SPORT EVENT ATTENDEES' PRO-ENVIRONMENTAL BEHAVIOR IN DAILY LIFE VERSUS IN A TOURISM CONTEXT

By

Ju Hyoung Han

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of requirements
for the degree of

Sustainable Tourism and Protected Area Management—Doctor of Philosophy

2014

ABSTRACT

SPORT EVENT ATTENDEES' PRO-ENVIRONMENTAL BEHAVIOR
IN DAILY LIFE VERSUS IN A TOURISM CONTEXT

By

Ju Hyoung Han

Collegiate football games in the U.S. are a growing sector of sport event tourism. While these sport events clearly generate positive social and economic benefits, the Environmental Protection Agency estimated that an average college football game produces 50 - 100 tons of waste and releases 188 - 376 metric tons of CO_2. To minimize such negative environmental impacts, universities have implemented campaigns to motivate football fans to engage in pro-environmental behavior. However, it is challenging to mobilize individuals' environmental concerns and transform them into action while they are watching games and participating in tailgating. The discrepancy of pro-environmental behavior in daily life versus in a sport tourism context is poorly understood, as most researchers have focused their studies in one or the other context. By employing goal-framing theory (Lindenberg & Steg, 2007) and the Social Norm Approach (Perkins & Berkowitz, 1986), this study examined whether and how event attendees' pro-environmental behavior in daily life differed from their behavior in the sport event setting.

This study employed a quantitative research method. Tailgaters were intercepted for the first three Michigan State University home football game days in the fall of 2013 using systematic sampling procedure. A cross-sectional survey design was used to examine which psychological constructs predict pro-environmental behavior (i.e., recycling) at home versus at tailgating settings. From the on-site intercepted tailgaters (n=1,468), 405 surveys were used for statistical analyses after conducting online and mail follow-up surveys. Descriptive statistics, exploratory factor analysis, multiple regression analysis, paired sample *t*-test, and mixed

between-within subjects analyses of variance were conducted. Results showed that underlying mechanisms of pro-environmental behavior differed in daily life versus in sport event tourism. Personal moral norms, hedonic goals, and perceived behavioral difficulty had effects on pro-environmental behavior in daily life, whereas descriptive social norms had effects on the same behavior in the event setting, after controlling for the effects of age, gender, and habitual environmental behavior. Additionally, event attendees were less likely to engage in pro-environmental behavior at events compared to their behavior in daily life. The degree of decrease in such behavior was different depending on event attendees' perception of destination's environmental responsibility and event attendee types (i.e., tourists vs. non-tourists).

This study discussed different mechanisms across settings. This study also advanced understanding of spillover of the same pro-environmental behavior from daily life to a sport event tourism context. In terms of environmental policy and campaign interventions, practical recommendations included: visualizing descriptive social norms among event attendees; using peripheral cues in environmental campaigns in the sport event tourism context; informing attendees of the destination's greening efforts; and targeting different types of attendees with tailored campaigns. Although this study presented promising theoretical and practical contributions, nonprobability sampling approach limits generalizability of the study findings. Future studies are recommended to replicate the study in additional sport event destinations. Another limitation is that this study did not control the actual behavioral difficulty. It is recommended for future studies to utilize GPS to include actual behavioral difficulty (e.g., distance to recycling containers) in sport event settings to better understand the of spillover effects of pro-environmental behavior.

DEDICATION

To my beloved husband Eunsub Lee,
To my family,
To all of you who believed in me,

To my future.

ACKNOWLEDGEMENTS

I am deeply grateful to my advisor, Dr. Charles Nelson, whose teaching and guidance have been greatly appreciated. He has been a terrific mentor, with whom I have shared so much excitement on this journey. I am grateful to him for his guidance, suggestions, and insights for improving my dissertation and broadening my academic thinking. To Drs. Christine Vogt, Dan McCole, and Eunsil Lee, my committee members, I would like to express my heartfelt thanks. They provided their time, knowledge, experience, wisdom and emotional support, and kept me focused on the end goal. I have learned a lot from them and have been very fortunate to have had such a good supervisory team in my doctoral program. It has been an amazing journey, and one I could not have made without their help.

I also want to thank the faculty, staff, and members of the graduate office in the Department of Community Sustainability, and colleagues and friends in the Sustainable Tourism and Protected Area Management Program. They showed their interest in what I was doing, and offered friendly words of encouragement. They stayed by my side through all the stress of this difficult but awesome time. They have been a source of everyday merriment. Thank you all. It has given me great peace of mind to know that I have been cared for and loved by you.

I am extremely thankful to my family for believing in me. They are witnesses to my challenges and the cornerstone of my success. Their incredible tolerance and encouragement are greatly appreciated and will always be remembered. Finally, I greatly appreciate the continuous support and understanding of my husband Eunsub Lee. He has made my academic and personal journeys burst with love. I could not have done it without you.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

This chapter includes the following sections: (1) Background; (2) Need for the Study; (3) Introduction of Study Constructs: (4) Problem Statement: (5) Purpose of Study; (6) Conceptual Model; (7) Research Questions and Hypotheses; (8) Definitions of Terms; and (9) Delimitations.

Background

Event tourism is generally recognized as tourism that is inclusive of all planned events, ranging from mega events to local sport events (Getz, 2008). As a research topic, sport event tourism, as a sub-set of event tourism, became firmly established in the 1990s, and has been expanding substantially since 2000 (Getz, 2008). Sport event tourism is unique in that sporting events are the dominant attractions for travelers (e.g., sports spectators, sport event participants) (Ritchie & Adair, 2002). Yet, sport event tourism shares many aspects with tourism in general in that it involves travelers who are away from their everyday life (Standevan & Deknop, 1999), seeking leisure and recreational opportunities in their travel experiences (Gamon & Robinson, 1997).

Several studies have noted that sport event tourism, like tourism in general, brings positive and negative impacts to the host destinations and communities. The positive side includes increased revenue and improved infrastructure such as new facilities for the host communities, building a positive image of the destination, and creating a sense of community pride and involvement (Chalip, Green, & Hill, 2003; Lee & Taylor, 2005; Smith, 2005). At the same time, however, sport event tourism brings negative impacts such as crowding, crime, traffic

congestion, and community displacement (Barker, Page, & Meyer, 2002; Higham, 1999). In the sport event tourism domain, there has been a great deal of emphasis on the social and economic benefits of event tourism development. Yet until recently, there has been relatively little concern about sustainability (Presbury & Edwards, 2005), and little attention placed on the negative environmental consequences (Getz, 2008).

Sustainability can be widely defined as encompassing economic, socio-cultural, and environmental responsibilities, referred to as the triple-bottom-line of sustainability (Font & Harris, 2004; Getz, 2009; Hede, 2008). Sustainability comes in many forms, and tourism planners and event organizers continuously seek ways to pursue environmental and social sustainability alongside financial sustainability in their long-term plans. Sustainable practices in the tourism domain include greening events. A greening event can be defined as an event that incorporates sustainable practices into its management and operations (Laing & Frost, 2010). Sustainable practices in greening events include, but are not limited to, access to public transportation, recycling, source reduction, availability of renewable energy (solar, wind, hydro, biomass, etc.), promoting green messages, and educating tourists to engage in pro-environmental behavior. Goldblatt (2011) pointed out three core strategies for event organizers to move toward greening their events: (1) Innovation: creatively harnessing emerging strategies and green technology for increased energy efficiency and environmentalism; (2) Conservation: responsible use of natural resources and waste minimization; and (3) Education: promoting ethical behavior toward energy and the environment while creating memorable event experiences.

Michigan State University (MSU) has gone greener by implementing various greening practices on campus through “Reduce, Reuse, and Recycle” (MSU Surplus Store and Recycling Center, 2013) and keeping materials out of landfills. At MSU, going green refers to personal

responsibility that is shared by students, faculty, and staff. Through both small steps and large collective actions, they show how such effort can make a big impact and a better world (MSU Office of Campus Sustainability, 2013).

The MSU campus, as a tourism destination on game days during the football season, makes special efforts toward green initiatives. This began in 2007 when the MSU Athletics Department launched a multiyear "GO GREEN" initiative and is continuously expanding its beverage container-recycling program (MSU Athletics News, 2007). The Surplus Store and Recycling Center runs “The Game Day Challenge” to promote waste reduction and recycling at football games (MSU Recycling, 2013). All event attendees are encouraged to deposit their trash in the appropriate receptacles and to participate in waste reduction and recycling program in keeping the campus “green and clean” (MSU Game Day, 2013).

However, it is challenging to mobilize individuals’ environmental concerns and transform them into action while they are traveling or participating in sport events as their focus is on the event rather than their environmental behaviors. It is critical to motivate event attendees to take an active role in responding to event organizers’ green efforts. Motivating event attendees to engage voluntarily in pro-environmental behavior at tourism destinations is expected to contribute to environmental sustainability by reducing greenhouse gas emissions, reducing waste products, increasing recycling, etc.

Need for the Study

Sport Event Tourism in College Towns

Sport event tourism ranges from mega events such as the Olympics to local sporting events. Collegiate football games in the U.S. are a growing sector of sport event tourism.

According to the National Collegiate Athletic Association (NCAA) (2014), a total of 50,291,275 fans attended college football games at the 657 NCAA football-sponsoring schools in 2013. The total attendance at these sports events has been increasing continuously. The average number of attendees per game at national level was 12,684 in 2001 and increased to 13,589 in 2013. College campuses, as sport event tourism destinations, are visited by a huge number of fans on football game days. For example, in 2013, the University of Michigan had 111,592 fans per game, Ohio State Univ. had 104,933 fans, and Michigan State University had 72,328 fans per game (NCAA, 2014).

While these sport events clearly generate positive social and economic benefits, the Environmental Protection Agency (EPA) estimated that an average college football game produces 50 to 100 tons of waste, and releases 188 to 376 metric tons of carbon dioxide into the environment (EPA, 2012). In response to this negative environmental consequence, the EPA implemented the "Game Day Challenge" initiative in 2009, to promote a "Zero Waste" program on game days. In an effort to reduce the amount of waste accumulated during college football games, 75 participating colleges and universities, including MSU, reduced the amount of waste from football games by nearly 500,000 pounds, which prevented more than 810 metric tons of carbon dioxide from being released in 2011 (EPA, 2012). This environmental campaign included promotional efforts motivating football fans to engage in pro-environmental behavior while attending sporting events (i.e., watching games and participating in tailgating).

Promoting Pro-environmental Behavior in Daily life vs. in a Tourism Context

Although individuals may have positive environmental attitudes and engage in pro-environmental behavior in their daily lives, they may be less likely to engage in such behavior

while they are traveling or are enjoying recreational activity. This topic is poorly understood, as most researchers have focused their studies on understanding individuals that do engage in pro-environmental behavior with a single contextual perspective: either in their daily life or in a tourism context. Also, if the behaviors between settings differ, it is possibly because the effects of psychological constructs of pro-environmental behavior are differentiated between daily-life and tourism contexts. For example, individuals place less attention to environmental concerns or moral obligations in a tourism setting and they place more attention to their needs for convenience or comfort while they are travelling. If environmental campaigns are designed based on theories and models developed based on daily life, then applied in promoting tourists' or recreationists' pro-environmental behavior in the tourism context, the campaign may not be effective. Accordingly, a question arises as to whether promotional campaigns for inducing pro-environmental behaviors need to differentiate between daily-life and tourism contexts.

Event attendees enjoying special events tend to behave in a more liberated way, less constrained by moral obligations than in their routine life. A few researchers have suggested that pro-environmental behavior is more pervasive in the daily-life context, compared to the tourism context (e.g., Dolnicar, 2010; Miao & Wei, 2013). Given the contextual nature of the behavior of tourists who are escaping routines, and are seeking leisure time and recreational opportunities (Pearce, 1982), the challenges to motivate pro-environmental behavior in a tourism context appear to differ from those in a daily-life context. To increase the effectiveness of environmental campaigns in tourism destinations, it is critical to understand whether and how individuals' pro-environmental behavior, and the underlying psychological constructs of such behavior, differ between two different contexts.

Introduction of Study Constructs

Many theoretical frameworks have been developed and used for explaining individuals' pro-environmental behaviors, including the Value-Belief-Norm (VBN) theory (further developed by Stern [2000]), the Social Norm Approach (SNA; developed by Perkins & Berkowitz [1986]), and the Goal-Framing Theory (developed by Lindenberg & Steg [2007]). Although these theories are by no means exhaustive in explaining all types and situations of pro-environmental behaviors, they have been widely supported by identifying the underlying psychological constructs of individuals' pro-environmental behaviors. According to the previous research that employed these theories, personal moral norms (e.g., to obligate one to environmental conservation), descriptive social norms (e.g., to a follow what others actually do), injunctive social norms (e.g., to follow what others ought to do), hedonic goals (e.g., to feel better) and gain goals (e.g., to get personal benefits) facilitate individuals' environmental behaviors. On the other hand, researchers have also generally agreed that perceived behavioral difficulty inhibits individuals' environmental behavior (Ajzen, 1985; Kollmuss & Agyeman, 2002). These facilitators and inhibitors have been addressed in separate studies. Empirical research has yet to be conducted that combines these multiple psychological constructs into one holistic model. In other words, little research has focused on whether the relationships between psychological constructs and environmental behavior in an everyday-life context are transferable to a tourism context, or vice versa.

Event attendees or recreationists visit destinations to get away from home, experience a change of pace from regular daily life patterns, and to experience recreational activities (Smith, 1978). When people willingly travel to or enter into an event-specific place for a defined period of time, they engage in activities that are out of the ordinary and experience a temporary

difference from everyday ordinary life (Cohen, 1979; Jafari, 1987). Therefore, it is expected that a model explaining effects of facilitators and inhibitors on individuals' environmental behavior in the daily life context is not the same as a model describing such relations in a tourism context.

There is growing recognition of destination social responsibility, especially with the recent environmental responsibility focus in event literature (e.g., Babiak & Trendafilova, 2011; Laing & Frost, 2010). Event destinations' environmental responsibility includes waste management/recycling system operation and environmental campaign development. With respect to the 'green event attendees,' destinations expect such operations to encourage event attendees to adopt pro-environmental behavior. Yet, little research has examined whether event attendee's greater awareness of destination environmental responsibility increases their adaptation of environmental behavior. Research needs to be done to examine whether the event attendees' consistence or inconsistence between at-home and at-event environmental behavior is influenced by event attendees' perceptions about destination environmental responsibility.

Also, event attendees' environmental behavioral differences between in daily life and event tourism contexts are affected by event attendees' characteristics. Event attendees or recreationists are not homogeneous in terms of their travel/recreation behavior. Sport event attendees include local residents who live near by the destination, who are members of the destination's community (e.g., students on college football game days), and tourists who traveled from outside the local area to the destination. A local resident's or destination traveler's community may or may not differ from what one experiences as a tourist. Accordingly, differences in environmental behavior between daily life and event settings may be moderated by types of event attendees. Event attendees or recreationists differ in their psychological connections to a particular recreational activity (e.g., perceived personal importance of tailgating

activity) and behavioral connections to a tourism/recreation place (e.g., prior traveling history to a place). Researchers have conceptualized those connections as recreation involvement (Kyle, Absher, Hammitt, & Cavin, 2006; Lee, 2011), and experience-use history (Hammitt & McDonald, 1983; Ong & Musa, 2012), respectively. Literature has addressed such tourist/recreationist characteristics to help to understand recreationists' environmental behavior in destinations (e.g., Lee, 2011), yet little research has examined the potential moderating roles of recreation involvement and experience-use history on differences in pro-environmental behavior in daily life and in the tourism setting.

