivations – personal opinion, institutional pressure, environmental expectations from the predominate social climate in America – and these have been formed and communicated through social interaction as cultural norms concerning environmentalism have developed over time.

Thus, the research questions – concerning (1) the level of importance of ES implementation to SCSF managers, (2) what they identify as barriers or impediments that prevent a greater degree of implementation of such policies at SCSFs, and (3) the balance of perceived social value and potential economic benefits in their decision-making processes – have been developed with an intention of being viewed through a social constructivist prism.

Methodology and Framework

There are a number of methodological approaches that can be applied to qualitative research, such as phenomenology, critical theory, grounded theory, narrative inquiry, and more (Merriam & Tisdell, 2016). However, I was not seeking to derive the essence of a particular phenomenon, disrupt or challenge an existing structure or to develop a new theory to explain the nature of application of environmental sustainability by these SCSF managers. Therefore, a basic interpretive methodology

was selected as the appropriate choice for this study as the primary goal was to be able to describe, interpret and understand the perspectives of these SCSF managers.

Method

The primary method of data collection for this research project was a series of semi-structured interviews with a purposeful, criterion-based convenience sample of seven participants who were the operational managers of public and privately owned indoor sport facilities in communities with populations less than 25,000 in the New England region of the United States. A limited amount of additional data was collected through the observations of the physical infrastructure on site in the form of field notes, as well through the collection of any documentation pertaining to the management at the facility that existed, either online or in printed pamphlets.

Pilot Study

A pilot study of the conceptual delivery of this research project was conducted as a Field Project Assignment of the University of Connecticut Fall 2015 course “EDCI 6000: Qualitative Methods of Educational Research”. Conducting the Field Project Assignment provided me with the opportunity to complete a first draft on the research design, subjectivity statement, data collection and transcription process as a first step in preparing to deliver a qualitative research project that met the strict academic standards demanded by the discipline.

In addition, the project allowed me to streamline the interview protocol and hone my interviewing skills without the risk of negatively impacting the overall study, while also gaining valuable feedback that facilitated tangible adaptations to the protocol design before re-drafting and submitting to the University of Connecticut’s Institutional Research Board (IRB) for approval. For

example, the pilot study helped me identify the ideal theoretical framework for this study, as I was able to investigate several other potential theoretical frameworks (such as institutional theory) to see what would have the best fit. In addition, I was able to eliminate questions from the interview protocol that yielded answers that were not rich in detail or information (e.g. questions with yes/no answers) and I learned how not to lead respondents towards answers I was interested in, but rather let them express their opinions without influence.

Participants

The final participants were selected from a purposeful, criterion-based convenience sample of 17 operational managers of public and privately owned indoor sport facilities in communities with populations less than 25,000 in the New England region of the United States. This initial number of potential participants was chosen as a convenience factor because only a limited number of small communities that had sporting facilities appropriate for the study were within an achievable driving distance from the University of Connecticut or my home in Maine. Of the 17 potential participants, I set a goal of between six to eight final participants in order to achieve the necessary data saturation, as it was expected that enough rich data would be collected from this number of interviews for an effective qualitative analysis of the perceptions and practices of SCSF managers in the region.

Out of the 17 potential participants who were invited, ten participants responded, but only seven were able to accept the invitation to participate in the study, due to logistical or personal matters. None of the participants recruited to be involved in the study were known to me in advance of the study. The participants were initially identified through public website searches of SCSF information online and were initially contact by me via an e-mail that outlined the purpose of the

study and asked them if they would be interested in participating. Follow up e-mails and phone calls were made in order to confirm the most convenient time/location for the interview to take place.

Common Participant Responsibilities

- Responsible for day-to-day operations of entire facility (e.g. staffing, budgeting, programming, operational policies, etc.);
- Responsible for sport features within facility (e.g. if building is shared with other municipal departments);
- Organizer of sport programming at facility (e.g. adult programs, youth programs, public/private programs);
- Manager of full and/or part-time staff or volunteers at facility (e.g. hiring, role assignment, leadership, motivation, guidance, etc.);
- Influence on capital improvement projects (together with direct supervisor, operations committee or executive board);
- Influence on purchasing of materials/maintenance products (e.g. they either sign procurement orders or request products for purchase through other departments);
- Manages third-party contractors who work on/at facility (e.g. cleaning staff, maintenance contractors, tenants, etc.).

Biographies and Facility Snapshots

(Pseudonyms have been assigned to the people, and the city/universities mentioned in this section have been left nameless to protect the confidentiality of each of the respective participants.)

Name	Sex	Education	ES Training	Role Title	Facility Type	Facility Age	Type
Kathleen	F	Sport Management Degree	None	Recreation Supervisor	Repurposed School	40+ years	Municipal
Margie	F	Sport Management Degree	None	Recreation Superintendent	Repurposed School	20-40 years	Municipal
Barbara	F	Sport Management Degree	Some, through Conferences	Director of Parks and Recreation	Purpose Built	10-20 years	Public-Private Partnership
Richard	M	Sport Management Degree	Significant - Part of Degree	Director of Parks and Recreation	Purpose Built	40+ years	Municipal
Steven	M	Communications Degree	None	Deputy Director of Parks and Recreation	Repurposed School	20-40 years	Municipal
Henry	M	Sport Management Degree	None	General Manager	Repurposed other building	10-20 years	Municipal
Diane	F	Anthropology Degree	None	Director of Recreation Center	Repurposed other building	10-20 years	Non-Profit

Respondent 1 – Kathleen

Kathleen was a thirty-year veteran of her town parks and recreation program, having first joined in 1986 after she graduated from a nearby state college with a degree in therapeutic recreation. After initially be hired to develop therapeutic recreation programming for the community, she was promoted to manage all sport-related programming for her municipality and eventually took

over the management of all aspects of the town's community center, functioning in her current role as the deputy to the director of the parks and recreation program.

Kathleen worked in a small, cramped office, which was filled to the brim with papers, files and books that overflowed across her desk and shelves. The office walls could hardly be seen as they were covered with pictures and various documents, including a large, framed photo of her two children on the beach, as well as a diploma from her university's sports and leisure program – both of which she spoke affectionately about. She gave off a supportive, motherly vibe, alternatively speaking firmly and gently to various staff and community members who poked their heads into her office while the interview was taking place.

The facility was a single story, wing-shaped former elementary school that was built in the 1950s and converted into a community center in 1978. The structure was made up of two long halls that intersected right by at Kathleen's office, with one wing (carpeted) that provided the public services (e.g. the gymnasium, fitness room and banquet hall) and the other hosting various administrative offices for the community. As I passed through the entrance, a flock of silver-haired community members could be seen walking up and down the gymnasium floor, getting their daily exercise on a chilly winter's day, though the adjacent fitness room looked dark and forlorn through its locked door, with a limited amount of exercise equipment and free weights sprinkled about the room, quiet and motionless, giving off an air of disuse.

Respondent 2 – Margie

Margie was a bright and energetic woman in her 50s, proud of her "home-town" roots and the success of her small-town community center, claiming that they had more than 15,000 people utilize their sport facilities in the last calendar year, despite the fact that the municipality's

population topped out at just less than 20,000 people, according to the 2010 census. Currently functioning as the Superintendent of Recreation, Margie joined the municipality's parks and recreation department as an assistant 20 years ago, after working the previous eight years in a similar capacity in a town a little less than an hour south of her hometown. Graduating from a state college with a degree in recreation, she began her career with an internship in the parks and recreation department of the state's capital, before moving to her first position, and eventually jumping at the opportunity to work for the parks and recreation department of her hometown.

The community center she manages was set back in a charming wooded area that was surrounded by all of the primary town facilities, such as the town hall, police department and community library. The building was approximately 25 years old and featured an attractive brick façade, as well as clean, bright and well-lit hallways with cheerful yellow features within the interior alcove. Nonetheless, the facility was in a state of disrepair when I arrived for the interview as a pipe had recently burst on the floor above, causing significant water damage all through the ceiling of the administrative offices, so Margie and her departmental colleagues were temporarily working out of a smaller, undamaged room down the hall. Much to her relief, the fitness room and sport equipment was not affected by the water damage, and the facility continued its normal rhythms of activity while repairs were being made to the administrative areas.

Respondent 3 – Barbara

Barbara exuded a folksy charm, modesty and glowing affection for the outdoors, physical activity and community service, as well as an undercurrent of a somewhat restrained competitive nature – all of which must have served her well in her former capacity as a president of her state

recreation association and role as an occasional spokeswoman for the conservation of natural resources during occasional visits to Capital Hill lawmakers in Washington, D.C.

As the director of parks and recreation in this small, wooded area of her state, her municipality benefitted from her more than 40 years of experience in the industry, spanning from recreation and programming, to forest service ecology and ski patrol, as well as community sport facility design. Having created one of the first interdisciplinary recreation degrees at her university, Barbara spent 16 years in her first parks and recreation role, helping to promote, finance, design and operate a community sport facility that has become known as one of the standard-bearers of community sport facility design in her state. Now, 16 years into her second municipal parks and recreation department role, Barbara is admired and recognized as an inspiring leader in the parks and recreation community of her state, though still maintains an easy, friendly and humble demeanor in service to her community.

The community sport facility she manages was the result of a unique public-private partnership with a local academy that needed municipal support in developing the concept of a center of excellence in sporting activities in the community. Cooperatively designed and purpose-built in 2000, the combination of traditional and unique, modern sport and exercise facilities made for an interesting juxtaposition within the large and spacious warehouse-like building that is nestled into a cozy cove of woods in this small, but lively town.

Respondent 4 – Richard

Richard cut a bit of an unusual figure within the community of parks and recreation directors, particularly due to his young age – late 20s – particularly in comparison to the other participants in this study. In addition, he was the only participant to have a dual degree in Parks, Recreation and

Tourism as well as Environmental Management and Policy, from a local state institution. His predecessor and mentor had recently retired after 36 years in the position, giving Richard a unique opportunity to take over the department after working for only five years as his assistant.

Upon entering his office – just inside the entrance of the community center – one was struck by the relaxed atmosphere of the tight, red-brick quarters he shared with his assistant (who appeared to be roughly the same age as Richard), which at the moment was littered with colorful plastic Easter egg shells – props with prizes that he and his department were planning on hiding throughout the parks in the city to promote the facilities and activities available to the community. Upon learning my background associated with soccer, and his assistant also took the opportunity to show me a YouTube video of impressive stunts that they had performed with a futsal ball, a demonstration of their youthful exuberance in managing the parks and recreation department of this small, but progressive town.

Richard's facility was a bit of a rarity, a purpose-built community sport center dating back to the 1940s. Originally housing other municipal departments as well, the building was now totally dedicated to the parks and recreation department, though some areas – such as the first-floor meeting rooms below the basketball court where the interview took place – often went unused because of poor spatial planning... the reason of which I learned well as the incessant thud of basketball and feet above our heads made it occasionally difficult to hear each other, let alone concentrate on the task of interviewing this respondent for the study.