Problem Statement

The problem underlying this study is the absence of a comprehensive model for explaining sport event attendees' pro-environmental behavior both in daily-life and tourism contexts. Accordingly, this study aims to (1) examine whether and how psychological constructs of environmental behavior—facilitators (i.e., Personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, and gain goals) and inhibitors (i.e., perceived behavioral difficulty)—influence sport event attendees' pro-environmental behavior in daily life versus in the context of sport event tourism; (2) examine whether event attendees' pro-environmental behavior in daily life differs from their behavior in the sport event tourism context; and (3) assess whether the difference of pro-environmental behavior between in daily life and event setting is differently affected depending on event attendee' characteristics—i.e., event attendee perceived destination environmental responsibility, event attendee types, recreation involvement, and experience-use history—in a sport event tourism context.

Purpose of Study

The primary purpose of this study is to provide helpful information to event managers and policy makers about how to develop or advance environmental campaigns at event tourism destinations. If the underlying mechanism of pro-environmental behavior in daily life differs from the mechanism of such behavior in an event tourism context, then event organizers and policy makers need to develop environmental campaigns that focus more on identified predictors and less on insignificant factors when implementing such campaigns in event tourism contexts. An additional purpose of this study is to help event organizers to target different sub-groups of event attendees with tailored environmental programs in a sport event tourism context. Together, it is hoped that the information about differentiated roles of predictors of pro-environmental behavior in daily life versus in a tourism context, and about the moderating role of sport event attendees' characteristics in understanding pro-environmental behavior would assist in designing more effective environmental campaigns in a sport event tourism context.

Conceptual Model

This study empirically tests the effects of psychological constructs of environmental behavior (i.e., personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, gain goals, perceived behavioral difficulty) on sport event attendees' pro-environmental behavior in their daily lives and in a tourism setting. It also tests whether consistency/inconsistency of environmental behavior between daily life and the tourism setting is affected by event attendees' characteristics (i.e., event attendee perceived destination environmental responsibility, event attendee types, recreation involvement, and experience-use

history). This study proposes a conceptual model to show the relationships between key variables (see Figure 1).

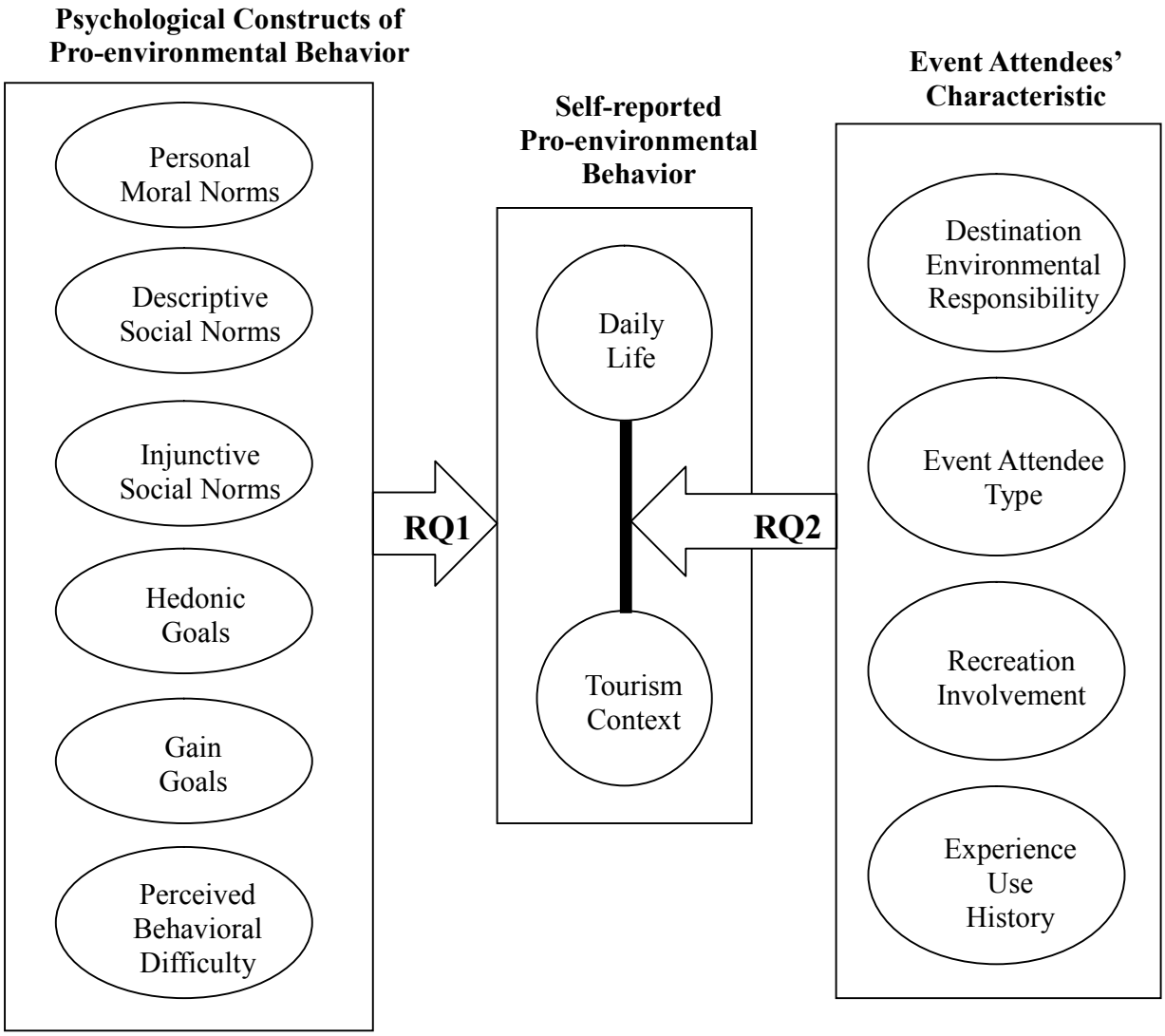

Figure 1 Conceptual model

Research Questions and Hypotheses

The following two research questions (RQ) and 17 hypotheses (H) are developed:

RQ1. Do the predictive roles of psychological constructs of environmental behavior (i.e., *personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, gain goals, and perceived behavioral difficulty*) differ in predicting sport event attendee's pro-environmental behavior in daily life versus in the context of sport event tourism?"

H1.1 Sport event attendees who have higher level of *personal moral norms* (H1.1a), *descriptive social norms* (H1.1b), *injunctive social norms* (H1.1c), *hedonic goals* (H1.1d), *gain goals* (H1.1e), and have a lower level of *perceived behavioral difficulty* (H1.1f) show a significantly higher level of engagement in pro-environmental behavior in daily life.

H1.2. Sport event attendees who have a higher level of *personal moral norms* (H1.2a), *descriptive social norms* (H1.2b), *injunctive social norms* (H1.2c), *hedonic goals* (H1.2d), *gain goals* (H1.2e), and have a lower level of *perceived behavioral difficulty* (H1.2f) show a significantly higher level of engagement in pro-environmental behavior in an event setting.

RQ2. Are sport event attendee's differences in pro-environmental behavior between in daily life and in an event setting affected by the event attendees' characteristics (i.e., *event attendee perceived destination environmental responsibility, event attendee types, recreation involvement, and experience-use history*)?

H2.1 Sport event attendees' engagement in pro-environmental behavior decreases in an event setting compared to in daily life setting.

H2.2. Degree of decrease in sport event attendees' pro-environmental behavior from daily life to an event setting is different depending on the level of *event attendees perceived destination environmental responsibility*.

H2.3. Degree of decrease in sport event attendees' pro-environmental behavior from daily life to an event setting is different depending on *event attendee types*.

H2.4. Degree of decrease in sport event attendees' pro-environmental behavior from daily life to an event setting is different depending on the level of *event attendee' recreation involvement.*

H2.5. Degree of decrease in sport event attendees' pro-environmental behavior from daily life to an event setting is different depending on *event attendee' experience-use history.*

Definitions of Terms

The following terms are defined to clarify their use in this study.

Sport event tourism: A sub-set of tourism at the nexus of sport tourism and event tourism (Jago & Fredline, 2004), where sport tourism can be defined as leisure-based travel that takes individuals temporarily outside of their home communities to participate in physical activities, to watch physical activities, or to venerate attractions associated with physical activities (Gibson,

1998), and event tourism incorporates tourism-oriented events including all planned events such as special events, hallmark events, mega-events, and specific types of events (Getz, 2008).

Pro-environmental behavior: environmental behavior that changes the availability of materials or energy from the environment or alters the structure and dynamics of ecosystems or the biosphere in environmentally responsible way (Stern, 2000).

Personal moral norms: An individual's sense of personal moral obligation to engage in pro-environmental behavior (Schwartz, 1977).

Descriptive Social Norms: An individual's perceptions about what others actually do (Cialdini, Reno, & Kallgren, 1990).

Injunctive social norms: An individual's perceptions about what others approve of doing (Cialdini, Reno, & Kallgren, 1990).

Hedonic goals: An individual's goals that promise to improve the way one feels in a particular situation (e.g., enjoyment) (Lindenberg & Steg, 2007).

Gain goals: An individual's goals that promise to increase ones' personal resources (e.g., saving cost) (Lindenberg & Steg, 2007).

Perceived behavioral difficulty: An individuals' perceived amount of effort required to perform the behavior (Kollmuss & Agyeman, 2002).

Destination environmental responsibility: A set of practices that a destination incorporates environmental sustainability into its management and operations (Laing & Frost, 2010).

Tourist: Individual travelers who are not locals or, those who are neither host community nor local residents in the vicinity of the destination.

Recreation involvement: The degree to which an individual is psychologically engaged in a particular recreation activity (Kyle et al., 2006).

Experience-use history: The amount of total experience a recreationist has within a particular recreational activity or setting (Hammitt & McDonald, 1983).

Delimitations

This study is delimited to the following:

1. Study participants are sport event attendees who are tailgaters at one or more of the first three MSU football games in fall 2013. As this study is conducted only on the first three games during the season, participants of this study would not be representative of all tailgaters at MSU home football games throughout the season.
2. Study participants are intercepted by survey administrators during the tailgating period prior to the games. Those event attendees who are not intercepted or do not agree on participating in the study are excluded in this study. This would limit examining the potential difference between those who participate in the study and those who do not.
3. On-site surveys are conducted throughout all tailgating areas on MSU campus, except the most densely student-populated tailgating area, where administering on-site survey is challenging. In this zone, students are densely packed and listen to loud music, and frequently involved in consuming large amounts of alcoholic beverages. Due to these factors that created some risk for survey administrators, it is judged that this set of event attendees are not appropriate for hypothesis testing by conducting on-site survey. Thus, this study does not include event attendees who participate in tailgating in the student populated area. This limits generalizability of the study findings into whole tailgating population.

4. Pro-environmental behavior in this study includes recycle behaviors with specific materials, which is included in the recycling scheme developed by the MSU Office of Campus Sustainability. Recycling behavior is comparable behavior between daily life and a tourism context, yet recycling behavior is one of categories of pro-environmental behavior. Findings of this study are delimited to recycling behavior, which would be different from other types of pro-environmental behavior.
5. Pro-environmental behavior in daily life is delimited only to the behavior at home. Pro-environmental behavior in the workplace or at school would be considered daily life, yet would not be same as the behavior at home.

Sport event tourism clearly generates positive social and economic benefits however negative environmental impacts are also present. To minimize such negative environmental impacts, event destinations have implemented campaigns to motivate sport event attendees to engage in pro-environmental behavior. However, it is challenging to mobilize individuals' environmental concerns and transform them into action while they are travelling or attending events. The following chapter describes literature relevant to sport event tourism and the theoretical background of pro-environmental behavior to inform the conceptual model of this study.

CHAPTER 2

LITERATURE REVIEW

This chapter includes the literature review under the following sections: (1) Sport Event Tourism; (2) Pro-environmental Behavior and Underlying Psychological Constructs and (3) Difference of Environmental Behavior in Daily Life versus Tourism Context.

Sport Event Tourism

This section begins by defining key terms such as tourism, sport, event tourism, and sport tourism, and then narrows down to the context for this research, and sport event tourism.

Tourism Definitions

Defining tourists or tourism is a difficult proposition. Dissimilar definitions have been found in a variety of literature, with inconsistencies among the practitioners. Throughout the definition criteria, distance traveled is most often used to identify tourists. In the United States, the National Tourism Resources Review Commission (1973) defined a tourist as one who travels away from home for a distance of at least 50 miles (one way) for business, pleasure, personal affairs, or any other purpose except to commute to work, whether he or she stays overnight or returns the same day. Although distance traveled seems to be the dominant determinant of a tourist, the mileage of the distance is debatable, as the ranges differ when destination marketing organizations formulate the definition (Masberg, 1998). McIntosh, Goeldner and Ritchie (1995) took a more systems-based approach to understanding the tourist and tourism. They defined tourism as "the sum of phenomena and relationships arising from the interaction of tourists,

business supplies, host governments, and host communities in the process of attracting and hosting these tourists and other visitors" (p.10). This definition includes the potential impacts that tourists may have upon the host community, which, until recently, was a neglected component of the definition process. A number of authors have reached a consensus on how to approach to understand tourism: that it is necessary to view tourism as an integrated system of multiple components, ranging from the tourists themselves, to the tourism industry, the host community or destination, and the impacts upon both the destination area and the tourists (e.g., Gunn, 1974; Leiper, 1979). Keeping in mind the multiple components to understand tourism, subjects of this study include tourists, who specifically are identified followed by the local Convention and Visitors' Bureau's (CVB) definition. That is, tourists refer to individual travelers who are ***NOT*** residents in the vicinity of the destination (i.e., non-residents of the Greater Lansing area defined as Eaton, Clinton, or Ingham County).

Sport Definitions

There is considerable controversy over efforts to define sport. Some insist that an all-encompassing definition is impossible because sport is a socially constructed activity that has varied across historical eras, societies, and cultures, whereas others hold that sport has specific and timeless characteristics, such as being goal-oriented, competitive and a forum for the creation of winners and losers (Paddick, 1975). Among the various definitions, Coakley (2001) provided a fairly typical working definition of organized sport: 'Sport is an institutionalized competitive activity that involves vigorous physical exertion or the use of relatively complex skills by individuals whose participation is motivated by a combination of intrinsic and extrinsic factors' (p. 8). Yet, this view may be unnecessarily rigid, and the definition does not address the

idea that sporting activities may be either formal or recreational. There is sport-as-competition, which is tightly structured, with goal-oriented matches and tournaments; there is also sport-as-play, which is comprised of recreational sporting activities (Gruneau, 1980). In terms of sport tourism, sport tourists include those who participate in sports to play for recreational purposes, those who are spectators at games, and those who attend sport events.