Respondent 5 – Steven

Steven, the deputy director of his hometown municipal parks and recreation department, was in his mid-40s, experiencing a revival in what could be considered as his third career. A

communications major from a local state college, Steven initially worked in the public relations department of a semi-pro hockey team, a position that he parlayed into a short stint with an NHL team in the same role. Afterwards, Steven worked for several years in the marketing of a fast food chain, up and down the eastern seaboard – a job that paid the bills but saw him constantly on the road. Upon hearing about an opportunity within his hometown parks and recreation department, he left it all behind him and started anew, helping the director of parks and recreation conceive of and deliver the renovation and re-development of a local middle school into a multi-sport community center.

After almost two years of seeking financial support, establishing partnerships with local organizations, recruiting vendors and conducting interior infrastructure renovations, the large, wing-shaped community center opened its doors with an unusual array of sport facilities ranging from a basketball court to a Pilates fitness center, and from a batting cage to an indoor swimming pool. Although the labyrinth of halls still bear the heavy wear of former students' feet on the worn floor tiles, Steven says the facility's condition is night and day compared to the mess it was four years ago, when he first arrived – and he proudly points out that not a single taxpayer's dollar has been used in the re-development of the facility.

Respondent 6 – Henry

Henry is the general manager of a municipally owned and developed artificial turf facility, which has quickly become the darling of the local community. With a university degree in Sport Management, this thirty-something parks and recreation employee had the longest tenure (five years) within the town's parks and recreation department, as it has recently experienced a complete overhaul of staff and organization in the last six months.

Henry was born and raised in the woods of a tiny New England community, went to college in a small town and now half-heartedly laments living in “the big city”, comparatively speaking, as his current town features just over 15,000 residents, according to the US Census of 2010. After graduating from college, he built up his recreation management experience by working at a YMCA, as well as another privately owned artificial turf facility in the state, before joining up with his current employer.

The indoor artificial turf facility he manages was hidden at the back of a municipal park, down a steep embankment flanked by baseball and softball diamonds, which were still wet and muddy with yellowy-sour colored grass, recently revealed again following the winter melt. A bumpy, potholed road lead to the back end of the park, where suddenly a spacious parking lot materializes in front of a 60s-era brick building, which hosts the town’s parks and recreation department. Looming above the squat, brick building, is the large metal façade of the turf complex, its orange and grey exterior gleaming in the back of the sunken park – almost like a jewel at the end of the craggy road.

Although the building has been around for decades, the indoor turf facility has only had six months of operations since the grand re-opening of the venue. A former hockey rink-turned storage unit, the new turf facility operates as the town’s only enterprise funded facility, and has achieved maximum usage within months of being open – along the way spurring the development of a number of community sport leagues, such as soccer, lacrosse, field hockey and more.

Respondent 7 – Diane

Diane is the director of a religiously affiliated, non-profit community sports center in a small town in her state. She grew up in New England with close ties to her neighborhood religiously-

affiliated community sports center, went to college and played as a Division III field hockey athlete, acquiring an anthropology undergraduate degree and a masters degree in social work. Upon graduation, she worked at several non-profit organizations in New England before settling on her current non-profit organization, with whom she has been employed for 10 years now.

In recent years, the religiously affiliated, non-profit organization that she works for sought out and purchased a failed sport and fitness center in a small town to function as sort of a satellite version of their facility in the state's capital. Diane was a part of the team responsible for research in the community to see if such a facility would be viable, as well as developing ideas for programs and activities to be managed through there. She was responsible for procuring all of the equipment and setting up the venue, and was eventually appointed to run the facility on behalf of the religiously affiliated, non-profit organization that owned it.

Procedure and Analysis

I conducted all of the interviews and asked the participants a series of questions during 30 to 45 minute interviews, designed to elicit details of their understanding and application of ES procedures in the operational management of their respective SCSF. I enquired about the participants' background and exposure to and understanding of ES in general, how and to what extent they had implemented ES practices in the management of their facility, what challenges they had faced in application of those practices, as well as what kind of ES-related training they had had (if any).

The interviews were recorded and then I subsequently transcribed, analyzed and interpreted the data. A limited amount of triangulation of data was attempted through the observation and

analysis of the state of ES of the respective facility, as well through the collection of documents pertaining to the management at the facility that existed in printed pamphlets or online resources.

In the analysis phase, I applied a basic interpretive methodology, as the primary goal was to be able to describe, interpret and understand the ES perspectives of these SCSF managers. I sought to construct an understanding through the analysis of the rich data collected from the interviews and observations. In particular, I focused on how these SCSF managers had built their own experiences and what meaning they had attributed to concepts related to ES in their professional and personal lives.

Merriam and Tisdell (2016) point out that “an important characteristic of qualitative research is that the process is inductive; that is, researchers gather data to build concepts, hypotheses, or theories rather than deductively testing hypotheses as in positivist research” (p. 68). They elaborate by noting that theory is built through observation and analysis of “bits and pieces of information from interviews, observations, or documents” (p.68).

Accordingly, the analysis of the data focused on the identification of recurring patterns in the data through open coding with the intention of maintaining “a dialectic in which [the researchers] move between seeing the big picture (the ‘forest’) and the particulars (the ‘trees’)” (Merriam & Tisdell, 2016, p. 473). I utilized an online qualitative research software platform (Dedoose 7.0.21) to help streamline and organize the initial open coding process, which yielded 128 individual codes.

As data coding is an iterative process, I coded and re-coded the respondents’ transcribed data a number of times. Informal coding began during the transcription of the first respondent’s recorded interview. I transcribed all of the respondents’ recorded interviews in chronological order and began to take mental notes of similar themes addressed in an attempt to identify recurring patterns amongst

the data. However, I did not utilize Dedoose to organize the formal open coding process until all of the recorded interviews had been transcribed.

Using Dedoose, I started by initially coding the transcriptions in chronological order. However, as more and more codes were identified, I returned to the respondents' transcriptions in various orders as I remembered an associated idea that was reflected in previously coded material. At the beginning of the process, I tended to code whole sentences or even groups of sentences. As my grasp of the material and features of Dedoose increased with experience, my coding tended to become more efficient and I began to capture only individual words or small phrases as codes instead. Once I was convinced that the majority of the codes had been identified, I did one final pass through all respondents' transcriptions to make sure that I had captured any quotes relevant to the research questions.

Subsequently, I manually grouped together the codes identified through the process of axial coding, which Richards (2015) defines as "coding that comes from interpretation and reflection on meaning" (p.135). I read and re-read through my list of codes and began to match related ideas and concepts together into progressively smaller groups. I considered how they might be logically ordered so that when applied to the framework based on the diffusion of innovation theory, a sensible series of outputs might be developed. I re-organized several ideas and concepts to different theme areas as I ventured through the process, until I was satisfied that I had consistent and sensible groupings of data.

As a result of the axial coding process, the 128 individual codes were divided into more than 40 groups of related ideas, subsequently subdivided into 12 sub-categories and then organized into four primary themes, which were then applied to the framework of the diffusion of innovation theory

in an effort to assist in the description, interpretation and understanding of the perspectives of these SCSF managers. However, it should be noted that due to time constraints and as the sole investigator managing this project, no other researcher nor participant was involved nor reviewed the coding process, theme development or framework analysis of the data.

Initially, my thesis advisor suggested I consider institutional theory as a potential framework and provided me with an article that referenced sport, environmental sustainability and institutional theory (McCullough & Cunningham, 2010). As my research expanded from that document, I found a more recent article written by one of the same authors (McCullough et al., 2015) that helped guide me toward my eventual framework selection. The research by McCullough et al. (2015) stated that initial research into the emergence of environmental sustainability in sport in general focused on frameworks that used institutional theory. Hillebrand, Nijholt, & Nijssen (2011) reference Meyer and Rowan's (1977) explanation of institutional theory by positing that "the social context in which firms operate influences the behavior in and of organizations, leading firms in an industry to adopt similar structures and practices" (p.592). Hillebrand, et al. (2011) further suggested that institutional theorists emphasize "the role of social processes, norms and expectations in explaining firm behavior" (p.592), indicating that institutional theory could potentially shed some light on this project's research questions. However, institutional theory's focus on the behavior of firms seemed incongruent with the operation of SCSFs, so I continued to consider alternate theoretical frameworks to help better understand the data.

McCullough et al. (2015) also suggest that other frameworks should be considered as "the conversation about sport and the natural environment cuts to the core of sport operations and planning... [and] there are a variety of issues in play that can be examined from an equal number of

analytical lenses” (p.5). Accordingly, as the primary alternative framework McCullough et al. (2015) utilized in their research was based on the diffusion of innovation theory, I began to explore the potential of this theory as framework for my research. When I came across Kellison and Hong’s (2015) diffusion of innovation theory-based framework investigating environmentally sustainable infrastructure in professional stadium development, the value of that framework began to crystalize as an effective strategy to examine SCSFs.

Kellison and Hong’s (2015) research also provided the foundational definition of innovation applicable to this qualitative study exploring the perceptions and procedures concerning the implementation of environmentally sustainable practices at SCSFs: “Within the context of sustainable design (i.e., the innovation), a decision-maker’s agreement to incorporate pro-environmental features into a facility represents innovation adoption” (p. 250-251), while the spread of adopters amongst SCSFs throughout the industry signified diffusion. Accordingly, the data analysis procedure provided a unique view of the SCSF managers’ perceptions of ES, particularly when viewed through the prism of the five extended elements of Rogers’ diffusion of innovation theory: (1) innovation, (2) time, (3) the social system, (4) the channels of communication, and (5) the adopter’s decision-making process, which are subsequently addressed in the Chapter Five: Discussion.

Trustworthiness

There are a number of methodological strategies to support the elements of trustworthiness of qualitative research: credibility (confidence in the researcher), truth value (data resilience through triangulation, member checks and peer review), comparability (through transferability of findings or utilization of an audit trail) and consistency (through reproduction or maximum variance within data

sources) (Guba & Lincoln, 1982; Merriam & Tisdell, 2016; Shenton, 2004). To the greatest extent possible, each of the above elements have been applied to the research process. Any strategies for enhancing trustworthiness that fell short of the expectations in the application of this research study are addressed in the limitations section of Chapter Five.

Shenton (2004) indicated that a key criterion for establishing credibility is the extent to which the “researcher admits his or her own predispositions” (p. 65), in particular if they acknowledge the potential impact of the investigator’s experience on the data. One of the primary strategies for achieving a level of credibility is the extent to which one brackets oneself and outlines one’s potential biases through a subjectivity statement. Accordingly, the following subjectivity statement has been presented in order to identify my association and experiences related to the topic of my research, and in particular the potential for any implicit or explicit biases that I might have brought in to the interview and data analysis process. Its intention was to frame the way that my views, interpretations and personal opinions were reflected in this body of research, so that the reader shall be better equipped to critically examine the content, conclusions and lens through which this research project has been viewed and implemented.

I am a 43-year old white male who hails from an upper-middle class suburban neighborhood in California where access to progressively managed and well-maintained community sporting facilities was as easy as strolling a few blocks from my house. I now live in a small, rural community of 4,000 people in central Maine, which lacks even the basic infrastructure of any indoor community sporting facilities, such as a multi-sport gymnasium, meeting rooms or changing rooms. All recreation activities there take place in either outdoor parks or in local school facilities, outside of normal school operational hours.