Event Tourism

Event tourism is generally recognized as being inclusive of all planned events in an integrated approach to tourism (Getz, 2008). Yet, the term 'event tourism' was not widely used until the late 1900s; rather, it was normal to speak of special events, hallmark events, mega-events, and specific types of events. In the 1960s and 1970s, the events sector was not recognized as an area of separate study within leisure, recreation, or tourism. Only limited attention was paid to how hallmark events could combat the seasonality of tourism demand (e.g., Ritchie & Beliveau, 1974) in this era. In the 1980s and 1990s, research on event tourism and event management expanded dramatically (Getz, 1991; Hall, 1992). A number of studies in event tourism have advanced the research by helping us to understand motivation among event tourists (e.g., Crompton & McKay, 1997; Uysal, Gahan, Martin, 1993), the importance of events in generating tourism demand (Bos, 1994), and the economic impacts of event tourism (e.g., Crompton & McKay, 1994; Gartner & Holecek, 1983; Ritchie, 1984). Although the social and cultural impacts of event tourism were addressed in this era (e.g., Hall, 1989; Ritchie, 1984), most of the attention was focused on the economic dimensions. In the 2000s, scholars sought more balance in understanding event tourism, including the positive and negative economic, social, and environmental dimensions.

Although not all events need to be tourism-oriented, and there is no real justification for considering event tourism as a separate field of studies (Getz, 2008), it is necessary to understand the interrelationships between tourism and event management for assisting professional practices, as well as between tourism studies and event studies for spurring theoretical advancement. Getz (2008) illustrated the set of interrelationships that occur at the nexus of tourism and event studies (see Figure 2), and specifically categorized event tourism based on event types: i) business events and tourism; ii) sport events and tourism; and iii) festivals and other cultural events and tourism.

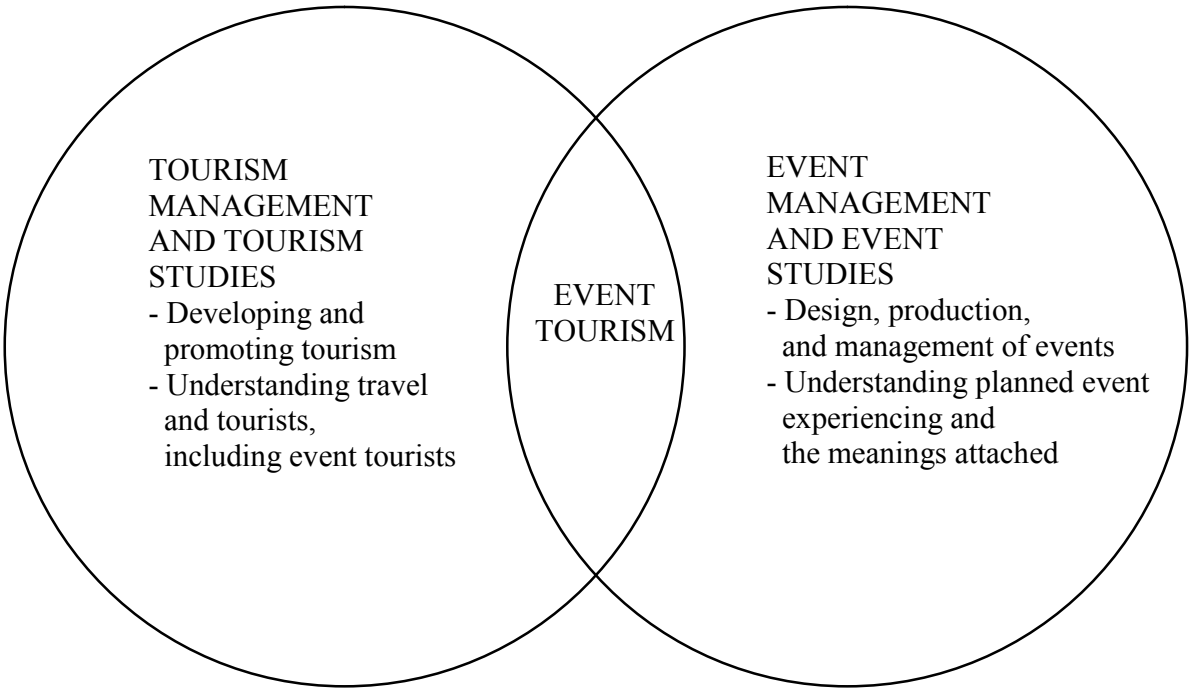

Figure 2 Event tourism at the nexus of tourism and event studies
(Source: Getz, 2008)

Sport Tourism

Sport tourism refers to "all forms of active (e.g., scuba diving and skiing) and passive (e.g., attending sporting events and visiting sports museums) involvement in sporting activity, participated in causally or in an organized way for non-commercial or business/commercial reasons that necessitate travel away from home and work locality (Standevan & DeKnop, 1999, p.12)." Gibson (1998) defined sport tourism in more travel-related terms: "leisure-based travel that takes individuals temporarily outside of their home communities to participate in physical activities, to watch physical activities, or to venerate attractions associated with physical activities (p. 49)." Researchers proposed a typology of sport tourism that can be used to provide a clearer understanding of the term sport event tourism. Gammon and Robinson (1997) classified sport tourists as either 'hard' or 'soft' participants. A 'hard' sport tourist is a person who travels for either active or passive involvement in a competitive sport; hence, their prime motivation for travel is sport. The 'soft' sport tourist is someone who is primarily involved in a recreation or leisure purpose, rather than in competitive activity (Gammon & Robinson, 1997). Gibson (1998) suggested three categories of sport tourism: active sport tourism (i.e., travelling to take part in a sport); sport event tourism (i.e., travelling to watch a sporting event); and nostalgia sport tourism (i.e., visiting sports museums, famous sports venues, and sports themed cruises).

Sport Event Tourism

The concepts of sport tourism and event tourism have become more prominent in the last few years, both as an academic field of study and as an increasingly popular tourism product (Gibson, 1998). Yet, there are still inconsistencies in defining sport event tourism.

Researchers in such fields as sports management, event management, and tourism management, who have legitimate claims to the subject areas, have not bridged the artificial academic divide between these different disciplines frequently (Gibson, 1998; Getz, 1989). Consequently, there are distinct communities of discourse. Some researchers reviewed planned events and tourism as the origins and evolution of event tourism, and saw sport event tourism as a sub-category of event tourism (e.g. Getz, 1989; 2008). Other researchers viewed sport-related activity and tourism as the nexus of sport tourism, and saw sport event tourism as a sub-category of sport tourism (e.g., Gibson, 1998). Recently, Deery, Jago, and Fredline (2004) questioned whether sport tourism and event tourism are the same things. Their conceptualization showed sport tourism as being at the nexus of event tourism and sports, with both sport tourism and event tourism being sub-sets of tourism in general. This study follows this definition of sport event tourism.

Pro-environmental Behavior and Underlying Psychological Constructs

Pro-environmental Behavior

Human behavior is influenced by both direct and indirect controls. Direct controls regulate individual behavior and specify punishment if regulations are not followed, whereas indirect controls guide individuals to choose certain behaviors voluntarily. In the context of tourism, two strategies—direct and indirect management— may be applied to manage inappropriate tourist behavior at destinations. Direct management strategies include enforcing regulations, physically closing areas, and implementing permit-based systems and fees. Indirect management strategies include persuasive messages, interpretive displays and presentations,

environmental education, and informational campaigns. Gramann, Christensen, and Vander Stoep (1992) stated that direct controls are more appropriate than indirect controls if tourist visits result in critical damage to cultural or natural resources, or endanger the personal safety of tourists. In contrast, indirect controls may be more effective if tourist-induced damages can be reduced by persuading them to follow desirable or appropriate behaviors.

There is a growing effort among tourism destinations to implement environmental practices and promote pro-environmental behavior among tourists. Although individuals may have positive environmental attitudes, and engage in pro-environmental behavior in their everyday lives, they may not or are less likely to engage in such behavior while they are traveling (e.g., Miao & Wei, 2013). Understanding why some individuals choose to engage in pro-environmental behavior and then comparing this across contextual situations—living daily life vs. being a tourist—is critical to destination managers' efforts to minimize negative environmental impacts. This section explores existing theories and models of pro-environmental behavior, and identifies factors influencing such behavior.

Personal Moral Norms: Norm Activation Model and Value-Belief-Norm Theory

Among various theories for explaining pro-environmental behavior, Schwartz's (1977) Norm Activation Model (NAM), and Stern's (2000) Value-Belief-Norm theory have been studied extensively to explain various types of pro-environmental behavior. Originally, NAM was developed to explain altruistic behavior, and was later applied in an environmental context (Schwartz, 1977). According to NAM, behavior occurs in response to personal moral norms or to feeling morally obligated. Personal moral norms are activated when individuals are aware that certain behaviors may cause adverse consequences to others or to the environment (i.e.,

Awareness of Consequences: AC) and when they think they cannot avert personal responsibility (i.e., Ascription of Responsibility: AR).

The NAM was later extended into the Value-Belief-Norm (VBN). Stern and his colleagues (Stern, 2000; Stern, Dietz, Abel, Guagnano, & Kalof, 1999) proposed the VBN theory, which links Schwartz's (1992, 1994) value theory, Dunlap's and Van Liere's (1978) New Environmental Paradigm (NEP) perspective, and Schwartz's (1977) Norm-Activation Model through a causal chain of variables—personal values, NEP, AC and AR beliefs, and personal moral norms—leading to behaviors (see Figure 3).

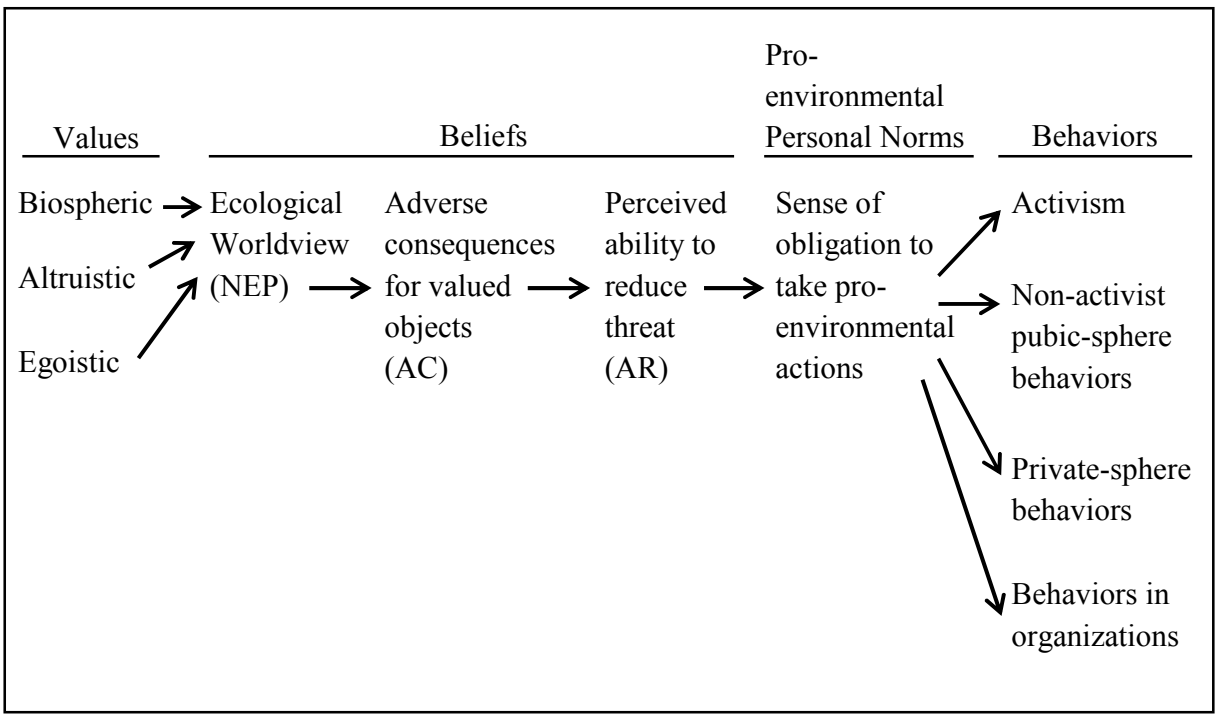

Figure 3 Schematic representation of variables in the VBN theory
(Source: Stern, 2000)

Both NAM and VBN theories focus on personal moral norms or, a sense of moral obligation to explain pro-environmental behavior, which require individuals to restrain their egoistic tendencies in order to benefit others and the environment. An extensive literature shows the important roles of personal moral norms in understanding pro-environmental behavior. For example, Nordlund and Garvill (2002) reported on the significant roles played by personal moral norms in predicting several types of pro-environmental behavior, including recycling/reusing, environmentally responsible consumption, energy conservation, and transportation behavior. Other research has also supported the applicability of the theory/model and the important roles of moral norms in explaining pro-environmental behaviors such as household energy saving (Black et al., 1985), and curbside recycling (Guagnano, Stern, & Dietz 1995). Based on the understanding gained from the theory, the model, and empirical studies, it is expected that personal moral norms have a positive effect on pro-environmental behavior.

Descriptive and Injunctive Social Norms: Social Norm Approach

Researchers have studied the role of specific environmental attitudes, or personal moral norms, in inducing pro-environmental behavior based on the notion that people may become environmentally friendly if they are concerned about others (Schwartz, 1977) or about ecosystems (Dunlap & Van Liere, 1978). Research showed that such environment-related factors (e.g., personal moral norms) have significant effects on pro-environmental behavior. Yet, considering only environment-related factors may limit understanding of pro-environmental behavior. Another potential influential factor is social norms.

Individuals have various reasons or motives for engaging in pro-environmental behavior.

The Social Norm Approach (SNA; Perkins & Berkowitz, 1986) helps to explain how the perceptions about what we think others believe and do influences each of us as an individual. The norms in VBN theory differ from the norms in SNA. The former, personal moral norms, refers to a feeling of moral obligation, whereas the latter, social norms, refers to perceptions about others' moral code and behaviors. Researchers discriminate between the "is" and the "ought" meaning of social norms, which correspond to descriptive and injunctive norms (Cialdini, Reno, & Kallgren, 1990; Cialdini et al., 2006). A descriptive norm refers to a person's beliefs about what other people actually do. An injunctive norm refers to a person's beliefs about what other people approve of doing. This distinction becomes crucial when developing norm-based interventions to change behavior. When communicators seek to persuade an audience to behave according to existing norms, and want their campaigns to be successful, they must recognize how different types of norms affect behavior in different ways.

SNA describes how the dominant or most typical attitudes and behaviors guide group members' actions. Social norms can be powerful agents of choosing behavior as individuals have strong tendencies to conform to group patterns and expectations. For example, Goldstein, Cialdini, and Griskevicius (2008) demonstrated that the message employing social norms (e.g., "the majority of guests reuse their towels") had more effect on hotel guests' behavior than using the standard environmental message (e.g., "help save the environment"). Accordingly, it is expected that social norms have a positive effect on pro-environmental behavior to a significant degree.

Hedonic and Gain Goals: Goal-framing Theory

Kollmuss and Agyeman (2002) pointed out that although many researchers have explored the direct and indirect influential factors of pro-environmental behavior, there has been a limited discussion of how individuals' personal desires, such as comfort, may play an important role in shaping pro-environmental behavior. Several studies support the importance of non-environmental factors, in addition to environment-related factors, in affecting pro-environmental behavior.

Recently, Lindenberg and Steg (2007) proposed a goal-framing theory, and explained that individuals' decisions about pro-environmental behavior are influenced by three different motivational goal frames: normative (i.e., to act appropriately), gain (i.e., to guard and improve one's resources), and hedonistic (i.e., to feel better right now). The goal-framing theory explains the significance of each type of motivational goal, and how it differs across situations and individuals. For example, in financially or contextually difficult situations, the effects of normative motivations (e.g., personal moral norms) on behavior become weak, so individuals may not choose pro-environmental behavior.

Pro-environmental behavior is probably best viewed as a mixture of self-interest and a concern for whole ecosystems (Bamberg & Möser, 2007). Researchers who view pro-environmental behavior primarily as pro-socially or pro-environmentally motivated behavior often use the Norm Activation Model (Schwartz, 1977) or the Value-Belief-Norm theory (Stern, 2000). However, researchers who consider multiple motives for engaging in pro-environmental behavior (e.g., Lindenberg & Steg, 2007) suggest that gain and hedonic goals are additional influencing factors. This is particularly important when examining and comparing individuals' pro-environmental behavior at daily life versus event settings. When individuals are tourists, they

are escaping their normal lives and seeking enjoyment. Then, hedonic motives and related behavior is more likely to occur when one is on vacation than in normal life.

Perceived Behavioral Difficulty: Contextual Influence

Researchers agree that environmental attitudes have a positive effect on pro-environmental behavior (e.g., Stern [2000] Value-Belief-Norm theory). Yet, researchers also found an environmental attitude-behavior gap (e.g., Lindenberg and & Steg's [2007] goal-framing theory). Findings from previous studies suggest that the strength of correlations between environmental attitudes and behavior vary, depending on contextual effects such as situational constraints (e.g., Diekmann & Preisendörfer, 2003).

Ajzen's (1985) Theory of Planned Behavior (TPB), which is one of the most widely studied models for explaining individuals' behavior, argued that situational variables (i.e., perceived behavioral control) are additional noteworthy behavioral determinants. Kollmuss and Agyeman (2002) discussed a low/high cost model, and claimed that people choose pro-environmental behavior consistent with their environmental attitude only when demands for such behavior cost less. In this context, cost refers to economics, time, effort, and comfort, which individuals value when taking an action. Similarly, Corraliza and Berenguer (2000) demonstrated that a strong feeling of moral obligation determines pro-environmental behavior only when environmental attitude does not conflict with other favorable situations. In addition, Nilsson, von Borgstede, and Biel (2004) showed that willingness to accept climate change policy (e.g., taxes and charges to reduce the use of non-environmentally friendly alternatives) is predicted by personal moral norms in the public sector, but not in the private sector. This is

because personal benefits, not environmental concerns, are the dominant private sector motivation of behavior.

When comparing pro-environmental behavior in daily life versus in event tourism setting, it is critical to taking contextual influential factor into account. Dolnicar (2010) identified two indicators—income and moral norms—which tourism destinations can use to identify potential tourists who will consistently engage in pro-environmental behavior while travelling. Yet, at the same time, the author admitted that there would be different contextual influences between being at home and travelling that were not measured in the study, yet would highly be associated with the result. At home, individuals can arrange conditions in ways that enable them to engage in pro-environmental behavior if they so choose. On the other hand, at a tourism destination, conditions of infrastructure are beyond their control. That is, behavioral control or perceived behavioral difficulty should be controlled for, as discussed in earlier sections, if research aims to explain the inconsistencies in pro-environmental behavior between these two settings. Accordingly, this study includes perceived behavioral difficulty in daily life and event setting in understanding pro-environmental behavior in each of the settings.

Difference of Environmental Behavior in Daily Life and Tourism Contexts

A few studies have reported on the differences in pro-environmental behavior between daily-life and tourism contexts. Dolnicar (2010) showed that a large proportion of individuals (about 70%) behave in an environmentally responsible way at home, and also behave in an environmentally responsible way on vacation. Other researcher yet indicated that pro-environmental behavior is more pervasive in the daily-life context, compared to the tourism context (e.g., Dolnicar, 2010; Miao & Wei, 2013). While on-going research is being conducted, a

question unanswered is why some individuals engage in pro-environmental behavior consistent with their positive environmental attitude, even when constraints become higher, and others do not? In other words, under which conditions or event attendees' characteristics, do gaps of pro-environmental behavior between at home and when travelling become smaller or larger? The following section discusses potential moderating factors in the difference of pro-environmental behaviors between two settings.

Sport Event Attendees

One potential factor which is associated with the difference of individuals' environmental behavior between in daily life and event setting is event attendee types. Although all tailgaters are sport event attendees, there are different sub-types of event attendees. Specifically in this study context, the MSU campus, as a sport event tourism destination during football season, invites current MSU community members, local residents, and tourists. These sub-types of event attendees differ in their traveling behavior, and in experiencing out-of-routine activities at event destinations. Accordingly, it is expected that the degree of behavior change from daily life to event setting differs depending on sub-types of event attendees.

Alternatively, however, it may not be necessary different in terms of the nature of the experience or, experiencing a temporary difference of everyday routines, among sub-types of event attendees. The meanings attached to events and to event tourism experiences are important components in understanding sport event attendees. A starting point can be the concept of liminality, or shared "ritual process" (Turner, 1969). The liminality aspect of the ritual process, as it is often related to tourism, has been viewed as depicting an experience in tourism whereby the usual order of things is changed. Specifically, Jafari (1987) saw "tourist culture" as being

shared by people who willingly travel to, or enter into, an event-specific place for a defined period of time, to engage in activities that are out of the ordinary, and to have experiences that transcend the ordinary. Similarly, Cohen (1979) and Smith (1978) emphasized an understanding of tourists based on their experience that is a temporary difference of everyday activities, which is beyond the definitions of tourism by the outside observer. Therefore, behavioral change from daily life to sport event setting may or may not be influenced by sub-types of event attendees.

Destination Environmental Responsibility

Another influential factor that helps to explain behavioral consistencies and inconsistencies between daily life and an event setting is event attendee perceived destination environmental responsibility. There is growing recognition of the need for environmental sustainability at an event destination, and in destinations' environmental practices in greening events, yet there is a lack in the event literature about whether destinations' environmental responsibility contribute to encouraging event attendees to engage in pro-environmental behavior. Sport event tourism has unique imperatives in the realm of environmental responsibility, given that sport facilities and places are visited by large numbers of people in a confined space over a relatively small time period (Trendafilova, Babiak, & Heinze, 2013). The issue of destination environmental responsibility is linked to greater awareness of environmental operations such as waste management or the installation of energy efficient facilities, which can make a substantial positive impact on the environment. However, developing or organizing a green event involves more than just implementing such operational systems. Environmental operations that have been adopted by a destination can also be used to promote event attendees' pro-environmental behavior, if the information that ultimately fits with the green theme of the event is shared

among event attendees. In this sense, researchers emphasize that destinations' environmental responsibility should be engage with the local community, tourists, and other stakeholder groups (Laing & Frost, 2010). Not all event goers attending green events are committed to environmental behavior in a similar scope. There is a need to examine whether event attendees' perceptions about destination environmental responsibility affect the gap between how green they are at home and how green they are at an event.

Recreation Involvement

Event attendees differ in the degree to which an individual is engaged in a particular recreation activity. Researchers in tourism and leisure studies have conceptualized recreationists' psychological connection of a particular recreation activity as recreation involvement (Kyle et al., 2006; Lee, 2011). To be specific, recreation involvement refers to an enduring involvement in an activity that is considered personally relevant, to the extent that a recreationist perceives it to be self-related or in some way instrumental in achieving their personal goals (Kyle et al., 2006). Recreation involvement has been applied to understanding various recreational activities such as camping (e.g., McIntyre & Pigram, 1992), and sports (e.g., Wiley, Shaw, & Havitz, 2000). Tourism and leisure studies have also investigated the outcomes of recreation involvement. For example, studies showed that a high level of recreation involvement by recreationists increases sensitivity to their assessment of a recreational experience (e.g., Gross & Brown, 2006); increases attachment to specific settings (Kyle, Graefe, Manning, & Bacon, 2003); and increases the likelihood of behavioral changes (Dawson, Havitz, & Scott, 2011). Together, the above studies addressed recreation involvement as an important factor to consider when one aims to understand recreationists' behavior.

Although there is little empirical research available for examining the relationship between recreation involvement and the pro-environmental behavior of recreationists, several leisure and tourism studies have provided insights on this potential relationship. For example, Lee (2011) showed that a high level of recreation involvement by recreationists visiting wetlands increased individuals' conservation commitment, such as a willingness to donate money to environmental organizations, and also increases the likelihood of engaging in pro-environmental behavior in their daily life, such as carpooling. Although Lee's (2011) study measured generic behaviors rather than pro-environmental behaviors specifically related to a recreational activity or a destination, the findings of this study imply that differences or similarities in pro-environmental behavior at home and at a destination are related to recreation involvement. Sport event attendees differ in the degree of their recreation involvement of a particular recreational activity (i.e., tailgating), and it is expected that recreation involvement can help to explain the gap of pro-environmental behaviors between at home and at tourism contexts.

Experience-Use History

Experience-use history is expected to play a moderating role in explaining the behavioral difference between in daily life and in event setting among sport event attendees. Past experience is defined as the sum of accumulated experience a recreationist has within a particular recreational activity or setting (Hammitt & McDonald, 1983; Virden, 1992). Researchers have examined past experiences with a recreation setting by implying the terminology, experience-use history, and measuring it, for example, through the total number of previous visits to an area (Hammitt & McDonald, 1983; Ibitayo & Virden, 1996). Several researchers addressed the influences of past experiences on an individual recreationist's present travel decisions (Williams,

Schreyer, & Knopf, 1990); perceptions about the recreation environment (Hammitt & McDonald, 1983); perceptions about the recreationists' depreciative behavior (Ibitayo & Virden, 1996; White, Virden, & van Riper, 2008); and actual pro-environmental behavior at the destination (Ong & Musa, 2012). To be specific, Hammitt and McDonald (1983) suggested that past experiences influence how recreationists perceive a recreation environment. White et al. (2008) showed the effect of a visitor's prior experiences with the setting on their perceptions of environmental impacts on the recreation area. Ibitayo and Virden (1996) segmented park visitors into high- and low-experienced groups, based on the number of past park visits, and showed that the level of past experience was related to the perception of depreciative behaviors such as littering, water pollution, noise, and vandalism. More recently, Ong & Musa (2012) showed that past experience was the most important factor in explaining scuba divers' responsible underwater behavior. Experienced divers were more likely to engage in responsible behavior, such as avoiding touching and standing on coral, and inspecting regulator readings, than inexperienced divers. Based on the existing literature discussed above, it is expected that experience-use history can additionally help to explain the gap of pro-environmental behaviors between at home and at tourism contexts.

CHAPTER 3

METHODS

This study assesses whether and how sport event attendees are motivated to engage in pro-environmental behaviors differently in their daily lives, compared with at a sport event tourism setting. Specifically, this study investigates two research questions: (1) "Do predictive roles of psychological constructs of environmental behavior (i.e., *personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, gain goals, and perceived behavioral difficulty*) differ in predicting sport event attendee's pro-environmental behavior in daily life versus in the context of sport event tourism?" and (2) Are sport event attendee's differences in pro-environmental behavior between in daily life and in an event setting affected by the event attendees' characteristics (i.e., *event attendee perceived destination environmental responsibility, event attendee types, recreation involvement, and experience-use history*)?

The study employed a quantitative research method approach. On-site intercept surveys were administered to target sport event attendees, or tailgaters, followed by online and mail follow-up surveys. Self-administered surveys were conducted to measure tailgaters' demographic and tailgating characteristics, underlying psychological constructs of environmental behaviors, and self-reported pro-environmental behavior in daily life and in an event setting. A cross-sectional survey design was used to examine the extent to which psychological constructs predict pro-environmental behavior at home and at event settings. Statistical analyses were employed to investigate the research questions and hypotheses.

This chapter includes following sections: (1) Study Site and Study Participants; (2) Research Design; (3) Survey Instrument Development; and (4) Preparation for Data Analysis.

Study Site and Study Participants

Sport Event Tourism Destination: Michigan State University

Collegiate football games in the United States are a growing sector of sport event tourism. College campuses, as sport event tourism destinations, are visited by a huge number of fans on football game days. Every fall, Michigan State University attracts large numbers of tailgaters from across Michigan and beyond. According to the Michigan State Athletics Department (2013), 63,831 season tickets were sold for the 2012 football season. MSU has ranked among the NCAA's top 25 in football attendance over the last 56 years. In 2011, MSU ranked 18th in the NCAA in total football attendance, as 518,545 fans went through the turnstiles for seven home games (NCAA, 2012).

While these sport events clearly generate positive social and economic benefits, the Environmental Protection Agency (EPA) estimated that an average college football game produces 50 to 100 tons of waste, and releases 188 to 376 metric tons of carbon dioxide into the environment (EPA, 2012). In response to this negative environmental consequence, MSU adopted the EPA-implemented 'Game Day Challenge' initiative to promote a 'Zero Waste' program on game days. In an effort to reduce the amount of waste accumulated during football games, MSU makes an effort to motivate football fans to engage in pro-environmental behavior while attending sporting events (i.e., watching games and participating in tailgating). MSU's environmental effort has been extended to make recycling opportunities accessible throughout the campus on event days.

Study Participants: Football Tailgaters

This study sought to compare sport event attendees' pro-environmental behavior in daily life and in an event setting, which may provoke two different underlying mechanisms of such behavior. "Sport event attendees" refers to tailgaters at collegiate football games. Study participants are tailgaters at MSU football games. Unlike spectators who pass through a controlled entrance at the stadium, there is no controlled entrance for tailgaters. Also, not all spectators participate in tailgating activities, and vice versa. In addition, there has been no previous data reported for the study area on tailgaters' profiles, nor, to the researcher's knowledge, for the host areas of U.S. collegiate football games. For this reason, it was challenging to draw a random sample from the tailgater population. To recruit a wide range of study participants, a systematic sampling with a spatial zoning plan was developed. The following section describes the research design, including the sampling method and sample frame.

Research Design

Sampling Days

An on-site sampling strategy was employed for the first three MSU home game days in the fall of 2013 (August 30, September 7, and 14) to target tailgaters. Three sampling days were chosen within the study scope (e.g., budgetary and time constraints). On each game day, sampling activity started one hour after the tailgating lots opened, which allowed tailgaters to set-up their tents and other tailgating facilities before being sampled. Sampling activity was discontinued before the game started. Table 1 shows the sampling schedule for the three game

days; specific descriptions of the sampling and sample frame are presented. To comply with MSU and federal regulations, Institutional Review Board (IRB) approval was obtained for this research (see Appendix A for the IRB exempt letter).