My experiences as a youth were framed by participation in multiple sports and my impression was that the communities in which I play always took above average care of the sport facilities, dedicated adequate financial resources and upgraded facilities on a regular basis. In short, they were not elite-level facilities, but they were always in good condition and never fell too far behind trends in sport and sport infrastructure.

I entered the sport industry as a volunteer to the FIFA Women's World Cup in 1999 and quickly transitioned to a full-time professional role following that event. Through 15 years of industry experience, I have developed expertise in international sport governance, operations, communications, facility development and event management through the organization of more than 20 elite international sporting events, including multiple FIFA World Cups and Olympic Games.

As the primary areas of focus for me as a professional were the planning, development, construction and operational management of sporting facilities in dozens of countries spanning five continents, I have a unique perspective on the needs, motivations and financial resources necessary for establishing a new or renovating existing sporting facilities. However, the primary objective for developing such facilities in my role as a Senior Competition Manager for FIFA, the world's governing body for soccer, was to prepare the respective facilities and organizational plans for a specific short-term event, rather than for the long-term viability and operation of the facility in the respective community or country. This is not to say that we did not encourage the local ownership and management groups to view the facility as a legacy project with sustainable usage management in mind, but as FIFA would move on to the next event taking place the next year, there was no significant post-event planning organized by FIFA nor follow up on how facilities were managed

and operated. In short, the implementation of any long-term goals was distinctly the responsibility of the local ownership or management group.

After parlaying my industry experience into a budding career in sport management education where I currently function as a Graduate Assistant within the University of Connecticut's Sport Management Program, environmentally sustainable practices in sport facility and event management became elevated to my primary area of academic interest through a series of classes within the program.

Since the first LEED certification was awarded to a sporting facility in 2010, there has been a growing trend at universities, with professional teams and at international governing bodies to acquire LEED certifications. To understand this process in greater detail, I successfully studied for and passed the entry-level professional certification and became a LEED Green Associate in March of 2016. This certification required sitting for an exam (similar to the GREs) to establish one's professional qualifications and demonstrates an industry-recognized level of depth of training in environmentally sustainable facility management.

As I am unsure of whether I will remain in academia or return to work full time in the sport industry following the conclusion of my degree, I wanted to ensure that any research activities I pursue would have validity both as a scholar or practitioner of sport management.

Chapter 4: Results

The rich qualitative interview data collected through interviews with these seven participants and the subsequent analysis process utilizing the diffusion of innovation theory as a guide have revealed a number of illuminating details concerning the perceptions of SCSF managers in the New England region. In this section, I will provide an overview and explanation of the four thematic areas identified in the axial coding process, in an effort to assist in the description, interpretation and understanding of the perspectives of these SCSF managers.

Themes

The four themes revealed as a result of the analysis process – (1) *Perception of ES*, (2) *Barriers: Preventing ES*, (3), *Assistance: Contributing to ES* and (4) *Implementation* – as well as their associated sub-categories have been summarized below in Table 1.

Table 1. Themes and Sub-Categories

Themes	Sub-Categories
Perception of ES	Common Sense ES and indoor facilities Priority of Environmental Sustainability
Barriers: Preventing ES	Individual Factors Organizational Factors Perceptual Factors
Assistance: Contributing to ES	Personal Networks SCSF Organizational Advantages Change Agents
Implementation	Inspiration Pre-emptive Needs Decision-making

Theme I: Perception of ES

The first theme that emerged from the data analysis was that the perceptions of what actually constituted ES in the SCSF managers' minds was relatively muddy. As a reflection of this, there was a lack of clarity in initial expectations associated with the connection of ES and indoor physical infrastructure. In addition, the participants mostly fell into the same group with respect to what kind of priority ES was given within the participants' personal and professional lives.

Weak Ability to Articulate ES

Near the beginning of the interviews, each participant was asked to either to tell me what the terms "environmental sustainability" meant, or just share what words, concepts and ideas they associated with the two terms. As addressed in Section 2: Literature Review, there are many perceptions of sustainable development – alternatively referred to as environmental sustainability (ES) – but for the purposes of this research paper, the definition of ES was identified as the maintenance of natural capital in such a way that provides for the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs (UN, 1987; Goodson, 1995). Accordingly, given the prevailing social views of ES, as the participants of this study were all responsible for the operational organization of their respective facility, including the management of human and financial resources that were applied to it, it could have been expected that their perceptions of ES would potentially have had reflections of the three-dimensional "Triple Bottom Line" construct as described by Janeiro and Patel (2014) – where environmental, social and economic aspects are all taken into account.

However, the participants' ability to articulate what actually constituted ES was generally on the weak side. Although I would not have expected any of the participants to provide detailed

definitions or explanations of the application of ES off the top of their heads, surprisingly, most participants appeared to be somewhat uncomfortable attempting to define it, and several struggled to verbalize anything more than a few general comments such as “green”, “friendly” or “clean”. Several respondents simply explained it as “common sense”.

Trying to stay as green as we can, you know – recycle, as much paperless items as we can, you know, the recycling of all of that. [...] It’s like common sense type stuff – you know, staying friendly, don’t waste paper, don’t... you know, constantly run water, to me – common sense stuff (Henry).

Well, environmental – usually, because of my previous experience in education stuff – is like outdoors environmental consciousness of, you know, being green and things. [...] Environmental responsibility, you know, just being responsible as an organization, as a person... you know [...] more friendly – earth friendly, things like that (Richard).

Only Barbara’s comments on her general perception of ES reflected all three dimensions of Janeiro and Patel’s construct (2014) – environmental, social and economic. To explain her perception, she utilized an example of a project she was currently involved in.

[I am] helping the town to build sustainable trails, forever long-lasting trails that make a difference, that will be easy to take care of, that won’t cost us a lot of money long term, also energy efficient-wise on the rider, also energy efficient in the trail construction and the materials that we use, as well as everything we use for surface materials, all the way along is sustaining the trail corridor to make sure we are utilizing that to the best of our methods (Barbara).

Perceptual Confusion: the Application of ES Indoors?

Despite the wide array of how the respondents perceived ES in general, there was one area in which they were mostly unified: in their view, ES applies primarily to the outdoor arena. At the conclusion of the interviews, five of the seven respondents expressed a sense of confusion that had been nagging at them since I first reached out to them via e-mail – I wanted to speak about ES and... their indoor sport facilities? Although in the invitation to participate I had expressly stated that I was

interested in hearing their “thoughts on the challenges/successes that the [indoor sport facility name] has faced when considering the implementation of environmentally sustainable policies”, almost all of the interviews ended with them telling me they expected me to talk about ES as it applies to their outdoor recreational areas. This was despite the fact that we had been speaking almost exclusively regarding the indoors for the duration of the interviews.

Margie expressed her confusion by saying “when I first read the description of what you sent, I was thinking more ‘field stuff’ because there’s always that big... there’s always that discussion about pesticides, what can and can’t be used on school grounds and on our other facilities.” Richard told me “I thought you were probably going to be asking me have you looked at your mower fleet – to, you know, make sure that those are, like, propane ones are really big now because they’re a lot more environmentally friendly than like gas or diesel ones or different things like that.”

Henry concurred by explaining that “you can only do so much inside. The recreation fields definitely a lot bigger on environmental side of things.” “It’s quite often on a ‘parks’ side,” said Kathleen, “so its ‘exterior sustainability’, because you can’t use pesticides on things at a school, so natural ways to do that. Docks, waterways, you know, beachfronts, you see a lot more of that as opposed to the building side of it.”

Personal/Professional Priority of ES

For the most part, the SCSF managers who participated in the study seemed to acknowledge that ES held a rather low priority in the management of their facilities, although that was mostly in contrast to their personal lives. Kathleen, for example, claimed that ES activities (e.g. recycling, energy conservation, water management, composting etc.) were a “personal passion”, but at the facility she manages, it was almost a joke as to how low a priority ES was in her organization as a

result of the financial implications, “(laughing:) it’s funny because it’s a high priority if it doesn’t cost anything.”

Similarly, Henry noted that at his facility he only does “the basics – recycling, make sure the climate is comfortable, [...] not going above and beyond at this point.” This was despite the fact that he seemed to indicate that ES principles were bred in to him as a result of his rural upbringing: “I’ve lived in the woods my entire life... it might be the culture that I came from,” and that ES’ priority for him was “definitely toward the top”.

Not all of the participants held ES particularly high in priority in their personal lives. Diane stated as a matter of fact that “I don’t think I prioritize it personally, ” and that in her facility they didn’t take it particularly seriously. “Um, you know, we recycle (laughing) and turn off the water while we’re brushing our teeth and things like that, and we tell the kids to turn off the lights when we leave the room and all that kind of stuff,” she said. Nonetheless, she clarified the point by saying “I don’t think we go above and beyond to do anything that is environmentally helpful or sustainable or anything like that.”

In fact, it was one of Diane’s closing comments that captured the generally low priority level that these SCSF managers hold ES with respect to their facilities: “It’s not like on the top of minds. It comes up here and there, but it’s not like a thread that goes throughout.”

Theme II: Barriers – Preventing ES

The second theme that appeared was concerned with the various factors that had the effect of restricting or preventing the development of ES practices or procedures within the management of

their SCSFs. There were individual, organizational and perceptual factors that all had varying levels of power in reducing the potential for the implementation of ES practices within their facilities.

Individual Barriers

One of the most evident barriers was the relative dearth of education and training related to ES in general that the respondents had, let alone as to its potential application within a physical building structure. Although most of the respondents had either a sport management or recreation-focused university education and acknowledged how important the environment was to their industry, the lack of ideas for the potential practical application of ES was evident. When asked about what areas of the facility they managed that had potential for ES application, most of the respondents struggled to verbalize its application and replied in weak generalities regarding efficient light bulbs or heating systems, without indicating much substance as to what that actually meant. “A co-generation process”, answered Diane when asked about what could apply to her facility, “(laughing:) is that something?”

This was not surprising considering that most of the respondents had difficulty verbalizing what ES was in general, but the data suggest that the issue was compounded by the fact that most participants hadn’t had any background education or training in actually running and maintaining physical infrastructure either. It was almost like it was perceived as a joke that someone like Steven – who had a Communications background – had somehow ended up managing a facility without any training. When asked if he had any experience before taking on the facility role, Steven answered “No, (laughing:) just purely marketing, basically.”

Even those who had facility management courses as a part of their education, such as Henry, seemed to downplay the value and applicability of that training for doing their job. “I think this is one of the few professions you need to experience it to understand it,” he said.

Similar to the first theme, Barbara was the exception to the group, making detailed references to health-focused air exchange systems, sustainable material procurement processes, the value of updating lighting systems, as well as having “meetings in the boiler room, talking about how a pellet system would apply to what we’ve got here.” She was the only one who specifically noted that she has participated in various classes and training sessions concerning ES, although they were relatively infrequent.

I would say over a period of time, attending my national recreation conferences, yeah, I’ve been to classes in sustainability, I’ve taken a few classes online on sustainability and we have our local [state name] rec and park conference. [As a result,] I call myself, I’m like the drillmaster of energy and lights, I follow people around (smiling). And the same thing with the heat. You know, there’re locking mechanisms on the heating systems for a reason (laughing) (Barbara).

Other than education and training, the other individual barriers alluded to were time and interest. “Specifically for me and our staff here, it’s a lot of time, and we’re a pretty bare-bones staff,” noted Kathleen.

Organizational Barriers

The organizational barriers to the practical application of ES were the most common thread addressed by the participants – particularly concerning finances and human resources – although the lack of leadership, an abundance of communication layers and other departmental priorities were also cited as factors that restricted the consideration of application of ES within their facilities.

The participants were unanimous in their contention that the availability of finances within their overall budget was the single greatest factor in not pursuing ES activities at their venues.

Kathleen complained that “the town wants to benefit from it, but they don’t want to pay for it. I might be told, ‘That’s a great idea, but unfortunately we don’t have the funds’”.

Everything is budget, everything always comes back to budget [...] it all comes down to cost. So, you know, if it comes down to products made in America or not made in America, or made environmentally or non-environmentally friendly... usually no one wants to look at that, they just want to know how much it costs and that’s what we have to go on (Richard).

Similarly, the lack of human resources was often cited as another significant barrier – the relatively small size of their organizations as compared to the wide set of responsibilities they were expected to carry out pushed consideration of ES activities beyond their reach. “Unfortunately we have a very small department,” said Margie. “Most communities have more than one fulltime person... so it makes for a challenge.” Similarly, Kathleen succinctly described her department’s operations as “multitasking and sharing responsibilities – fewer people, more jobs.”

Kathleen also lamented the lack of leadership in ES above her in the organizational chain. It just doesn’t happen “unless a political figure or someone above my level is pushing for something,” she said. “I can make suggestions sometimes that are taken... quite often, it’s not even worth it.” Richard seconded that notion when he noted that, “I make suggestions, I can encourage it, and fight for it, but it doesn’t necessarily mean it’s going to happen. [...] If I went and said ‘I think we should get some new high efficiency thing because it would be better for the environment’, I would be hung at the town meeting.”

Even if there is leadership support for ES practices, there can often be logistical issues that prevent the process from moving forward very quickly. Margie related a story of the complications of actually beginning recycling even after the town leadership decided it should happen.

It took quite a few years to get the town departments to actually participate in that. [...] There's a lot of logistics, like who's going to collect it – our guys are already stretched so thin. So when they collect it, where do they bring it? (Margie)

Diane commented that the various bureaucratic levels above her somewhat stymie potential ES processes from moving forward, stating that “there's a lot of ‘in-between’ conversations that happen before the final decision happens, and everyone has their own opinions and their own ways of looking at things, so it's a little bit more challenging and can take longer than I might want it to take.”

Barbara captured the general sentiment that reflected a part of the ES priority discussion in Theme one by noting that “there's a lot of other things on people's plates that have higher priority.”

Perceptual Barriers

In addition to actual personal and organizational barriers to the implementation of ES activities, the respondents also brought up a number of perceptual issues that have complicated the matter. These include the perceived high cost of ES-related products and features, the relative lack of ‘visibility’ of ES infrastructure and the perceived age or uniqueness of their facility acting as an impediment to ES improvements.

Outside of resource scarcity, respondents were also unanimous in their perceptions that implementing ES activities were more costly in general, even if in the long run they were more economically efficient. When asked why ES products were not utilized, even if research indicates

they result in decreased cost in the long run, the message was the same: “I would say it is probably the perceived cost,” said Diane. “That anything like environmental is more expensive.” Richard concurred by stating that “the more environmentally friendly it is, the more expensive it usually is for you to do – or it seems like.”

Another problem of the implementation of ES is its lack of visible outcomes for the leadership and community. Steven pointed out that ES infrastructure is made up of “a lot of things that you don’t necessarily see, but ultimately it makes the building more efficient, saves money and saves the taxpayers money.” But the issue, noted Richard, is that people want to see tangible outcomes from their tax dollars and “people care about what is happening to their tax bill right now,” rather than potentially paying less further down the line. He further illustrated the problem, noting that “all it takes is one person to stand up [at a town meeting] and say ‘I don’t think we need this because I don’t want to pay for it’, and then we just don’t get it.”

The respondents also indicated that due to the age and/or uniqueness of their facilities, ES improvements would be difficult or impossible to accomplish. In addition, several respondents felt they just didn’t have anyone in similar enough situations to even seek advice how to proceed. “This facility itself is so unique,” said Henry. “Even, at these conferences that I go to, [if] I have questions, there’s really going to be no one that knows what I’m going through.” Similarly, Steven noted that “there aren’t a lot of community centers that are this size in this area [...], this place is pretty monstrous compared to most. You know, it’s a pretty... it’s unique.”

Many of the respondents lamented the age of the building made investigating ES adaptations extremely difficult, since many of the original buildings were built in the 1940s to 1970s. For

example, one respondent related a story indicating how newer schools that are converted to community centers haven't had the same problems as she has had.

There have been a couple of towns recently that got some bond funding to transform an old school into a community center, so they want to see what we've done. So we had this lovely meeting, and, they like... they were a school as of last year... so they have the energy efficiency, they have the data connectivity... you know, issues that we don't have because this facility was made a community center in 1978 (Kathleen).

Others were more matter-of-fact about the influence of the age of the facility and their expectation that they would never bother attempting any significant ES improvements.

I think the biggest thing with this building... some of that other stuff... its kind of one of those "it is what it is", it's not going to change, it's because the building itself has been here so long, the only way it would change is if we tore it down and we rebuild. And I don't ever (laughing) see that happening here (Henry).

Theme III: Assistance – Contributing to ES

The third theme that emerged from the data was that despite the various barriers, there were also a number of elements that could conceivably positively contribute to the application of ES activities in the future. These assisting factors have been grouped into three different categories: personal networks, SCSF organizational advantages and change agents within their professional circles that could promote the application of ES at their venues.

Personal Networks

Despite the rural life lived by the SCSF managers, the majority of the respondents espoused the benefits of the rich and potentially useful network of resources that they have to help guide them through the overall management of their facilities. One example of this was the natural community of SCSF managers that was either personally connected, or brought together through local, state or national recreation associations.

Everyone is pretty supportive from that end, there's a lot of good ideas that get floated around, all the different buildings collaborate on a lot of different ideas, kind of share what works and what doesn't, so there's quite a bit of communication (Steven).

Mentor/mentee relationships have also developed through these personal networks. For example, Richard, relatively new to his position, spontaneously told me that he sees Barbara as a role model and mentor for him, particularly with respect to her experience and approach to interweaving ES into her daily personal and professional routines. "[Barbara] has been a really big asset to me," he said. "She really gets you excited about stuff, about your profession and career and what you're doing."

Another example was the value of information the SCSF managers received through various publications and trade magazines.

[Trade magazines are beneficial because] you kind of flip through and see the trends and problems and issues that arise and everything. [...] The national one I found to be super beneficial because they have a discussion forum and it get's automatically sent to my e-mail, like with weekly updates on just other managers and directors around the country (Richard).

SCSF Organizational Advantages

In some ways, the relative dearth of financial and human resources also produced a few advantages for SCSF managers. For example, each of the respondents acknowledged that as a result of the small size of their respective organizations, their direct supervisors provided them with a lot of autonomy on what to do and how to set their priorities. Steven noted that "often times [my boss] was like, 'Just do what you think is right', which is awesome, you know?"

As an example, the former school that Steven was helping to re-develop into a community sport center was more than 40 years old and had not had any attention paid to it for years. As a result of limited municipal funds, Steven and his team had to be creative and seek external grants and cooperative vendor and tenant relationships that provided his team with complete autonomy as to how to redevelop the facility due thanks to operating outside of the city budget. “We’ve had tremendous support from the community, you know taxpayers, from the city of themselves, city council – everybody initially was really supportive, probably because they didn’t really know what was going on,” and that they didn’t have to pay for it.

In a similar fashion, the respondents all indicated that in addition to autonomy, their supervisors or executive boards were very receptive to listening to ideas for improving their facilities. Barbara was very straightforward about it – “My boss is very supportive,” and Kathleen agreed, noting that “I’ve never been shot down,” though occasionally ideas were not implemented due to cost factors or other priorities. But nonetheless, their management structures were open and approachable.

I think everyone is very pretty open – we go in with a laundry list every year of what we’d like to see, from the littlest thing all the way to the top – and in the last three or four years everyone has been very good about letting us at least provide that feedback, and a lot of times it happens (Steven).

With the town manager, I can say that he’s usually very receptive, because I usually don’t go in with a dumb reason to do things... it’s usually for a good reason, either the long term benefits, or health benefits, whatever it is cost-wise... but yeah, he’s been pretty receptive to it. [...] If it’s minor things, I think as long as we can justify there’s a lot bigger benefit than there is a cost, then people are ok with it. (Richard).

In addition, the respondents indicated that organizations’ management was acutely aware of the wide breadth of responsibilities they were placing upon their small departments,

and so accordingly had established a culture that promoted professional development opportunities for those employees who were motivated to do so. Margie explained by saying that “the town is supportive of additional training that you may need, especially something that will help you in your job.” Steven supported this notion by highlighting the relationship they had with a local university, noting that “we have a good partnership with [the university] for continuing education, all the way from workshops and seminars, all through getting your MBA.”

Change Agents

As a part of the interview, respondents were asked about some examples of ES activities that had taken place in their facilities, as well as who or what had motivated such changes. As it turns out, various change agents influenced the SCSF managers or the organizational leadership above them, and they came in all sorts of different forms.

In some cases, it was either colleagues or subordinates that had successfully advocated for different ES activities to take place within their facilities. In the town where Barbara previously worked, it was the neighborhood code enforcement officer. In her current role, it was one of her assistants. “You know, he’s on me right now on waiver forms,” she said, explaining how he is pushing for the office to go paperless. It got her thinking, “we gotta figure out a way to make these waiver forms disappear so that we’re not using so much paper.”

In other cases, it was the respondent’s new supervisor, who had single-handedly changed the recycling culture within her first month with the organization.

In the past we had like one or two recycling bin in the office, and it wasn't a major concern, it wasn't a part of daily routine, I guess you could say. (Laughing:) Almost immediately, she had recycling bins in everyone's office, and tried to be as friendly as we can, not print everything out just to highlight and throw away, so she's definitely a little more environmentally conscious than previous staff – not that they didn't care, but she just has more leadership in that, almost instantly she changed the culture. She's a lot more environmentally friendly in her vision, and I think we'll start to see more when she get's more comfortable and we get comfortable with her, so I get a feeling we'll get more things coming about that, than in the past (Henry).

In addition, the push to support some ES activities did not come only from individuals, but from town councils and taxpayers alike.

The government of this town has pushed – the recycling is huge because it affects every household – and the more you recycle, the less the town pays in tipping fees. So, that, I could say that has been a town-wide push, and they're very helpful about that (Kathleen).