Table 1 Sampling schedule

	Day 1 MSU vs. Western Michigan	**Day 2** MSU vs. South Florida	**Day 3** MSU vs. Youngstown State
Date	Aug. 30 (Fri.)	Sep. 7 (Sat.)	Sep. 14 (Sat.)
Tailgate lots open	3:00 p.m.	7:00 a.m.	9:00 a.m.
Kick-off time	8:00 p.m.	12:00 p.m.	2:00 p.m.
Sampling hours	4:00 p.m.-7:30 p.m. (3.5 hrs)	8:00 a.m.-11:30 p.m. (3.5 hrs)	10:00 a.m.-1:30 p.m. (3.5 hrs)

Systematic Sampling

As described in the 'Study Participants' section, it was impossible to identify the population of football tailgaters and draw a random sample, so a systematic sampling strategy was used, intercepting tailgaters on site. Tailgaters were contacted on an individual level, not at the group level, because individuals within the group were not considered to be homogeneous. Tailgaters were intercepted using systematic sampling procedures. The procedure was to start at a set location within a designated tailgating zone and request that the four closest adults complete a questionnaire. Once that was completed, to move a distance of five-footsteps, following a pre-set route, and again select the four closest adult tailgaters. The purpose of having the interval of five-footsteps was to move approximately five steps to the next group of tailgaters. At times,

more than five steps were necessary because sometimes tailgaters were farther apart due to large vehicles or other obstacles being in the path.

To further facilitate the systematic sampling activity, a sampling log-sheet (see Appendix B) was developed. This log-sheet was designed for survey administrators to record their sampling activity by following a time frame. Specifically, it was expected that each administrator would spend approximately five minutes at each data collection point, and one minute in approaching the next data collection point. Thus, 10 data collection points, or 10 cells on the log sheet, were expected per hour. At each data collection point, survey administrators compiled the number of completed on-site questionnaires and the number of rejections at each cell. This practice helped survey administrators continue targeting tailgaters in a systemic way.

Intercepted tailgaters were asked to complete a self-administered on-site questionnaire. Each of the on-site questionnaires had a unique survey ID number. Those who completed the on-site survey were automatically assigned a unique ID number, which was pre-printed by the researcher. This respondent ID number provided participants with confidentiality and a record of their participation, disconnected from their identity. If intercepted tailgaters refused to fill out the questionnaire, survey administrators thanked the person and moved to the neighboring tailgater. Survey administrators targeted tailgaters who appeared to be 18 years or older. Survey administrators confirmed the age of intercepted tailgaters if it was unclear that they were over 18. Upon completion of the on-site questionnaire, the participants' email or mailing address was requested for a follow-up online or mail survey. If intercepted tailgaters refused to participate in the follow-up, survey administrators noted the reason why (e.g., no interest, busy, etc.) if identifiable.

To administer the on-site survey, six paid survey administrators were recruited. To comply with MSU and federal regulations, all survey administrators completed IRB training. IRB approval for each survey administrator was obtained before contacting study participants. In addition, the survey administrators were informed about the study's background and purpose, and trained in the sampling procedures before conducting the on-site survey (see Appendix C for the 1st pre-meeting agenda for survey administrators). Pre-meetings were held before each sampling activity, and follow-up meetings were also called at the end of each sampling day to gather feedback from the survey administrators. On the first sampling day, the survey administrators introduced themselves and explained the research purpose to intercepted tailgaters. On the following sampling days, the survey administrators followed the same protocol, with the addition of confirming that the intercepted tailgaters had not been previously contacted. If they had, the survey administrators thanked the repeat-tailgaters and approached the next tailgaters.

Spatial Zoning Plan

The spatial zoning plan was incorporated with the systematic sampling procedure to obtain study participants from the entire population of tailgaters at the study site. Six zones were identified for sampling activities, with one of the six survey administrators assigned to each.

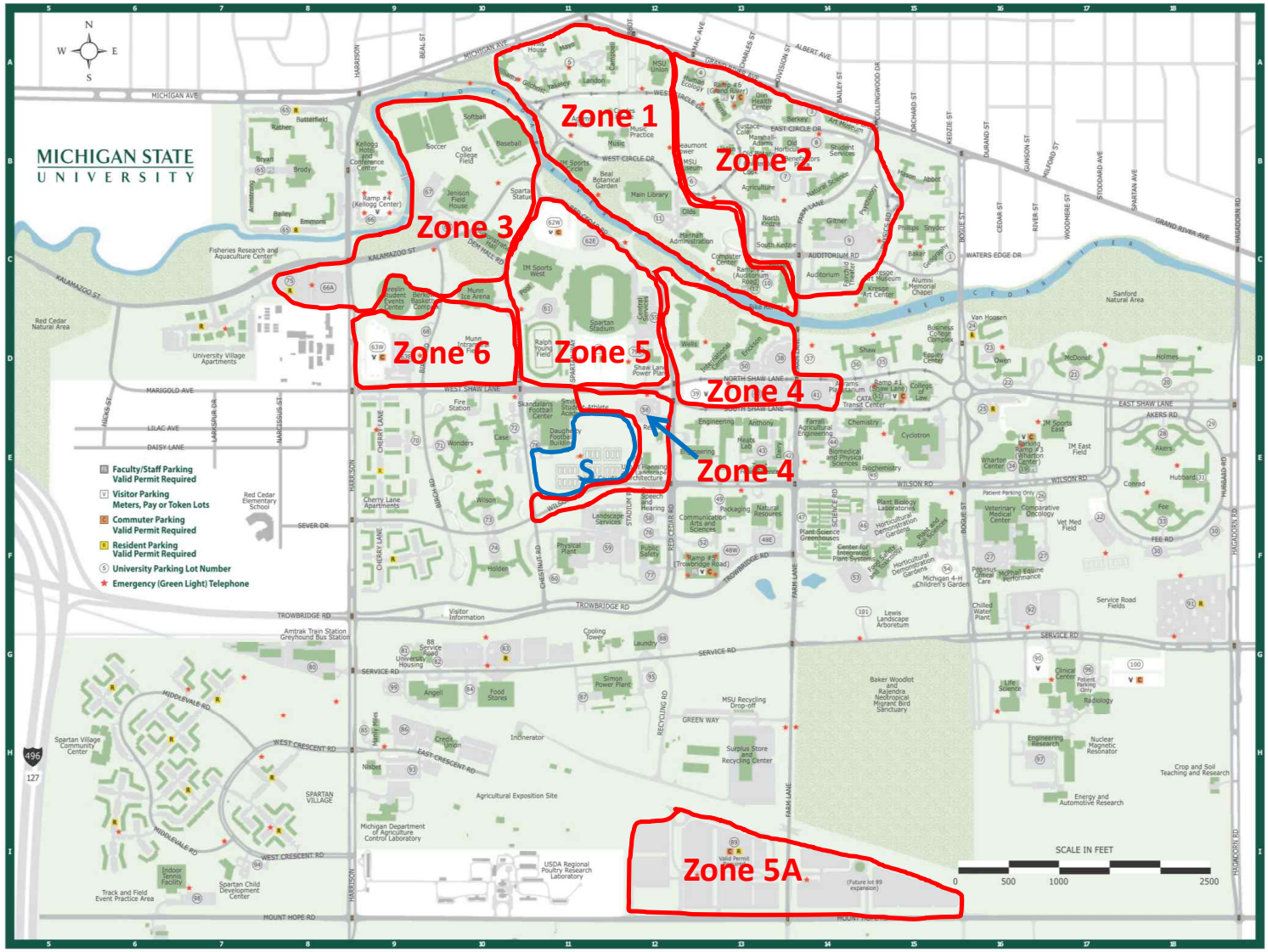

Figure 4 Sampling zone

On the first and second game days, on-site surveys were administered in Zones 1 through 6 (see in Figure 4). Zones 1 through 6 were identified based on observations from the previous year's football season (i.e., the 2012 season): tailgating locations were found throughout the campus, and they were also designated MSU tailgating environmental campaign sites. The researcher observed spatial patterns of tailgating activities at the study site during the 2012 football season. The researcher also consulted with staff from the MSU Office of Sustainability at the MSU Surplus Store & Recycling Center, which administered the recycling campaign entitled "Game Day Challenge" on a single football game day at MSU. On the campaign day, volunteers contacted individual tailgaters, provided information about MSU's recycling activity, and collected recyclable materials from tailgaters. Based on observations and opinions of personnel from the Office of Sustainability, sampling areas from Zones 1 through 6 were identified as areas where tailgaters were observed, and where the recycling campaign was conducted. On the third game day, on-site surveys were administered in Zones 1 through 6, excluding Zone 5 and adding Zone 5A (see Figure 4). Zone 5 was excluded because it was learned, after the second game day, that this zone was heavily populated by repeat tailgaters. As an alternative to Zone 5, a newly identified Zone 5A was added, which also had considerable tailgating activity. Accordingly, the six survey administrators were assigned into each of the six zones on the third game day.

Although the identified sampling zones covered the majority of the designated tailgating areas throughout the MSU campus, one tailgating area was excluded from the sampling activity. There was an area in the southern part of the campus (see zone S in the Figure 4). This zone was mainly populated with MSU students who were densely packed, often listening to loud music, and frequently involved in consuming large amounts of alcoholic beverages. Due to these factors,

which created some risk for survey administrators in addition to the fact that many of these students lived on campus, and were not just attending an event on campus, it was judged that this set of event attendees was not appropriate for testing the hypothesis. Therefore, the tailgating area populated mainly by MSU students was excluded from the sampling activity.

In each assigned zone, the survey administrator followed a pre-drawn sampling route, which was developed by the researcher. It helped survey administrators to target tailgaters evenly in the space within an assigned zone during the given sampling time frame. Survey administrators were requested to move forward by following a route. Sometimes, there were additional incoming tailgaters after a survey administrator had moved to the next data collection point. Yet, survey administrators were required to NOT go backwards. Survey administrators provided the actual routes they followed after completing the sampling activity. When a planned route within a zone was not fully covered during the first sampling day, the assigned survey administrator started the second game day sampling activity from where she/he stopped on the first sampling day.

Sample Size Determination

If the population variance is known, a commonly used formula for determining a sample size statistically is:

$$n = \frac{z^2 \cdot \sigma^2}{E^2}$$

where

n is the required sample size;

z is the z-value associated with the desired confidence interval;

σ^2 is the population variance; and

E is the maximum acceptable difference (maximum error) or margin of error that can also be used to refer to sampling error in general. However, because there was no information available about population variance for this study's population, the study determined the sample size based on other researchers' suggestions from their studies.

Researchers offered various approaches for deciding on the appropriate sample size. Some researchers generally suggested 100 to 150 as the minimum sample (Anderson & Gerbing, 1988), and 200 to 400 (Boomsma & Hoogland, 2001) as an acceptable sample size. Others specifically suggested a ratio of sample size to number of observed variables, ranging from 1:5 (Bentler & Chau, 1987) through 1:10 (Hair, Black, Babin, Anderson, & Tatham, 2006). This study used 35 items to assess the relationships between psychological constructs of environmental behavior and recycling behavior in daily life and event settings, and event attendees' characteristics (See the section on Survey Instrument Development for a description of the measurement items). According to the suggested ratio for the sample, a required sample size for this study would range between 175 (35 x 5) and 350 (35 x 10). Another approach to determine an appropriate sample size is to follow researchers' suggestions of a sample size for a specific analysis. One of the main analyses used in this study is exploratory factor analysis. Guadagnoli and Velicer (1988) suggested a minimum sample size of 150 for exploratory factor analysis, as long as item inter-correlations are reasonably strong. Another of the main analyses used in this study is multiple regression analysis. Tabachnick and Fidell (2007) suggested that the sample size for multiple regressions can be calculated by using the equation $N \geq 60 + 8m$ (where m is the number of independent variables). This study has six psychological constructs and three control variables as independent variables in multiple regression, thus a sample size of 150 is an acceptable sample size for regression analysis. Based on the aforementioned

approaches, this study expected to achieve a sample size ranging from 150 to 350 completed questionnaires.

Sample Frame

Data collection was initially designed to be implemented on-site, with follow-up surveys administered after the first and second game days. According to the systematic sampling procedure, it was expected that one survey administrator would intercept a maximum of 40 tailgaters per hour. If six survey administrators continued sampling activities for 3.5 hours for one sampling day, they were expected to intercept about 840 tailgaters per game day. Sampling activities continued for two game days during the first phase of surveys, so administrators were expected to intercept a maximum of 1,680 tailgaters. The researcher assumed that about half of the intercepted tailgaters would provide contact information for follow-up, and, again, that half of those contacted tailgaters would follow-up. Accordingly, the expected sample size through the first phase of the survey was about 400 completed questionnaires, although the actual sample size was smaller than expected due to some tailgaters not being willing to complete the initial on-site survey, and a lower response rate to the subsequent mail or email survey. Accordingly, a third game day was conducted for on-site sampling, with a greater proportion of the questions, which were necessary for the hypothesis tests, shifted to the on-site questionnaire, did not need to a follow-up survey for this study. The first and the second phases of sampling activities are described as follows.

First Phase of Survey on Days 1 and 2

For the first phase of sampling activity on the first and second game days, a one-page on-site questionnaire was administered (see Appendix D for survey items). Questions were asked about study participants' tailgating characteristics, followed by asking whether intercepted tailgaters were interested in participating in the follow-up online and mail surveys. A total of 1,497 tailgaters were intercepted and 1,105 (74%) tailgaters agreed to complete the on-site questionnaire on the two game days. A total of 575 questionnaires were collected on Day 1 and 530 questionnaires were collected on Day 2. Out of the 1,105 tailgaters who completed the on-site questionnaires, 516 (47%) tailgaters provided their contact information for a follow-up survey, with 283 (49%) tailgaters on Day 1, and 233 (44%) on Day 2. Identifiable reasons for refusal to participate in the follow-up survey included: "not interested," felt "participating in on-site and follow-up surveys was duplicated and time-consuming," and "did not want to give personal information." Table 2 shows the on-site sampling frame for the first phase on the first two game days.

Table 2 On-site sampling frame at first phase

	Day 1	**Day 2**[a]	**Total**
On-site survey			
# of intercepted tailgaters	777	720	1,497
# of on-site questionnaires collected	575	530	1,105
% of participation in on-site survey	74%	74%	74%
Willingness to follow-up			
# of on-site questionnaires collected	575	530	1,105
# of email/mail collected	283	233	516
# of email addresses collected	*251*	*203*	*454*
# of mail addresses collected	*32*	*30*	*62*
% of willingness to follow-up	49%	44%	47%

Note: [a] Repeated intercepted tailgaters (n=99) were excluded in the sampling frame in Day 2.

For the follow-up survey in the first phase, the online and mail follow-up survey was conducted using a modified Dillman Total Design Survey Method (2000). A consent form (see Appendix E for the consent form for the follow-up survey) and the follow-up questionnaire (see Appendix F for survey items for the follow-up questionnaire) were sent individually to each of the consenting tailgaters.

Mail surveys were used for those who provided a regular mailing address for the follow-up survey. All regular mail surveys were sent by first-class mail. The initial mailing included: the questionnaire, cover letter, and postage paid business reply envelope. It was sent out on the first business day after the game day (September 3, 2013 for Day 1, and September 9, 2013 for Day 2). For each of the Day 1 and 2 surveys, one week after the first mailing, the second mailing was sent only to those who had not yet responded. A third and final attempt was made one week after the second mailing, if there was still no response. The second and the third mailing attempts included a reminder slip (see Appendix G) with the full package of the survey. Because of expected time lag for returning the questionnaires, the reminder slip included a thank you and apology message for those who had already responded with a completed questionnaire that had not yet reached the researcher.