People often ask at our facilities, like our football stadium, a couple of the baseball fields that have concessions – “how come you don't have any recycling” for like the bottles and cans there (Margie)?

Theme IV: Implementation

The final theme that appeared throughout the data analysis process had to do with the implementation of ES practices – the inspiration and driving factors spurring the genesis of the ideas, including various pre-emptive needs, as well as who and how the final decision-making process was made.

Inspiration

Another of the interview questions sought to elicit the motivation behind activities that could be considered ‘ES initiatives’ that had been implemented at their venues, whether it was the installation of energy efficient light bulbs, implementation of a recycling program or the use of green cleaning products. The inspiration fell into one of three categories: the

change agents addressed above, a desire to make an impact or participate in a healthy lifestyle, or as a pre-emptive measure.

Despite their inability to fully articulate what constituted ES, as well as the various barriers the implementation of ES faced, the respondents in general wanted to make a positive impact and viewed the potential “Triple Bottom Line” benefits of ES activities – better for the environment, better for people, better for the financial bottom line – in a very favorable light. When asked what kind of value ES brought, they almost all highlighted the various social, financial and human benefits it could bring.

I see, more and more often, that when high schools are building outdoor fields, they are going for energy efficient lighting, they are going for this artificial surface – they are not using water, all this paint, you don’t need to paint the lines – all of the stuff that they’re no longer spending on – I think you really – it comes quite often down to the money – and they’re willing to put money out for it, because they can look back at [our town] and say ‘Ok, so what’s your track record over the last eight years since you put this in? Ah, hmm, you really did save money’. [...] I think if we can reduce our emissions and all things like that, there’s a lot of things we can do to have a positive effect to slow down climate change – at least I would hope. [...] Personally I like to think that I had a positive impact on change that will leave less impact in the future (Kathleen).

Now, it’s more of a social value, but I think, obviously down the line, it’s more of an economic and sustainability issue, because if you’re doing something that is more responsible now, but will pay off down the line in the future, though it might cost a little bit more, financially, to do it now (Diane).

There isn’t anything that I don’t do and I don’t believe in doing in my regular work that I wouldn’t do in my play. And I’m lucky enough to have friends that believe that and colleagues that live that way too. So, I think it’s a privilege. And it goes back to, you know, community and sustainability, and... it’s a privilege. Everything is a privilege to have. We have so much, and we have so much where we’re living here. It’s crazy (Barbara).

Richard indicated that he wants to make a difference now that he has the opportunity to lead at such a young age, and that he strives to follow in Barbara’s footsteps. “I want to be a leader and not just following the pack and you know,” he said. For example, “before I got here, we didn’t really

have a budget for training,” he noted, but and after only six months in his position as director of parks and recreation, full funding for professional development for himself and his staff was in place. “I like to learn,” he grinned, “I like to be a step ahead”.

Pre-emptive Needs

When considering the application of ES concepts, the respondents also referred to a sense of pre-emptive need, which could be divided into two categories of need: conceptual and tangible.

The conceptual pre-emptive need was supported by a sense of concern for the future – future of the world, but also more specifically the future of their children. When asked what was the most compelling motivational factor behind her passion for ES, Kathleen answered that it was simply “Having children. Yeah. Wanting to leave the world at least as good, if not better, for them and for their children.” She elaborated by noting that if they used “less packaging, less water, less waste”, they could reduce their carbon footprint, and “have a positive effect to slow down climate change.”

Other respondents were more practical in their responses. For them, the tangible pre-emptive need was associated with real and compelling problems that loomed in the near future, so the goal was instead focused on avoiding major problems and headaches for themselves in the job within the foreseeable future.

For Richard, the heating system in his venue was a kind of “dinosaur, and we know it’s not very efficient”, and he was worried that it might fail at any moment, based on various mechanic’s assessments. However, instead of immediately advocating for the replacement of the unit (at a cost of \$70,000-\$90,000), he decided first to explore improving the insulation of various areas of the facility (at a cost of around \$35,0000) so that a smaller, and more efficient heating system could be

installed at a lower price (around \$40,000), thus spending approximately the same amount, but also reducing the longer term costs of operating the venue and reducing its impact on the environment. “If we want to be energy efficient and save money,” he said, “you have to at least insulate it.” Thus, he took advantage of an impending issue to create an opportunity for an ES enhancement to the infrastructure of his venue.

Decision-Making

One respondent, Diane, indicated that it wasn’t her responsibility to become involved or influence ES decisions. “Even though I say this is ‘my’ building... you know, it only to a certain degree is my building”, she said. “If [engineering] came to me and said, this is what we want to do, I would 100% back it, but in the proper chain of things, it’s not really right or appropriate to really jump that, when naturally they’re responsible.”

Nonetheless, for the most part, the other respondents felt that for any ES actions to be taken, the decisions were out of their hands due to the high expense, with the exception of low-level operational decisions such as green cleaning product procurement.

There are some things I can do. Like, I can choose to use, like I have, more environmentally friendly products, like cleaning products, or safer for our staff. And I don’t know why you wouldn’t, as they’re within a reasonable price range – which I hate to say that – usually I’m willing to spend a little more. But that’s something that we have a budget – we say there’s \$7000 of building maintenance funds, and that’s for cleaning products and repairs and everything else. And I try and figure out what can I do to get those and still have enough money to do everything else that I need (Richard).

There is a metering dispenser thing we hook up to our water supplies. So instead of buying gallons of floor cleaner, disinfectant cleaner, bathroom cleaner, we now have these concentrated things that meter out... so were not... we’re not using too much product and I don’t have the gallons, the plastic gallons hanging around. [...] So those are little things I am able to do, but if, you know, we wanted to do something bigger

scale, like heating systems, you know, high efficiency heating systems [...] Yeah, it's money. I work for the government. It's money (Kathleen).

For anything more complex or expensive, the decisions to consider ES infrastructure would have to be made at the community/executive level in order to provide funding. However, even when it was under consideration, other non-ES-related infrastructure took priority and diverted funds away from it.

[The town manager] was involved with bringing a couple of people up and looking at the facility, and making some recommendations and throwing some figures at him and having a discussion. I remember a number of meetings in the boiler room, talking about how a pellet system would apply to what we've got here. So that didn't go anywhere at this point in time as the roof project took priority. (Barbara).

For most of the respondents, it was the town community and taxpayer that had the final say on whether or not municipal funds can be spent on ES initiatives.

So I bring it to the budget committee, the Selectmen, they either approve it or say "No, I don't like that", which that means something and doesn't mean something, because ultimately it comes to town meeting either with or without their approval, and then the town asks me "Why do you want to do this"? And usually there's people that are very conservative, and people that are very liberal, and some people will say "Spend, spend – we want all the best for our kids in the community and health-wise", and other people say, "I can't afford my taxes" (Richard).

The reasoning was relatively straightforward: "Here, it's about the taxpayer, it's about the citizens," said Henry. "You could be doing great, but if you're not serving the local community, people are not going to be happy," and they primarily focus on how much it was going to cost them this year, as opposed to down the line.

Chapter 5: Discussion

The original purpose of this study was to assist in the development of an understanding of the level of importance of ES implementation to SCSF managers, the identification of what barriers or impediments prevent a greater degree of implementation of such policies at SCSFs, and a determination of what potential actions could be taken to increase the adoption of ES policies at SCSFs. As noted in the Chapter 3: Methodology, the foundational definition of the innovation applied to this study concerned the incorporation of ES policies, procedures and features into SCSF managers' facility operations, and its subsequent diffusion referred to the spread of adoption by the SCSF managers. In this chapter, I have summarized the outcomes from Chapter 4: Results as related to the original research questions and utilized the framework of the diffusion of innovation theory to help make meaning of the information. In addition, I have highlighted the value and implications of the results for practitioners, discussed the limitations of the research methodology and identified potential areas for future study related to this topic.

Application of the Diffusion of Innovation Theory Framework

The application of the diffusion of innovation theory framework to the themes and concepts that emerged from analysis process revealed a unique view of the SCSF managers' perceptions of ES and provided fairly clear answers to the three research questions that framed the study. In the following section, I provide an overview and explanation of how different parts of the diffusion of innovation theory assist in the description, interpretation and explanation of the perspectives of these SCSF managers as related to (1) the innovation, (2) time, (3) the social system, (4) the channels of communication, and (5) the adopter's decision-making process. In particular, I refer back to the four

themes and various concept areas, as they help explain why the adoption rate of ES policies and procedures by these particular SCSF managers has been relatively slow.

Inability to Articulate ES Slows the Adoption of ES Innovations

Regarding the first research question, the data collected and subsequent analysis indicated that in general SCSF managers demonstrated an inability to articulate what constituted ES practices and that ES activities in general occupied a relatively low priority level within the management of their facilities. What was not revealed was whether this inability to articulate a conceptual understanding of ES indicated an actual lack of knowledge of ES or simply a lack of the ability or confidence to share ES concepts within the context of a research interview.

Utilizing the application of the diffusion of innovation theory, the data indicated that the relative dearth of educational opportunities and ability to articulate an understanding with respect to ES activities combined with the lack of trialability and observability of ES enhancements were a plausible explanation of the relative slow adoption of ES policies and practices at the respective SCSFs. Without a detailed understanding or at least an ability to articulate examples of ES application by SCSF practitioners, it proved be difficult for participants to assess or communicate the relative advantage as described by Rogers (2003), and therefore they would be less likely to have an awareness of or the ability to articulate the significant value that socially responsible environmental practices can provide (Uecker-Mercado & Walker, 2012).

Accordingly, this outcome was in line with Kraatz' (1998) explanation that the social learning-focused aspects of diffusion are crucial, as they rely heavily on the observability of early adopter's trial of ES innovations. Without it, the adoption of an innovation may not be very efficient nor reach any significant depth.

Thus, the initial reticence of the respondents to define or elaborate on the ES aspects of the management of their facilities highlighted in *Theme I - Perception* made more sense as the various elements of Roger's theory was applied. Despite the first two components of the innovation itself – relative advantage and compatibility – resonating well with the respondents, the remaining three components – complexity, trialability and observability – were overwhelmingly unclear for respondents when speaking about the incorporation of ES policies, procedures and features into their facility operations.

Relative Advantage and Compatibility

The participants' perception of the relative advantage of the innovation of ES policies, procedures and features within the operational management of their facilities could be described as relatively high. Although most of them experienced some difficulty in articulating potential tangible applications of ES within their facility in *Theme I - Perception*, throughout the interviews they generally demonstrated a clear understanding of the overall value and benefits of ES – including the social, economical and ecological aspects of it. There was a clear conceptual connection between efficiency in light bulbs or heating units, for example, meaning that less energy would be used, resulting in lower costs for the organization and subsequently a reduced carbon footprint related to their energy needs.

Despite the inability to articulate what ES was or how it could be implemented indoors when asked directly, some participants revealed that they did in fact understand it conceptually through the choices they made in the operation of their venues. For example, the story that Richard related in the pre-emptive needs section about the importance of insulation for creating a more efficient heating environment within his venue did demonstrate an integration of the potential benefits of ES in

action. In addition, their awareness of the reduction of waste through recycling, minimization of water usage and improvements to indoor air quality all reflected positively upon the “Triple Bottom Line” of environmental, financial and human capital.