The online survey was conducted with the same protocol as the mail survey. The online survey was developed through Qualtrics.com. A customized link was created and sent to each of the participants via email. The customized link only allowed the targeted tailgater to participate in the follow-up survey once. The initial emailing (September 5, 2013 for Day 1, and September 11, 2013 for Day 2), included a cover email message (see Appendix H) with the survey link, and was sent two days after the mail survey mailing. There was a two-day interval between mail and online survey distributions so that targeted tailgaters received their follow-ups in a similar time

frame. One week after the first emailing, a second emailing was sent, which included a reminder message with the survey link. Like the mail survey, a third and final attempt was made one week after the second emailing. For the online survey, reminders were sent only to those who had not yet responded. Both online and mail survey collection were closed two weeks after the last reminders were sent.

Out of 516 tailgaters who completed the on-site survey and provided contact information for the follow up, 454 (88%) provided their email addresses, whereas 62 (12%) provided their regular mail addresses. Of 251 email surveys distributed for Day 1, 30 (12%) emails failed, and out of 203 email surveys distributed for Day 2, 27 (13%) emails failed. After distributing 397 surveys to valid online addresses, 121 online surveys (30% response rate) were completed. Out of the 57 valid mail surveys distributed, there were 5 invalid mailing addresses. Of the remaining 52 valid addresses, 30 (53%) mail surveys were completed and returned. In total, 151 questionnaires were collected from the first phase of survey (see Table 3 for the Follow-up Sample Frame at First Phase).

Table 3 Follow-up sample frame at first phase

	Day 1	**Day 2**	**Total**
Online survey distribution			
# of email addresses collected	251	203	454
# of emails failed	30	27	57
# of online surveys distributed	221	176	397
# of online surveys collected	63	58	121
Response rate	29%	33%	30%
Mail survey distribution			
# of mail address collected	32	30	62
# of mailings failed	3	2	5
# of mail surveys distributed	29	28	57
# of mail surveys collected	16	13	30
Response rate	55%	50%	53%

A non-response check was performed with the sample collected at the first phase of survey. Responses were categorized into three groups. GROUP 1 included intercepted tailgaters who completed an on-site survey, but did not provide contact information for a follow-up survey. GROUP 2 included tailgaters who completed an on-site survey and provided contact information for a follow-up survey, but did not participate in the follow-up survey. GROUP 3 included tailgaters who completed both the on-site and follow-up surveys. By comparing characteristics among the three groups, it was learned that those who completed the follow-up surveys were more likely to be older, female, better aware of the recycling program at MSU, and more active in pro-environmental behavior at home (see Appendix I). Yet, there were no significant differences in tailgating characteristics, perceptions about the destination's responsible behavior, and general environmental behavior at tailgating. This finding was not unexpected because previous literature showed that age and gender were associated with individuals' conservation efforts (e.g., Nolan et al., 2008). It is also reasonable to expect that those tailgaters who had a more environmental focus were somewhat more likely to spend their time and efforts on the follow-up survey compared to those who did not. This finding implies that more environmentally responsible tailgaters may be moderately overrepresented in further statistical analysis.

Second Phase of Survey on Day 3

During the collection of follow-up questionnaires in the first phase, it became clear that the expected number of completed questionnaires would not meet the required sample size. Another concern was that study participants who completed the on-site survey but not the follow up may challenge a potential non-response bias in further analysis. Accordingly, the second

phase was developed with additional sampling implemented on the third game day. Unlike the first phase of the survey, tailgaters were intercepted and asked to fill out the extended version of the on-site questionnaire (see Appendix J) in the second phase of the study. The second version of the on-site questionnaire was a combined version of the original on-site and follow-up questionnaires from the first phase of surveys. It was now expected that each survey administrator would spend approximately ten minutes, instead of six minutes, for one data collection point (including one minute for approaching the next data collection point). Also, each survey administrator intercepted five tailgaters, instead of four, at each data collection point. By implementing these changes into the second phase of the sampling procedure, it was expected that one survey administrator would intercept a maximum of 30 tailgaters per hour. If six survey administrators continued the sampling activities for 3.5 hours, for one sampling day, it was expected they would intercept about 640 tailgaters per one game day. Another change was that a new zone, Zone 5A, was added, while, Zone 5 was dropped, as described above in 'Spatial Zoning Plan.' During the second phase of surveys, a total of 581 tailgaters were intercepted and 218 (38%) tailgaters were not willing to participate in the on-site survey. As a result, 363 (62%) tailgaters agreed to participate and completed an on-site questionnaire on the third game day (see Table 4).

Table 4 On-site sampling frame at second phase

	Day 3[a]
On-site survey	
# of intercepted tailgaters	581
# of on-site questionnaires collected	363
# of rejections	218
% of participation in on-site survey	62%

Note: [a] Repeated intercepted tailgaters (n=109) were excluded in the sampling frame for Day 3.

From the first phase of data collection 151 surveys were collected, and from the second phase 363 surveys were collected, accordingly a total of 514 surveys were collected.

Survey Instrument Development

Two steps were taken to develop the survey instrument for this study. First, the initial survey instrument was created based on previous studies. Second, the instrument was reviewed by dissertation committee members. The instrument was also reviewed by five survey administrators to confirm the readability and clarity of the questions. The purpose of this process was to detect any fault in the design of the questionnaire. Some minor changes were made to the items following comments from committee members and recruited survey administrators, prior to conducting the actual survey. In this section, the organization of the survey, and development of the survey instrument are described.

The Questionnaires

The first phase of surveys utilized two questionnaires—on-site and follow-up surveys. The on-site questionnaire allowed the researcher to: (1) develop a profile of intercepted event attendees; and (2) understand potential non-response bias. The on-site questionnaire (see Appendix D) measured study participants' MSU affiliation, residence, age, gender, game attendance, travel distance, tailgating group size and type. The on-site questionnaire also measured study participants' awareness/perception of MSU's recycling program and event attendees' engagement in general environmental behavior both at home and at the tailgate setting. The follow-up online and mail survey (see Appendix F) measured theoretical constructs in the

conceptual framework of this study: event attendees recycling behaviors in daily life and in event settings, situational constraints of such behaviors and underlying psychological constructs of recycling behavior; and event attendees' psychological and behavioral involvement in tailgating activities. The second phase of the study utilized only the on-site survey, which combined a full version of the on-site questionnaire, with the key portion of the follow-up questionnaire from the first phase (see Appendix J) included in the on-site questionnaire.

Pro-environmental Behavior

Pro-environmental behavior was measured with four items, and each of the items was measured for both daily life and a sport event setting. As a primary concern of this research is to compare behavioral differences in the two settings, the measurement items for pro-environmental behavior were identical for both settings. Accordingly, each of the study participants responded to eight total behavioral items. Four material-specific recycling items were developed by adapting previous literature (Klöckner & Oppedal, 2011; Knussen & Yule, 2008). These focused on generally accepted recyclable items in both the household setting and in the recycling scheme for game days developed by the MSU Office of Campus Sustainability. The items included: (1) I recycle non-deposit glass containers; (2) I recycle non-deposit aluminum cans; (3) I recycle plastic (e.g., bottle, cup, grocery bags); and (4) I recycle paper (e.g., mixed paper, boxboard). Items were scored on a 5-point Likert-type scale from 1 = Never, to 5 = Always. In addition to a 5-point scale, a "*don't use*" option was given to respondents for each of the items.

Perceived Behavioral Difficulty

Perceived behavioral difficulty was used to measure situational influences to recycling behavior. Perceived behavioral difficulty was also measured for both daily life and event settings. Instrumentation for perceived behavioral difficulty was adapted from previous literature (Green-Demers, Pelletier, & Ménard, 1997; Klöckner & Oppedal, 2011). The purpose of operationalizing perceived behavioral difficulty was to measure the amount of perceived difficulty one encountered while engaging in each of the material-specific recycling behaviors in the two settings. Accordingly, four behavioral difficulty items were derived from the four material-specific recycling behavior items: (1) Recycling non-deposit glass containers; (2) Recycling non-deposit aluminum cans; (3) Recycling plastic (e.g., bottle, cup, grocery bags); and (4) Recycling paper (e.g., mixed paper, boxboard). The items of behavioral difficulty are identical to the items of recycling behavior, excluding the measurement scale. The sole difference between behavioral difficulty and behavior was that perceived behavioral difficulty was measured by asking respondents to rate the level of difficulty for each recycling behavior on a 5-point scale of 1 = not difficult at all to 5 = very difficult, instead of the 5-point frequency scale of never to always. Like behavior measurement, a "*don't use*" option for a specific item (e.g. glass containers) was provided for each item.

Psychological Constructs of Environmental Behavior

Five underlying psychological constructs of environmental behavior—personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, and gain goals—were operationalized in more general terms, not specifically operationalized for each setting (i.e., in daily life and event settings). Goal-framing theory (Steg, 2007), in conjunction with the Norm

Activation Model (Schwartz, 1977) and the Social Norms Approach (Perkins & Berkowitz, 1986), guided the development of psychological construct measurement items. All psychological construct items were rated on a 5-point Likert-type scale ranging from 1=strongly disagree to 5=strongly agree.

Personal moral norm items were adapted from previous literature (Andersson & von Borgstede, 2010; Dolnicar & Leisch, 2008; Kaiser, 2006). Study participants were asked to indicate the extent to which they agreed with the following statements: (1) I feel morally obligated to engage in recycling; (2) I should do anything I can do to recycle; and (3) I feel guilty when I waste recyclable materials.

Descriptive social norms and *injunctive social norms* were distinguished in this study. Descriptive social norm items reflected the extent to which the study participant perceived the popularity of recycling behavior, and injunctive social norm items measured the extent to which the study participant perceived social approval of recycling behavior. Social norm variables were constructed by taking theoretical conceptualization into account (Cialdini, Reno, & Kallgren, 1990; Perkins & Berkowitz, 1986) and by adapting previous literature in different behavioral domains such as with hotel customers (Goldstein et al., 2008; Park & Smith, 2007; Thøgersen, 2006). Three items were used to measure descriptive social norms: (1) I think that a majority of people in the United States engage in recycling; (2) I think that a majority of people at tailgating areas at MSU engage in recycling; and (3) I think that a majority of people in my community engage in recycling. Three items were used to measure injunctive social norms: (1) A majority of people in the United States should engage in recycling; (2) A majority of people at tailgating areas at MSU should engage in recycling; and (3) A majority of people in my residential community should engage in recycling.

Hedonic goals and *gain goals* were distinguished in this study. The hedonic goal items reflected the extent to which the study participant perceived emotional benefits by engaging in recycling behavior. Gain goal items measured the extent to which the study participant perceived personal resource benefits by engaging in recycling behavior. Hedonic and gain goal variables were constructed by taking theoretical conceptualization into account (Lindenberg & Steg, 2007), and by adapting previous literature in different behavioral domains such as green electricity programs (Clark, Kotchen, & Moore, 2003), green product consumption (Hartmann & Apaolaza-Ibáñez, 2008), and pro-environmental behavior at hotels (Miao & Wei, 2013). Three items were used to measure hedonic goals: (1) I recycle because of the enjoyment that I feel; (2) I take satisfaction in recycling; and (3) I recycle because I enjoy learning new skills/techniques. Three items were used to measure gain goals: (1) One of the best things about recycling is that it helps lower costs to society; (2) We should recycle materials and protect the environment to benefit people; (3) My health and the health of my family may improve because of recycling.

Destination Environmental Responsibility

Destination environmental responsibility was used to measure event attendees' perceptions about the destination's practices in greening events. Items were constructed by taking into account conceptualization (Laing & Frost, 2010; Mair & Laing, 2013), and by modifying items from previous literature in different domains such as hotels (Holcomb, Upchurch, & Okumus, 2007). Also, with respect to the study site's green practices, three items with different aspects of the destination's environmental practices were developed: (1) MSU has visible communications about its green practices at tailgating; (2) MSU has established active recycling programs where I am tailgating; and (3) MSU has established systems to reduce

food/material waste during tailgating. Items were rated on a 5-point Likert-type scale ranging from 1=strongly disagree to 5=strongly agree.

Recreation Involvement

Items for recreation involvement were based on the previous literature (Lee, 2011; McIntyre, 1989; Kyle, Absher, Norman, Hammitt, & Jodice, 2007). The original recreation involvement scale developed in previous literature consisted of attraction (measured using five items), centrality (four items), social bonding (three items), identity affirmation (three items), and identity expression (three items) dimensions (Kyle et al., 2007). This study used a reduced, five-item version of the recreation involvement scale. The five items represented each of the five dimensions of recreation involvement. The five items selected had the highest Cronbach's alpha reliability scores based on the previous literature. Items included in this study are: (1) Tailgating is one of the most enjoyable things I do; (2) I find a lot of my life is organized around Tailgating; (3) I enjoy discussing Tailgating with my friends; (4) When I participate in Tailgating, I can really be myself; and (5) I can tell a lot about a person by seeing them Tailgating. Items were rated on a 5-point Likert-type scale ranging from 1=strongly disagree to 5=strongly agree.

Experience-use History

Experience-use history was measured using four questions, based on previous research (Hammitt, Backlund, & Bixler, 2004). Specific questions asked event attendees' years and frequency of engaging in tailgating at both the study site and other locations. These four items were: (1) What was the first year you tailgated at MSU?; (2) What was the first year you tailgated at other universities/colleges?; (3) How many times did you tailgate at MSU during the

years 2010, 2011 and 2012?; and (4) How many times did you tailgate at other universities/colleges during the years 2010, 2011 and 2012?

Socio-demographics and Tailgating Characteristics

Study participants were asked about their socio-demographic information, which was used to understand the respondents' profiles, and to create sub-groups of study participants for further analysis. Respondents were asked their age, gender, five-digit zip code for their principal home, and current MSU affiliation. By utilizing the zip code and MSU affiliation, event attendees were categorized into two types—tourists and non-tourists. Tourists refer to those tailgaters who are neither local residents living in the vicinity of the destination (i.e., Greater Lansing area defined as Eaton, Clinton, or Ingham County) nor those who are MSU community members (i.e. students, faculty, staff, or alumni). This definition is also used by the Greater Lansing Convention and Visitors Bureau.

In addition to demographic characteristics, tailgating characteristics were also gathered. Questions included: (1) Are you here as a fan of MSU, visiting, or other teams?; (2) Are you attending the game today?; (3) Are you the leader of the tailgate at this site?; (4) How many miles did you travel from your principal home to East Lansing for this experience?; (5) How many adults (18 years and older including you) and children (under 18) came with you to this tailgate?; and (6) Who came with you to this tailgate (e.g., family or friends)?

Finally, three items were developed to measure general environmental behavior both in daily life and at sport event settings. Items measured three commonly recognized categories of environmental behavior: reduce, reuse, and recycle. These are general environmental behavior categories discussed in previous studies (Barr, 2007; De Young, 1986; Miao & Wei, 2013). Also,

the study site currently uses a three R's scheme: "Reduce, Reuse, and Recycle" to help protect natural resources and reduce the amount of waste. Three items were included: (1) I look for ways to reduce food/material waste; (2) I look for ways to reuse things; and (3) I recycle materials. The three items were used to identify potential differences between respondents and non-respondents.