Similarly, a high degree of ES innovation compatibility with their values was demonstrated in the *Inspiration* section of *Theme IV - Implementation*, whereupon the innovation of ES policies and procedures were clearly linked with the respondents’ existing personal values. According to the diffusion of innovation theory, recognition of the relative advantage and compatibility with one’s values might normally indicate that such innovations would be more quickly adopted than others. However, this is not the case for the innovation of ES policies and procedures at these SCSFs, and the remaining three characteristics help to explain this outcome.

Complexity, Trialability and Observability

At first, I found that the complexity of the innovation of ES policies and procedures was a difficult concept to match up with the themes and concepts revealed in the data analysis phase. There are many different potential applications of ES, some of which are very simple and require no infrastructure modifications – such as recycling programs and the purposeful modification of operational habits (e.g. turning off lights when you leave a room) – and some that are very complex and require significant infrastructure modification, such as high-efficiency, computerized environmental controls that adapt heating, ventilation, sun shade and lighting systems simultaneously based on the number of people in a room and the prevailing exterior weather conditions. No respondents made any comments concerning the relative complexity of ES policies and procedures as having an impact on their potential rate of adoption, so this element appeared not to have any data to support or oppose this concept.

However, when viewed in a slightly different light – i.e. viewing complexity in terms of procuring funding and/or leadership support for the innovation of ES – the *Organizational Factors* and *Perceptual Factors* addressed in *Theme II - Barriers* suddenly fit very well into the concept, representing a very high complexity of implementation of the innovation, thus negatively impacting the SCSF managers' likelihood for a potential increased rate of adoption.

Due to the financial, organizational, leadership and priority deficiencies identified in *Theme I – Perception*, *Theme II – Barriers*, and *Theme IV – Implementation* that were associated with the integration of ES innovation, the trialability and observability of potential ES activities were very low. There were basically no opportunities for the SCSF managers to “test” or try out ES policies and procedures and evaluate results without actually going through the process of developing and implementing them.

If a SCSF manager cannot test ES policies or infrastructure, the next best opportunity would be to observe the application of the innovation by others within their professional circles. However, Steven's example of the lack of visibility of ES infrastructure enhancements in *Theme I - Perception* represented how difficult it is for anyone to observe the positive outcomes of the application of these innovations, whether it is their supervisors, the taxpayers or other SCSF managers. Accordingly, and in line with Rogers' (2003) theory, the lower the trialability and observability of an innovation, the lower the adoption rate would be expected to be.

In short, they did generally see the innovation of ES policies, procedures and features as potentially beneficial activities – that is, innovations with positive attributes and relative advantages that were very compatible with their personal values. Unfortunately, overall they didn't have enough of an ability to articulate their understanding of ES or facility management (as reflected in the

Individual Factors section of *Theme II – Barriers*) to overcome other factors that slow an innovation's adoption rate. Thus, the lack of articulation and/or understanding of ES in general, combined with the relative complexity of funding ES activities inside their venues, and the lack any real opportunity to test or observe ES innovations at work, put together, help to explain why we have seen a significantly low adoption rate and diffusion of ES practices and procedures at these SCSFs.

Revealing Hidden Barriers

With respect to the second research question, the data analysis indicated that although the respondents viewed finances as the most significant barrier to the incorporation of ES policies, procedures and features into SCSF managers' facility operations, there were actually a number of other significant (and potentially more influential) factors looming in the background that were preventing these SCSF managers from pursuing the implementation of ES enhancements. These hidden barriers included the weakness of education and training concerning ES in general, a lack of organizational leadership in ES matters, and other departmental priorities, as well as the perceptual barriers of the age of their facilities and the expectation the ES enhancements would be more costly than traditional operational activities.

The SCSF managers' indicated that their perception of the root cause of non-implementation of ES innovations at SCSFs was simply a lack of finances. However, one of the most valuable outcomes of this research study was that the framework of the diffusion of innovation theory suggested instead that it was not a lack of money but rather a fundamental lack of education and the ability to articulate their understanding of ES that was the most significant factor.

The diffusion of innovation theory explained this through the notion that ES enhancements falling into the category of "preventive innovations", which were particularly slow due to the fact

that the outcomes were uncertain and take significant time to be realized. This was in line with McCullough et al.'s (2015) assertion that the adoption or rejection decision of innovation adoption is made particularly more complex particularly when dealing with impacts that aren't visible or primarily focused on mid and long results.

Time

Within the diffusion of innovation theory, the element of time refers to when the respective people and organizations actually adopted a particular innovation, categorizing them as innovators, early adopters, early majority, late majority, and laggards. In general, the analysis of the interview data from this group of SCSF managers in *Theme I – Perception* and *Theme IV – Implementation* indicates that the respondents would likely fall into either the late majority or laggard category, with the exception of Barbara, who could be considered as a part of the early majority based on her responses.

The one weakness of such an approach to categorization is that it operates under the assumption that all parties will eventually adopt the innovation, given enough time. However, it might be more accurate to include “non-adopters” within the categories, so as to capture all possible outcomes. Nonetheless, the analysis of the data from the *Decision-Making* section of *Theme IV – Implementation* indicates that at least some adoption of ES activities has taken place across the board, although to a limited effect. It might be more appropriate to break down the ES innovation into several categories in order to properly identify where the SCSF managers fall in the spectrum from innovators to laggards. For example, it is possible a SCSF manager might be an early adopter in energy efficiency innovation techniques, but a laggard when it comes to water conservation or

sustainable materials selection. A single adopter label without breaking it down into the aforementioned categories does not describe very well the reality of these SCSF managers.

Nonetheless, the literature explaining the diffusion of innovation theory indicates that the low adoption rate of ES activities by the SCSF managers was not at all surprising, particularly as Rogers (2003) explained that “preventive innovations” are particularly slow to be adopted. “Preventive innovations are new ideas that are adopted in order to avoid some unwanted future consequences,” he explained. “Because the advantages of preventive innovations are uncertain and delayed in time, their rate of adoption is particularly slow” (p. 7542). The content section *Pre-Emptive Needs* in *Theme IV – Implementation* clearly indicates that incorporation of ES policies, procedures and features definitely fits into the category of adoption to avoid future consequences such as global warming and resource depletion.

Social System

Another valuable outcome of the research in this study was the revelation that the themes and conceptual ideas expressed by the respondents in *Theme I – Perception* and *Theme III – Assistance* indicated that in fact the social system that the SCSF managers live and work in was in general well-positioned to promote and increase the adoption rate of ES activities and processes. The norms and values indicated by the participants were in line with the precepts of ES activities and the SCSF managers have a high degree of autonomy, the business culture of the SCSFs promoted professional development of motivated employees and each of the respondents seemed to have a strong and responsive network of resources to support them in their endeavors. Nonetheless, the overall adoption rate of the ES innovation concepts was still very low. The social system appeared to be

missing one significant factor that can rapidly influence the adoption of innovation: a large enough number of change agents and innovation champions to help drive the process of adoption.

Many of the concepts in *Theme II – Barriers*, particularly the financial and organizational restrictions, still had significant sway over the current thoughts and perceptions of the opinion leaders and decision-makers. Without these important ES-promoting change agents and innovation champions – individuals that Rogers (2003) defines as those “able to influence informally other individuals’ attitudes or overt behavior in a desired way with relative frequency,” (p.7543) – there was little opportunity for altering the perceptions of the opinion leaders and decision-makers enough for the “tipping point” to be reached, which would significantly alter the system’s norms and social pressure to encourage a more efficient and rapid diffusion of ES activities across all SCSF managers.

Channels of Communication

As viewed through the diffusion of innovation theory, the analysis of the interview data indicated that the channels of communication that could potentially influence the adoption of ES policies and procedures at SCSFs were fairly robust. The *Personal Networks* and *SCSF Organizational Advantages* sections of *Theme III – Assistance* highlight the various mechanisms through which details of ES innovations could potentially be communicated.

There was no shortage of communication channels identified by the participants. Respondents noted that ES innovations could be communicated through personal interactions (whether with subordinates, colleagues, supervisors, college instructors or friends), mass media, state/regional/national associations and their formal/informal industry conferences, trade publications (printed and electronic), as well as online or in-person short or long-term professional

development opportunities ranging from one-off seminars to formal degree programs with universities and colleges.

Thus, the breadth, variety and accessibility the participants had to communication channels indicated that the operational barrier to ES practices was not availability of communication channels, but rather the limited scope of ES information and frequency with which it has been distributed through those various channels.

The adopter and the decision-making process

The diffusion of innovation theory framework concerning the adopter and their respective decision-making process addressed (1) the propensity for an individual to adopt innovations in general, and (2) the stages those individuals went through in the actual decision-making process. However, the data and analysis did not yield any significant information with respect to the individual likelihood of the SCSF managers to adopt innovations in general, so in this section I have focused almost exclusively on the information available as it pertained to the SCSF managers' and their leaderships' individual decision-making processes.

However, there was some evidence to suggest that the act of conducting interviews on the topic of ES in these SCSFs may have slightly increased the potential for the respondents to adopt ES policies or procedures in the future. Several of the respondents indicated that through participation in the interviews, a more adept responsiveness to ES adoption in the future might have been triggered. This notion covered the span of what could be termed as ES internalization – with Barbara and her facility on the strongly internalized end of the spectrum. “It’s a good reminder to make sure we pay attention to all the resources that we have,” said Barbara as the interview process came to a close. Barbara concluded our meeting by saying, “speaking to you has really made me want to think

sharper about [sustainability]”. However, although I would characterize Diane as having the weakest indication of internalized ES at her venue, she also indicated that participating in the interview process might have enacted some change.

“[Although ES] doesn’t have a natural carryover to my professional life, but I think I could probably raise the question to our maintenance director and the person who orders our paper goods and cleaning supplies, things like that, about ways to investigate things that are more environmentally friendly. [...] it would be interesting to see where that conversation would go” (Diane).

In reference to the third research question, although the data indicated that the respondents acknowledged the potential social and economic value associated with ES enhancements, its impact on the decision-making process was limited to areas that McCullough et al. (2015, p.11) described as “low hanging fruit”, such as recycling and “green” cleaning products because they were more tangible and acceptable to supervisors and the public.

Utilizing the framework of the diffusion of innovation theory, it became clear that the respondents were in general unable to progress much further than the awareness stage of the decision-making process, faltering at persuasion, particularly due to their lack of ability to articulate any education or training in ES applications they might have had. This affected their ability to effectively demonstrate the potential benefits of ES innovations, which was amplified by the exceedingly small number of change agents and innovation champions within their social system. This is in line with Hilz’ (2000) and Donaldson and Poulos’ (2010) findings, which emphasized the crucial importance of change agents and innovation champions within the social system.

Furthermore, this outcome is congruent with Janeiro and Patel’s (2015) research, which indicated that when assessing the ES of a particular innovation, although the environmental, economic, and social indicators need to be taken into account, the most crucial element is the

underlying concept of ES as held by the decision-maker, particularly because the final decision to implement is framed and directly influenced by their conceptual understanding of ES.

As highlighted by Straub (2009), the stages of the decision-making process include awareness, persuasion, decision, implementation, and confirmation. *Theme I – Perception* and *Theme II – Barriers* indicated that the participants were unable to articulate the general knowledge of ES, and that there was a relative dearth of training with respect to tangible and implementable ES activities in facility management. Furthermore, the *Decision-Making* section of *Theme IV – Implementation* indicated for the most part that the SCSF managers interviewed in this research project felt they had little or no decision-making power for anything of consequence to the management of ES activities within their venues. Although this was a serious oversight on their part – incredibly important ES activities such as recycling, material procurement, personal habits, organizational norms, communications initiatives and more were all well within the leadership and management responsibilities of their positions – it was not a surprise that further outcomes associated with the decision-making stages beyond awareness and persuasion were extremely limited.

Once again, Barbara seemed to be the lone exception to the above notion. She expressly stated that advocating for ES was everyone's responsibility and that she always favored the social needs over the financial: "I very rarely make a decision based on the financial end of things," she said.

Implications for Practitioners

Whereas the open coding and axial coding analysis processes were useful in providing the series of themes and concepts that produced a better understanding of the SCSF managers' perceptions of ES applicability in their venues, it was the application of the diffusion of innovation framework that revealed a valuable roadmap for future endeavors to ensure that a higher rate of adoption for ES activities can be achieved.

In the sections above, the framework of the diffusion of innovation theory highlighted several issues that helped to explain the relatively low adoption of ES policies and procedures by these SCSF managers. However, there was only one single theme that was represented in the explanation associated to all three research questions: the relative lack of ES knowledge (or ability to articulate it) and understanding of how it can be practically applied in the field.

So what can be done to address the general inability to articulate a conceptual understanding of ES and the various potential applications of ES within the operational management of sport facilities, large or small? The diffusion of innovation framework provided a roadmap that indicated that the trialability and observability of ES enhancements were key to increasing the adoption rate of ES activities amongst SCSF managers, as they have a significant influence on the awareness and persuasion stages of the decision-making process. However, the roadmap to increased adoption of ES initiatives at SCSFs begins with an enhanced educational focus on ES at the university level for future sport managers, and within the training networks of opinion leader organizations, such as regional, state and national parks and recreation associations, for the benefit of current sport managers. This was the same conclusion that Wang and Qi (2010) revealed in their study of IT applications in education.

The goal of this educational push would be to elevate ES to a foundational pillar status within the discipline of Sport Management – as advocated by the IOC (2001) – rather than the tangential relationship it holds now within Sport Management curriculum. For example, ES is not even yet a part of COSMA’s (Commission on Sport Management Accreditation) recommended Common Professional Component (CPC) for sport management curriculum (COSMA, 2010), nor under review for potential inclusion in the updated CPC recommendations in coming years (COSMA, 2015). McCullough et al. (2015) support this notion, highlighting that the combination of sport and the natural environment cuts to the core of sport operations and planning.

In addition, enhanced education and knowledge pertaining to ES application would serve to improve the SCSF managers’ ability to articulate the application of ES in their venues, increase the number of change agents and innovation champions, as well as reduce the need for trialability and observability (due to a higher-level ES knowledge base). This could subsequently result in reaching the “tipping point” for ES support more quickly in the SCSF managers’ social system, and provide a wealth of knowledge and material for SCSFs to successfully progress well beyond the persuasion phase of the decision-making process.

Enhancing the educational application of ES in the management of SCSFs would also help erode some of the perceptual barriers that were revealed in the analysis of the interview data. For example, all of the associated cost assumptions addressed in *Theme II – Barriers* were focused on the price of products at the moment of consideration, rather than their relative cost to the organization over a span of time. However, recent research suggests that pro-environmental policies, procedures and infrastructure actually produce savings if implemented, particularly when you view those costs over an extended time scale, which is completely appropriate when considering the costs

of managing a sport facility. For example, Nyikos, Thal, Hicks and Leach (2012) indicated that although certified “green” building procurement and infrastructure averaged a cost premium of 4.1% higher up front as compared to traditional construction, the “green” buildings achieved operating costs that were 31% lower than their traditional counterparts. Thus, the longer the time scale viewed, the less expensive the ES products and infrastructure became. This is supported by the findings of Gimenez et al. (2012), whose research suggested that environmental programs can have a positive effect on the “Triple Bottom Line” – people, planet and profit.

The increased knowledge and understanding associated with the elevation of ES to a foundational pillar within Sport Management will also drastically alter the cultural perception of ES activities across all levels of sport management. According to Schein, Fowler, Offermann and Gowing (1990), “culture is what a group learns over a period of time as that groups solves its problems of survival in an external environment” and it is this culture that “will be the ultimate causal determinant of [...] espoused values and overt behavior.” Over the last few decades as the perceptual importance of sustainable sporting operations has increased, the sport facility managers have generally developed what Schein et al. (1990) would describe as a consensus on the core mission, functions and primary tasks, goals, means for accomplishment of those goals, as well as the criteria for measuring results. However, ES has yet to rise to the level of a foundational pillar supporting the core mission, and hence it still remains a relatively low priority to current SCSF managers. However, elevating the importance of ES in sport management curriculum will help increase its importance within the culture of future sport managers.

In addition, it would make sense for SCSFs to develop some strategic partnerships with opinion-leading environmental organizations such as the National Resources Defense Council

(NRDC), the Green Sport Alliance (GSA) or the United States Green Building Council (USGBC). A cooperative partnership could provide benefits to both the SCSFs as well as the above-mentioned ES opinion leading organizations. The NRDC, GSA and USGBC could help SCSF managers by sharing best practices of what has been successfully implemented at the professional and university level, which could subsequently increase the trialability and observability of ES innovation adoptions at community levels.

Conversely, the SCSF managers, by working closely with the ES opinion-leading organizations, could provide insight into the needs of small communities, giving the ES opinion-leading organizations the raw material they need to use their resources to develop communication tools and promotional activities that showcase ES at SCSFs, the way they have done so for professional and college sporting organizations in publications such as the NRDC's *Game changer – How the Sports industry is Saving the Environment* (NRDC, 2012) and *Collegiate Game Changers – How Campus Sport is Going Green* (NRDC, 2013). Once a sufficient number of SCSFs have implemented ES innovations at their facilities with the support of the NRDC, one could easily imagine the next publication in this series: *Game Changers – How Small Community Sport Facilities Provide a Green Foundation for the Industry*.

In addition, there is value in utilizing the conceptual “waves” metaphor of ES innovation adoption as described by McCullough et al. (2015) because there is no “end state” to ES activities. Instead, ES enhancements encapsulate broad changes that take place over time, gradually moving forward but experience ebb and flow, depending on the strength of various elements of Roger's (2003) diffusion of innovation theory that are in place. In short, a stronger series of waves have washed over the professional and university sport landscapes than have reached the SCSFs.

One of the reasons behind this is that some of the most important factors identified by Kellison and Hong (2015) in the adoption of ES activities by professional and university sport organizations – such as increased goodwill, fan identification and competitive advantage – simply do not apply to the small town environment operated in by the SCSF managers. This is why the education enhancement approach would be so valuable – in short, education of ES applicability could address all of the elements that are currently restricting the rapid adoption of ES policies and procedures at SCSFs simultaneously, and provide potentially significant benefits at all levels, not just small communities and the sport facilities they operate.

Limitations

Although the exploration of these topics were driven by an attempt to assist in the development of an understanding of the level of importance of ES implementation to SCSF managers, identify the barriers and impediments to implementation of such policies at SCSFs, and determine what potential actions could be taken to increase the adoption of ES policies at SCSFs, this study was not without its limitations.

First and foremost, the limited number and geographic location of all of the participants in this study could have had some impact on the resulting conclusions. Including participants from other geographic areas of the United States might have provided a broader perspective, particularly if there was greater demographic diversity amongst the SCSF managers interviewed. Although there was a gender balance of four women and three men interviewed, all seven of the SCSF managers were Caucasian, college-educated individuals without any graduate study experience related to sport management or environmental sustainability.

Establishing enhanced trustworthiness through triangulation and member checking was challenging to achieve for this project. Although my methodology identified the intention to include a document analysis of printed and/or online artifacts concerning the venues and utilize field note observations to triangulate data and establish more robust data resilience of the findings, there was not enough data to fulfill either of these objectives. Only one of the seven facilities published a pamphlet regarding their facility and the online details posted about all of the facilities were extremely minimal. Compounding this issue, neither the printed nor online information about the venues made any reference to ES. Furthermore, the information that was available focused most frequently on logistical information such as facility operating times or directions to the respective venue locations and thus did not provide any insight with respect to any of the project's research questions. In addition, as the observability of ES enhancements within the venues was very low, the information within my field notes did not yield any valuable information to contribute to data triangulation.

Similarly, due to time constraints there was not an adequate opportunity to present initial findings nor to conduct a thematic review with the participants as a member checking exercise. However, there is some debate as to whether or not member checking should be considered as a validation strategy. Morrow (2005) suggested that "member or participant checking should not be treated as validation or verification; rather, it should be viewed as an elaboration on the emerging findings and treated as additional data" (p. 252).

Nonetheless, there were some opportunities for peer review to enhance the trustworthiness of the themes and outcomes from the research process. Members of my thesis committee reviewed various sections of this project and provided valuable feedback in the middle and final stages of the

development of this document. For example, I was encouraged to enhance the iterative process of data review and to consider alternative coding options that might reinforce the trustworthiness of the conclusions.

I would also point out the limitation of being the sole researcher involved in this project and having had a limited timeframe to complete the research during the course of the Spring 2016 semester. As a result, no other researcher nor respondent were involved in the data coding nor analysis phases of the project. As noted by Merriam and Tisdell (2016), “qualitative research is concerned with understanding how a particular researcher's values and expectations influenced the conduct and conclusions of the study” (p. 556). Although I did attempt to bracket my assumptions and biases as highlighted in my subjectivity statement, it is possible that alternate interpretations of the data could have been developed should other personnel have been involved in the project.

Future Research

It is important for research such as this to lay out potential roadmaps to increase the adoption of ES activities at SCSFs. However, there are many ways in which this research could be extended to provide additional value to various sporting communities. For example, it would be of great value to organize and implement interventions of various ES applications at SCSFs, so as to increase the overall trialability of ES applications. As a result, there would be a series of verified intervention outcomes that would be able to further demonstrate the observability of ES applications. With increased trialability and observability – two of the most significant weaknesses of ES application at SCSFs – the adoption rate could potentially be significantly increased, subsequently increasing the social, economic and ecological benefits at the same time.

It might be of interest also to use the research and conclusions developed during this study to develop an instrument to conduct some quantitative research concerning SCSF managers' perspectives of ES across the country. As a result, one would have a relevant, countrywide set of quantitative data to compare to the conclusions drawn from this piece of qualitative research. In addition, a deeper investigation of SCSF managers' propensity for innovation adoption of *any* type in their life (let alone ES) would be of value since this research study did not yield any significant information in this area.