Preparation for Data Analysis

Data Cleaning

After distributing questionnaires, 514 surveys were collected. Prior to analyzing the data, eight responses were dropped because these respondents did not complete the majority of the questionnaire. In addition, 101 surveys were dropped because they were found to be inappropriate for analysis; they did not provide comparable responses to sport event attendees' recycling behaviors in daily life and in event settings. For example, although an answer choice option "don't use" was intentionally included in behavior measurement scales to reduce the measurement error, those responses were not appropriate when comparing paired responses. Accordingly, responses with "don't use" selected for recycling behavior measurement items in either setting were removed using a list-wise deletion method. After deleting incomplete responses, a total of 405 useable responses were available for further analysis. Before analyzing the data, the researcher examined the potential differences in profiles between all tailgaters who provided an on-site response in either Phase I or II, and the sub-set of tailgaters who completed the follow-up in Phase I or the full on-site survey in Phase II. Of the study participants'

characteristics used for further statistical analysis (n=405), there were no substantial deviations from the on-site intercepted tailgaters (n=1,468) (see Table 5).

Table 5 Comparison between intercepted tailgaters and study participants

Demographic Characteristic		Intercepted tailgaters (n=1,468)	Study Participants (n=405)
Age			
18-24		16.0%	17.2%
25-34		22.5%	19.7%
35-44		16.6%	16.0%
45-54		22.7%	19.0%
55-64		16.3%	21.4%
65 or older		5.9%	6.7%
Mean		41.7	42.9
Standard Deviation		15.0	15.9
Gender			
Male		50.7%	44.9%
Female		49.3%	55.1%
Affiliation			
MSU Employee		2.9%	3.2%
MSU Student		9.7%	11.9%
Not MSU Employee or Student		87.4%	84.9%
If Not MSU Employee or Student, MSU Alumni?			
	Yes	44.5%	49.4%
	No	55.5%	50.6%
Residence			
Out of State of Michigan		6.8%	6.7%
In State of Michigan		93.2%	93.3%
If Residents of State of Michigan, residents in Eaton, Clinton, or Ingham County?			
	Yes	28.2%	33.9%
	No	71.8%	66.1%

Table 5 Comparison between intercepted tailgaters and study participants (Cont'd)

Tailgating Characteristic	Intercepted tailgaters (n=1,468)	Study Participants (n=405)
Attending Game		
Yes	84.7%	78.5%
No	15.3%	21.5%
Leader of Tailgating		
Yes	28.2%	27%
No	71.8%	73%
Travel Miles		
0-49 miles	37.0%	43.1%
50-99 miles	45.6%	41.4%
100-149 miles	8.2%	6.5%
150-199 miles	2.3%	1.5%
200 or more	6.9%	7.5%
Adult Group Size		
1-5 adults	66.2%	63.1%
6-10 adults	19.8%	22.8%
11 or more	14.0%	14.1%
Have Child in Group		
Yes	24.2%	21.3%
No	75.8%	78.7%
Tailgating Group Type		
By myself	2.9%	2.7%
Family only	17.4%	15.6%
Friends only	19.6%	18.1%
Family and Friends	57.7%	60.6%
Club/Organization	1.6%	2.7%
Other	0.8%	0.2%

Reliability and Validity Tests

Two major criteria for assessing measurement are reliability and validity. Both were evaluated for the measurement constructs in this study. Reliability means repeatability—the ability to yield consistent results over time from several measurements made in the same way

(Babbie 2010). Internal consistency reliability has been the most commonly used reliability method in developing measurement scales. Cronbach's alpha test was used for internal consistency reliability. A coefficient score of 0.7 or higher demonstrates an acceptable level of reliability coefficient (Nunnally, 1978). Validity is the validation for measurement, and refers to the accuracy or truthfulness of a measurement. That is, validity is the extent to which differences found with a measuring tool reflect true differences among respondents being studied (Babbie 2010). Two forms of validity were used in this study: content validity and construct validity. Content validity is the degree to which the content of the items adequately represents the universe of all relevant items under study. It is evaluated by examining the subjective agreement among professionals that a scale logically appears to accurately reflect what it is intended to measure. Construct validity is the degree to which a measure relates to other variables as expected within a system of theoretical relationships. Two categories of construct validity are convergent validity (i.e., the degree to which a measure is correlated with other measures with which it is theoretically predicted) and discriminant validity (i.e., the degree to which the operationalization does not correlate with other operationalizations with which it should not theoretically correlate). Construct validity is evaluated by examining the item loadings and their associated *t*-values, as well as item-total correlation. If factor loadings for the indicators under the same construct were higher than 0.5, this supported the convergent validity of the constructs. Discriminant validity is assessed by looking at correlations between items in different constructs. Low correlation provides evidence of discriminant validity. Results of reliability and validity tests are presented in Chapter 4.

Data Analysis Plan

This study employed several statistical analysis tools to describe the sample and test the hypotheses associated with two research questions in the proposed model. The computer software used for the analyses was the Statistical Package for the Social Sciences (SPSS) version 20.0 for Windows.

Descriptive statistics were obtained to describe study participants' profiles. Study participants' demographic information (e.g., age, gender, affiliation, and residence), and tailgating characteristics (e.g., game attendance, group size, and travel distance) were presented by using frequencies, percent, mean, and standard deviation. Normality assumptions for parametric tests employed in this study were examined in terms of skewness and kurtosis. Skewness within a range between -3 and 3, and a kurtosis score of between -10 and 10 are considered acceptable (Kline, 1998). All the variables in the study were within these acceptable ranges (see Appendix K).

In answering Research Question 1, an exploratory factor analysis (EFA) followed by a series of multiple regression analysis was employed. The EFA was expected to retain factors, which were measured by multiple items. For example, underlying psychological constructs of environmental behavior were retained through EFA, and entered as independent variables in multiple regression analysis.

EFA was employed to assess the dimensionality of measurement items. A factor analysis is a useful tool for developing operational representatives for a theoretical construct (Gorsuch, 1983), and is an important tool for questions of validity of the measurement of psychological constructs (Nunnally, 1978). Exploratory factor analysis is used over confirmatory factor analysis in this study. Although both exploratory and confirmatory approaches seek to account

for as much variance as possible in a set of observed variables with a smaller set of latent variables, exploratory factor analysis is particularly appropriate because it is used for scale development or when there is little empirical basis for specifying a priori the number and patterns of common factors (Ford, MacCallum, & Tait, 1986). In EFA, various rules of thumb are used by researchers for the retention of factors. Kaiser's (1960) recommendation of an eigenvalue over 1 was used as a criterion for factor retention. Then, the acceptability of factor analysis results of all scales was measured by using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which should be larger than the recommended value of 0.6 (Tabachnick & Fidell, 2007). A factor loading of .40 was used as a minimum cutoff for an item to be retained. To ensure that each attribute loaded only on one factor, items which had factor loadings lower than .40 or cross-loaded on more than one factor were eliminated (Hair et al., 2006).

Multiple regression analyses were employed to assess the effects of independent variables (i.e., psychological constructs of environmental behavior, and perceived behavioral difficulty) on a dependent variable (i.e., pro-environmental behavior). Variables used in multiple regressions were constructed by calculating composite scores with multiple measurement items, which were derived from the EFA results. Separate multiple regression analysis was conducted for each dependent variable (e.g., predicting behavior in a daily life setting, and predicting behavior in an event setting). By comparing significantly influential factors in each of the regression models, this study answered the first research question, "Do predictive roles of psychological constructs of environmental behavior differ in predicting sport event attendee's pro-environmental behavior in daily life versus in the context of sport event tourism?"

In answering Research Question 2, paired sample *t*-tests and mixed between-within subjects analyses of variance (ANOVAs) were employed. Paired sample t-tests were used to test

whether there were statistically significant differences between pro-environmental behaviors in daily life and in event settings. A finding of no significant difference between mean scores indicates that the behavior in daily life was consistent with the behavior in the event setting, whereas a significant difference indicates a lack of consistency in the behavior between the two settings.

Mixed between-within subject ANOVAs were then conducted to assess the impacts of event attendees' characteristics (e.g., event attendee types) on pro-environmental behavior across the two settings (daily life and event setting). Mixed between-within subjects ANOVA employs both types of ANOVA—between-groups ANOVA and within-subjects ANOVA—which is used when the study participants encounter repeated measures (i.e., the same subjects are used and measured under different settings). The within-subjects design should only be used when the two sets of scores represent measures of exactly the same thing. Also, mixed between-within subject ANOVAs introduced a concept of interaction, which refers to the way in which a category of one independent variable (e.g., tourists) combines with a category of another independent variable (e.g., at event setting) to produce an effect on the dependent variable (e.g., recycling behavior) that goes beyond the sum of the separate effects. By testing whether behavioral differences across settings vary depending on event attendees' characteristics, this study answered the second research question, "Is a sport event attendee's differences in pro-environmental behavior in daily life and in an event setting affected by the event attendees' characteristics? Assumptions that have to be met in each of the analyses were assessed before conducting statistical tests, and are presented in the following chapter.

The following chapter describes the procedures of statistical analyses, tests the hypotheses, and reports the results.

CHAPTER 4

RESULTS

The primary purpose of this study is to identify differences in the underlying mechanisms of pro-environmental behavior in daily life and in an event setting. To achieve this purpose, a self-administered survey was conducted and statistical analyses were employed to answer the research questions. This chapter consists of three subsections: (1) Description of the Study Participants; (2) Examination of Research Question 1; and (3) Examination of Research Question 2.

Description of the Study Participants

Socio-demographic Profile

The socio-demographic characteristics of the study participants included MSU affiliation and residential area, which were used for identifying sub-types of event attendees (see Table 6). In addition, age, gender, game attendance, leader of tailgating group, travel distance, tailgating group size, and group type were included to understand the profile of football tailgaters (see Table 7).

As shown in Table 6, study participants' (n=405) affiliations were 'MSU employee' (3.2%), 'MSU student' (11.9%), and 'not MSU employee or student' (84.9%). Of 344 respondents who were not an MSU employee or student, about one half of them (49.4%) were 'MSU alumni.' The majority of study participants (93.3%) were residents of the State of

Michigan. Of 378 Michigan residents, about one third (33.9%) were residents in the greater Lansing area, which is comprised of Clinton, Eaton, and Ingham counties.

Table 6 Affiliation and residential area of study participants

Variable		Frequency	Percent (%)
Affiliation (n=405)			
MSU Employee		13	3.2
MSU Student		48	11.9
Not MSU Employee or Student		344	84.9
If Not MSU Employee or Student, MSU Alumni?			
	Yes	170	49.4
	No	174	50.6
Residence (n=405)			
Out of State		27	6.7
Michigan		378	93.3
Michigan Resident of Clinton, Eaton, or Ingham County?			
	Yes	128	33.9
	No	250	66.1

Table 7 shows the socio-demographic characteristics of the study participants. Study participants ranged in age from 18 to 83 years, and the average age was 43 years. The majority of study participants (78.5%) planned to attend the game in the stadium. Twenty-seven percent of study participants indicated that they themselves were the leaders of the tailgating groups. Most respondents traveled less than 100 miles from their principal home to East Lansing for tailgating, with 43.1% traveling less than 50 miles, 41.4% traveling between 50 and 99 miles and 15.5% traveling 100 miles or more. About two-thirds (63.1%) of the study participants came to the tailgating event with a group of 1 to 5 adults, and 21.3% of the study participants had children in their groups. Study participants' tailgating group types are: 'by myself' (2.7%), 'family only' (15.6%), 'friends only' (18.1%), 'family and friends' (60.6%), and 'club/organization' (2.7%).

Table 7 Socio-demographic characteristics of study participants

Variable	Frequency	Percent (%)
Age (n=401, mean=43 S.D.=15.9)		
18-19	17	4.2
20s	96	23.9
30s	66	16.5
40s	58	14.5
50s	98	24.4
60 or older	66	16.5
Gender (n=405)		
Male	182	44.9
Female	223	55.1
Attending Game (n=404)		
Yes	317	78.5
No	87	21.5
Leader of Tailgating (n=404)		
Yes	109	27.0
No	295	73.0
Travel Miles (n=401)		
0-49 miles	173	43.1
50-99 miles	166	41.4
100-149 miles	26	6.5
150-199 miles	6	1.5
200 or more	30	7.5
Adult Group Size (n=404)		
1-5 adults	255	63.1
6-10 adults	92	22.8
11 or more	57	14.1
Have Child in Group (n=404)		
Yes	86	21.3
No	318	78.7
Tailgating Group Type (n=404)		
By myself	11	2.7
Family only	63	15.6
Friends only	73	18.1
Family and Friends	245	60.6
Club/Organization	11	2.7
Other	1	0.2

Tailgating Experience Profile

Tailgate experience characteristics included the respondent's recreation involvement (see Table 8) and experience-use history (see Table 9).

Recreation involvement was measured with five items, using a 5-point Likert-type scale that ranged from 1 for strongly disagree to 5 for strongly agree. As shown in Table 8, the mean scores ranged from 2.4 to 3.8. Among the five items, "Tailgating is one of the most enjoyable things I do" reached the highest level of agreement (mean=3.79), followed by "When I participate in Tailgating, I can really be myself" (mean=3.65), "I enjoy discussing Tailgating with my friends" (mean=3.40), "I can tell a lot about a person by seeing them Tailgating" (mean=3.06). The item, "I find a lot of my life is organized around Tailgating" (mean=2.41) had the lowest level of agreement among the items.

Table 8 Recreation involvement profile

Recreation Involvement [a] (N=405)	Mean	Std. Deviation
Tailgating is one of the most enjoyable things I do.	3.79	1.01
I find a lot of my life is organized around Tailgating.	2.41	1.14
I enjoy discussing Tailgating with my friends.	3.40	1.16
When I participate in Tailgating, I can really be myself.	3.65	1.15
I can tell a lot about a person by seeing them Tailgating.	3.06	1.14

Note.
a: Measurement item scale ranged from 1="strongly disagree" to 5="strongly agree"

Table 9 Experience-use history profile

Variable	Frequency	Percent (%)
First year you tailgated at MSU (N=370)		
1944-1979	57	15.4
1980-1989	54	14.6
1990-1999	87	23.5
2000-2009	107	28.9
2010-2013	65	17.6
First year you tailgated at other universities/colleges (N=254)		
1959-1979	32	12.6
1980-1989	49	19.3
1990-1999	44	17.3
2000-2009	96	37.8
2010-2013	33	13.0
Frequency of tailgate at MSU during the years 2010, 2011 and 2012 (N=370)		
0 time	32	8.6
1-5 times	77	20.8
6-10 times	66	17.8
11-15 times	69	18.6
16-20 times	75	20.3
21 times or more	51	13.8
Frequency of tailgate at other universities/colleges during the years 2010, 2011 and 2012 (N=279)		
0 times	106	38.0
1-5 times	140	50.2
6-10 times	14	5.0
11-15 times	6	2.2
16-20 times	5	1.8
21 times or more	8	2.9

Experience-use history was measured with four items (see Table 9). Among the respondents, 15.4% indicated the first year of their tailgating at MSU was between the years 1944 and 1979; 14.6% indicated the 1980s; 23% indicated the 1990s; and 46.5% indicated that their first year of tailgating at MSU was between 2000 and 2013. Of their tailgating experiences at other universities/college, approximately half of respondents (50.8%) indicated that their first year of tailgating at other places was between 2000 and 2013. Among experienced tailgaters,

8.6% did not attend tailgating during the years 2010, 2011 and 2012; 38.6% attended between 1 and 10 times; 38.9% attended 11 to 20 times; and 13.8% attended tailgating 21 or more times during the last three years. Frequencies of study participants' tailgating at other universities/colleges during the years 2010, 2011, and 2012 are: 38% never attended; 55.2% attended 1 to 10 times; and 6.9% attended tailgating events 11 or more times.