In addition, despite the existence of elements that potentially offered to support a speedier adoption of ES elements – such as social learning through personal networks, operational autonomy and professional development opportunities – these elements did not appear to translate into tangible applications of ES. This suggests that another element was potentially in play – personal motivation – which was not drawn out by the data collection process nor revealed utilizing the theoretical framework of the diffusion of innovation. Thus it may be of value to include questions specifically targeting motivation in the survey instrument.

It may also be of use to triangulate the results of this study by applying alternate theoretical frameworks to explore the relationship amongst the knowledge, leadership and decision-making processes in play at SCSFs and provide a deeper understanding of the data. For example, it may be useful to review the data through the prism of Institutional Theory to examine the mimetic and coercive isomorphic forces that affect of the attitudes and behaviors of SCSF managers involvement in ES activities. Alternatively, one might utilize the Managerial Theory of the Firm to explore the relationship of stakeholder pressure, organizational culture, financial impact, competitiveness, and ethics within SCSFs.

As a final suggestion for future research, since the data suggested that participation in this research might potentially have performed a change agent-style role and may have slightly increased the potential of the respondents to adopt ES policies or procedures in the future, it would be of value to re-visit the participants after several years to evaluate any impact of the study. The interviews were not conceived as an ES intervention, but as several of the respondents indicated that their participation in the project had made them think more actively about ES in relationship to their job, perhaps there could be some correlation of increased ES activity to participation in the study. If there were some indicative response, it would enhance the potential value of all further research in the area of ES as applied to SCSFs.

Chapter 6: Conclusions

One of the more valuable outcomes of this study was the indication that SCSF managers were unable to articulate their conceptual understanding of ES practices and that ES activities occupy a relatively low priority level within the management of their facilities.

However, it was only when that theme and other supporting data were analyzed further using the framework of the diffusion of innovation theory that the most significant outcome of this study and primary contribution to the literature on this topic was revealed: the indication that the SCSF managers' perception of finances as the root cause of non-implementation of ES may not be accurate. Instead, the framework indicated that it was not a lack of finances, but rather a fundamental lack of education, understanding or ability to articulate on the topic of ES that was the most significant factor limiting the adoption of ES innovations at SCSFs.

Thus, the utilization of the diffusion of innovation theory as a framework for the analysis provided a useful assessment and explanation of the respondents' comments and relative low adoption of ES activities by these SCSF managers. In short, the application of the diffusion of innovation framework to the themes developed in the analysis phase exposed significant weaknesses in the trialability, observability and ability to influence the decision-making process of ES innovations, thus providing a valuable explanation of the "greening gap" that has been growing between SCSF and professional/university sport organizations.

Thus, the goals of this research project have been achieved, and the data gathered and themes revealed as a result of the analysis have demonstrated that the choice of conducting qualitative research in this area was valid and productive. The data and its analysis has successfully assisted in furthering our understanding of the level of importance of ES implementation to SCSF managers,

identified the most significant barriers and impediments that prevent a greater degree of implementation of such policies at SCSFs, and has provided a roadmap for potential actions that could be taken to increase the adoption of ES policies at SCSFs. Hopefully the results and information presented in this study will help fill the gap in the literature with respect to the understanding of SCSFs and the application of ES by those that manage their facilities.

Additionally, if the roadmap marked out by the diffusion of innovation theory framework is integrated by organizations such as COSMA – e.g. if the importance of ES in sport management curriculum is elevated, if the amount of academic research in the realm of ES at SCSF is increased, and if strategic partnerships with opinion-leading environmental organizations are developed – the most glaring weaknesses identified by this research may potentially be addressed and we could collectively increase the adoption rate of ES activities by SCSFs around the country and globe. The resulting affect could significantly benefit the “Triple Bottom Line” – an improved economic outlook, an improved social outlook and an improved physical environment for us all to live in.

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Appendix A: Semi-Structured Interview Protocol

Introduction:

I would like to begin by thanking you for participating in this study and for taking the time to meet with me and answer my questions concerning environmental policies and procedures in the maintenance and operation of your sporting facility. Please review this form and let me know if you have any questions before we begin.

May I have your permission to record our interview using an audio capturing software?

The goal of this interview is to ask you a series of questions related to the management of your sport facility. I am interested in how you perceive of environmentally sustainable policies and procedures as applied to the maintenance and operations of your facility.

Questions:

1. What does the term “environmental” mean to you?
 - a. (Follow up with:) How would you define the term “sustainable”?
2. How would you describe what it means to have an “environmentally sustainable” sporting facility?
 - a. (If the term “LEED”, “BREEM” or “certification” was not a part of their answer, follow up with:) Are you aware of any industry-wide or professional rating systems that assess the application of environmental sustainability of a facility?
 - b. (If yes, follow up with:) Can you describe what you know about that/those rating system(s)?

3. Have you ever had any formal or informal training in environmentally sustainable management of facilities?
 - a. (If the answer is yes, follow up with:) Could you please tell me a little bit more about that training? What did it consist of? Why did you decide to participate in this training?
4. What tangible systems within any sporting facility can have environmentally sustainable maintenance or operational practices applied to them?
 - a. (Follow up with:) What do you consider to be the benefits of the implementation of environmentally sustainable policies at a sporting facility?
5. Could you please describe any environmentally sustainable policies or procedures that you currently apply at your facility?
6. Do you think that you have the same opportunities to implement environmentally sustainable practices as professional sport facilities such as those owned/operated by NFL, MLB or NBA teams? How about university sport facilities?
7. What do you see as the barriers or impediments to being able to pursue the implementation of environmentally sustainable policies, procedures or certifications at your facility?
 - a. (As this is a core target of the study, follow up by asking for more detail on each barrier/impediment mentioned).
 - b. (Follow up with:) Can you think of any ways in which those barriers/impediments could be overcome?
8. What kind of interaction do you have with other SCSF managers?
 - a. (Follow up with:) Do you ever visit other SCSFs to observe how they manage their facility? What kind of best practices

- b. (Follow up with:) Are you a member of any association of SCSFs? If so, has environmentally sustainable practices ever been a topic raised
- 9. What would you say has the greatest influence on how you manage your SCSF?
- 10. What kinds of opportunities for professional development do you have in your position?
 - a. (Follow up with:) Has environmentally sustainable management ever been a topic offered as an opportunity professional development?
 - b. (Follow up with:) Do you have interest in learning more about potential strategies or best practices for improved environmental stewardship in the operation of your facility? What would your interest level be if there were opportunities offered?
- 11. How does your perception of the social value and or potential economic benefits factor into your decision-making process for implementing environmentally sustainable practices?
- 12. Is there anything that you might have expected me to ask concerning this topic, but I did not?
 - a. (Follow up with:) Did any of my enquiries trigger any questions of your own regarding environmentally sustainable practices in sport?

Appendix B: Open Coding Statistics

Code	R1	R2	R3	R4	R5	R6	R7	_	Total
4-5 years ago	1				1				2
5-10 years ago		1							1
a_ Inspiration, Healthy Lifestyle			1	1					2
a_ Inspiration, Natural Surroundings as Youth			1						1
a_ Inspiration, Privilege to have natural surroundings			2						2
a_ Inspiration, Strive to be a leader				1					1
a_ Perception of Environmental Sustainability	2	4	3	1	2	1	2		15
Accessibility to Public	1								1
Air Conditioning			2		1				3
Air Quality					1				1
Associations	2	1	1	1	1	2			8
Autonomy							1		1
Avoid Major Problems				1					1
Benefits of this interview conversation re Env. Sust.	1		1				1		3
Benefits_a_ Perception of Environmental Sustainability			1						1
Both	2	1					1		4
Channels of Communication	1	2							3
City Code					1				1
Colleagues			5			1			6
College Professors		2				1			3
Common Sense						4	1		5
Common Sense, a_ Perception of Environmental Sustainability						1			1
Community/Taxpayer Opinion	1	1	3			2			7
Community/Taxpayers				5	1				6
Concern for Children's Future	1								1
Conference	1	1	1			3	1		7
Decision Making Process			3						3
Direct Supervisor			1			1			2
Education	1								1
Efficiency					2				2
Energy	1				3				4
Environmental Sustainability Training			1	2					3
Facility Age	2			1		3			6
Fellow Facility Managers		1	1	1	1	1			5
Financial	2								2
Grassroots	1		1						2
Green Cleaning Products	1	2	2	3	1	1	2		12
Healthy Lifestyle				1					1

Heating	3	1	5	4	2	1			16
High efficiency heating	1			2	1				4
Improved Insulation	1		1	2					4
Indoor Air Quality	1	1	1		2	2			7
Innovation Champion	1		2						3
Internet			1						1
Knowledge	1	1					1		3
Lack of Interest		1							1
Lack of Leadership	2	3							5
Lack of Resources	1	2	1		2				6
Lack of Time					2				2
Last 2-3 years	1			1					2
Last Year					1				1
Leadership open to ideas	1			2	1		1		5
Leaking Oil Tank	1								1
LEED	1			1			1		3
Lighting	4	3	3		2	1	1		14
Lighting Controls		1							1
Logistics		3			1				4
Maintenance Department		2			1		1		4
Materials	1		1	1	1		3		7
Money	9	2	2	6	6	1			26
Municipal Departments	1								1
Natural Surroundings as Youth						1			1
Newsletter					1				1
No background in facility management					1		1		2
Non-Sport Related Education					1				1
Observability	1								1
Online sessions			1	1			1		3
Operations Committee			2		1				3
Organization			1						1
Other Priorities			2		1				3
Out of my control/mandate/job description		2		1	1				4
Out of my control/mandate/job description, Common Sense						1			1
Park & Rec Commission		1							1
Parks focus for environmentalism	1	1	3	1		1			7
Parks focus_a_Perception of Environmental Sustainability		1		2					3
Perception of high costs		1		1			1		3
Priority of Environmental Sustainability						1	2		3
Pro & University models							1		1
Pro/University Sport	1								1
Proactive					1				1
Recycling	2	1	3	1	2	3	1		13
Reducing environmental footprint	2								2

Respondant	2	1	1	1	3				8
Saving Resources	1		1						2
Seminar	1				1				2
Slow decision chain							1		1
Slow decision chain, Individuals							1		1
Social			1						1
Some background in facility management						1			1
Sport-Related Education	1	1	1	2		1			6
State Mandate	1								1
Supervisor			1			1			2
Supervisor Decision, Leadership open to ideas				1					1
Tenants	1								1
Third Party Agency/Contractor	1		2		1				4
Third Party Contractor	1			1	1				3
Time	1								1
Too many layers of communication for decision							1		1
Town Focus	2	2	1						5
Town Manager	1	1							2
Trade Magazines				1		1			2
Training Programs	1					1	2		4
Transport			3						3
University Courses					2				2
Visibility of problems	1				3				4
Water	1		1	1	2	1	1		7
Water Management			1		1				2
We're different from most					2	2			4

Total**74 48 72 51 62 41 30 378**