Pro-environmental Behavior and Related Psychological Constructs Profile

Study participants' pro-environmental behavior, perceived behavioral difficulty, and psychological constructs (i.e., personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, and gain goals) and event attendee perceived environmental responsibility of destinations were measured with multiple items using a 5-point Likert-type scale (see Tables 10 through 13).

Table 10 presents a profile of study participants' pro-environmental behavior at home and at the tailgate event. Three items were used to measure respondents' self-reported general environmental behavior both at home and in tailgating settings. Study participants engaged in more environmental behaviors at home, compared to their behavior at tailgating: "I recycle materials" at home (mean=4.25) versus at tailgating (mean=3.25); "I look for ways to reuse things" at home (mean=4.13) versus at tailgating (mean=3.09); and "I look for ways to reduce food/material waste" at home (mean=4.05) versus at tailgating (mean=3.18). Four items were used to measure respondents' self-reported material-specific recycling behavior both at home and at tailgating settings (see also Table 10). Different patterns in material-specific recycling behavior were observed across settings. At home, the mean value of recycling non-deposit aluminum cans (mean=4.30) is highest, followed by recycling plastic (mean=4.29), recycling paper (mean=4.20), and recycling non-deposit glass containers (mean=4.18). At the tailgate

event, the mean value of recycling non-deposit aluminum cans (mean=3.21) is highest, followed by recycling non-deposit glass containers (mean=3.18), recycling plastic (mean=3.06), and recycling paper (mean=2.83). Generally, study participants recycled more at home than they did at the tailgate event: "I recycle non-deposit glass containers" at home (mean=4.18) versus at tailgating (mean=3.18); "I recycle non-deposit aluminum cans" at home (mean=4.30) versus at tailgating (mean=3.21); "I recycle plastic" at home (mean=4.29) versus at tailgating (mean=3.06); and "I recycle paper" at home (mean=4.20) versus at tailgating (mean=2.83).

Table 10 Pro-environmental behavior profile

	At Home (N=405)		At Tailgating (N=405)	
	Mean	Std. Deviation	Mean	Std. Deviation
General pro-environmental behavior [a]				
I recycle materials.	4.25	1.13	3.25	1.31
I look for ways to reuse things.	4.13	1.06	3.09	1.34
I look for ways to reduce food/material waste.	4.05	1.02	3.18	1.27
Material-specific recycling behavior [a]				
I recycle non-deposit glass containers.	4.18	1.31	3.18	1.47
I recycle non-deposit aluminum cans.	4.30	1.24	3.21	1.48
I recycle plastic (e.g., bottle, cup, grocery bags).	4.29	1.16	3.06	1.42
I recycle paper (e.g., mixed paper, boxboard).	4.20	1.25	2.83	1.45

Note.
a: Measurement item scale ranged from 1="strongly disagree" to 5="strongly agree"

Perceived behavioral difficulty was measured using four items (see Table 11). The mean scores of the four items in the home setting ranged from 2.31 to 2.40, whereas the mean scores of the same four items in the tailgating setting ranged from 3.01 to 3.10. Study participants perceived recycling behavior at home as less difficult than recycling at tailgating: "Recycling non-deposit glass containers" at home (mean=2.40) and at tailgating (mean=3.05); "Recycling non-deposit aluminum cans" at home (mean=2.34) and at tailgating (mean=3.03); "Recycling plastic" at home (mean=2.31) and at tailgating (mean=3.01); and "Recycling paper" at home (mean=2.35) and at tailgating (mean=3.10).

Table 11 Perceived behavioral difficulty profile

	At Home (N=405)		At Tailgating (N=405)	
	Mean	Std. Deviation	Mean	Std. Deviation
Perceived behavioral difficulty [a]				
Recycling non-deposit glass containers.	2.40	1.64	3.05	1.37
Recycling non-deposit aluminum cans.	2.34	1.65	3.03	1.37
Recycling plastic (e.g., bottle, cup, grocery bags).	2.31	1.59	3.01	1.32
Recycling paper (e.g., mixed paper, boxboard).	2.35	1.55	3.10	1.37

Note.
a: Measurement item scale ranged from 1="not difficult at all" to 5="very difficult"

The underlying psychological motivation of recycling behavior was measured using five constructs with 15 items: personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, and gain goals (see Table 12). The mean scores of personal moral norms (ranged from 3.85 to 4.04), injunctive social norms (ranged from 4.27 to 4.31), and gain goals

(ranged from 3.77 to 4.30) were higher than the mean scores of descriptive social norms (ranged from 2.69 to 3.37) and hedonic goals (ranged from 2.96 to 3.90).

Table 12 Psychological constructs of recycling behavioral profile

N=405	Mean	Std. Deviation
Personal Moral Norms [a] (PMN)		
I feel morally obligated to engage in recycling. (PMN1)	4.04	1.03
I should do anything I can do to recycle. (PMN2)	4.03	1.03
I feel guilty when I waste recyclable materials. (PMN3)	3.85	1.18
Descriptive Social Norms a (DSN)		
I think that a majority of people in the United States engage in recycling. (DSN1)	2.88	1.00
I think that a majority of people at tailgating areas at MSU engage in recycling. (DSN2)	2.69	1.08
I think that a majority of people in my community engage in recycling. (DSN3)	3.37	1.00
Injunctive Social Norms a (ISN)		
A majority of people in the United States should engage in recycling. (ISN1)	4.31	0.94
A majority of people at tailgating areas at MSU should engage in recycling. (ISN2)	4.27	0.92
A majority of people in my residential community should engage in recycling. (ISN3)	4.31	0.94
Hedonic Goals a (HG)		
I recycle because of the enjoyment that I feel. (HG1)	3.43	1.21
I take satisfaction in recycling. (HG2)	3.90	1.13
I recycle because I enjoy learning new skills/techniques. (HG3)	2.96	1.26
Gain Goals a (GG)		
One of the best things about recycling is that it helps lower costs to society. (GG1)	3.77	1.13
We should recycle materials and protect the environment to benefit people. (GG2)	4.30	0.99
My health and the health of my family may improve because of recycling. (GG3)	3.90	1.13

Note.
a: Measurement item scale ranged from 1="strongly disagree" to 5="strongly agree"

Event attendee perceived destination environmental responsibility was measured using three items (see Table 13). The mean scores of the three items were: “MSU has visible communications about its green practices at tailgating” (mean=3.24), “MSU has established active recycling programs where I am tailgating” (mean=3.16), and “MSU has established systems to reduce food/material waste during tailgating” (mean=3.08).

Table 13 Event attendee perceived destination environmental responsibility

N=405	Mean	Std. Deviation
Destination Environmental Responsibility [a] (DER)		
MSU has visible communications about its green practices at tailgating. (DER1)	3.24	1.21
MSU has established active recycling programs where I am tailgating. (DER2)	3.16	1.17
MSU has established systems to reduce food/material waste during tailgating. (DER3)	3.08	1.10

Note.
a: Measurement item scale ranged from 1=“strongly disagree” to 5=“strongly agree”

Research Question 1

As discussed in the literature review, there has been little empirical research to examine whether and how underlying mechanisms of pro-environmental behavior differ between daily life and in event settings. This section answers Research Question 1, "Do predictive roles of psychological constructs of environmental behavior (i.e., *personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, gain goals, and perceived behavioral difficulty*) differ in predicting sport event attendee's pro-environmental behavior in daily life versus in the context of sport event tourism?" To address this research question, these steps were taken:

1. Dependent and independent variables were constructed using exploratory factor analyses. The factor loadings for each item were examined, and internal consistency for each of the items was tested. Poor items were removed based on the factor analysis. The mean values for each of the identified factors was calculated and used as a new variable for a reduced model. Descriptive statistics (mean, standard deviation, and correlation coefficients) of newly constructed variables were calculated before conducting multiple regression analysis.
2. A series of multiple regression analyses was conducted. Two separate multiple regression analyses were conducted to examine the effects of psychological constructs on recycling behavior at home, and those same effects on recycling behavior at tailgating.

Exploratory Factor Analysis

Three separate factor analyses were conducted. First, the 15 items measuring underlying psychological constructs of recycling behavior were factor analyzed to examine the dimensionality of the scale, and to form setting-general independent variables to be used in regression analysis. Second, the eight items measuring perceived behavioral difficulty were factor analyzed to examine a two-dimensional scale representing behavioral difficulty at both home and tailgating settings, and to form setting-specific independent variables used for the subsequent regression analysis. Third, the eight items measuring recycling behavior were factor analyzed to examine a two-dimensional scale of recycling behavior at home and tailgating settings, and to form setting-specific dependent variables used for regression analysis.

EFA for Psychological Constructs

First, principle component exploratory factor analysis was conducted to identify the dimensions of study participants' psychological constructs that influence recycling behavior. A factor analysis with an oblique rotation method was utilized. In exploratory factor analysis, rotation of the factor dimensions identified in the initial extraction of factors allows the researcher to obtain simple and interpretable factors (Field, 2005). Rotation is chosen differently depending upon whether the factors are believed to be correlated (i.e., oblique rotation methods) or uncorrelated (i.e., orthogonal rotation methods). With an oblique rotation, it is possible for factors to be correlated with each other and variables to be correlated with more than one factor. This increases the factor structure complexity, but it does allow for more complex relationships that are certainly a part of the intricate world of human behavior. Oblimin rotation, as the oblique rotation method that is widely used in social science studies (Field, 2005), was utilized in this

factor analysis because the underlying psychological constructs of pro-environmental behaviors are somewhat correlated (Lindenberg & Steg, 2007; Thøgersen, 2006). Oblimin rotation generates a simple-structured solution by fining a rotation of the initial extracted factors that minimizes the cross products of the factor loading (Robins, Fraley, & Krueger, 2009).

As a result of the first EFA, items that were either below the 0.40 loading or were cross-loaded on more than one factor were deleted (Hair et al., 2006). One item, "We should recycle materials and protect the environment to benefit people," was dropped because of low factor loading (< 0.4). No items were cross-loaded. A five-factor model emerged with the remaining 14 items. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.901, which exceeded the acceptable value of 0.6 (Tabachnick & Fidell, 2007). The sample also met the criteria for factor analysis evidenced by Bartlett's test of sphericity (χ^2=3,647.95, $p < 0.001$). Both measures indicated that factor analysis was appropriate for the data. The results of the factor analysis are reported in Table 14. They show that the factors appear to represent the five underlying psychological constructs of recycling behavior with significant loadings ranging from 0.58 to 0.94. Table 14 also showed the presence of five factors with an Eigenvalue exceeding 1.0, and a cumulative 79.52% of variance explained by this factor solution. Cronbach's alpha coefficients were calculated to test the internal consistency reliability of the data set. The Cronbach's alpha for each factor ranged from 0.70 to 0.93, suggesting strong internal consistency (see also Table 14).

Table 14 Exploratory factor analysis: Psychological constructs

	Factor loading	Eigen-value	Variance explained	Cron-bach's α
Factor 1: Injunctive Social Norms (ISN)		6.7	47.89	0.93
ISN1	0.943			
ISN2	0.935			
ISN3	0.892			
Factor 2: Descriptive Social Norms (DSN)		3.86	13.29	0.70
DSN1	0.809			
DSN2	0.799			
DSN3	0.693			
Factor 3: Hedonic Goals (HG)		2.13	8.04	0.83
HG1	0.853			
HG2	0.575			
HG3	0.757			
Factor 4: Personal Moral Norms (PMN)		1.44	5.33	0.87
PMN1	0.801			
PMN2	0.746			
PMN3	0.793			
Factor 5: Gain Goals (GG)		0.92	4.597	0.81
GG1	0.79			
GG3	0.73			

Note.

1) ISN1=A majority of people in the United States should engage in recycling; ISN2=A majority of people at tailgating areas at MSU should engage in recycling; ISN3=A majority of people in my residential community should engage in recycling; DSN1=I think that a majority of people in the United States engage in recycling; DSN2=I think that a majority of people at tailgating areas at MSU engage in recycling; DSN3=I think that a majority of people in my community engage in recycling; HG1=I recycle because of the enjoyment that I feel; HG2=I take satisfaction in recycling; HG3=I recycle because I enjoy learning new skills/techniques; PMN1=I feel morally obligated to engage in recycling; PMN2=I should do anything I can do to recycle; PMN3=I feel guilty when I waste recyclable materials; GG1=One of the best things about recycling is that it helps lower costs to society; GG3=My health and the health of my family may improve because of recycling.

2) Extraction method: principle components analysis with Oblimin rotation and Kaiser normalization; KMO measure of sampling adequacy = 0.901; Bartlett's test of sphericity, $\chi^2_{(91)} = 3{,}647.95$, $p < 0.001$.

Factor 1 represented "injunctive social norms" with three items: A majority of people in the United States should engage in recycling (ISN1); a majority of people at tailgating areas at MSU should engage in recycling (ISN2); and a majority of people in my residential community should engage in recycling (ISN3). Factor 2 represented "descriptive social norms" with three items: I think that a majority of people in the United States engage in recycling (DSN1); I think that a majority of people at tailgating areas at MSU engage in recycling (DSN2); and I think that a majority of people in my community engage in recycling (DSN3). Factor 3 represented "hedonic goals." Three items were loaded on this dimension: I recycle because of the enjoyment that I feel (HG1); I take satisfaction in recycling (HG2); and I recycle because I enjoy learning new skills/techniques (HG3). Factor 4 represented "personal moral norms," with three items on this dimension: I feel morally obligated to engage in recycling (PMN1); I should do anything I can do to recycle (PMN2); and I feel guilty when I waste recyclable materials (PMN3). Finally, factor 5 represented "gain goals." Two items were loaded on this dimension: One of the best things about recycling is that it helps lower costs to society (GG1); and my health and the health of my family may improve because of recycling (GG3). In summary, the interpretation of the first EFA, with a five-factor solution, was consistent with the initially proposed five-factor psychological constructs in the research framework. Following the EFA, items under each factor were averaged to form five setting-general independent variables in a further regression analysis.

EFA for Perceived Behavioral Difficulty

The second EFA was conducted to reduce the number of measurement items to a smaller number of factors, prior to regression analysis. The eight items measuring perceived behavioral difficulty were factor analyzed to examine whether the four items represented perceived

behavioral difficulty at home, and another four items represented perceived behavioral difficulty at the tailgating event setting. An oblique rotation (i.e., Oblimin rotation) was utilized by assuming the two factors were correlated; an orthogonal rotation method (i.e., Varimax rotation) yielded the same two-factor solution. The factor analysis was appropriate for the data (KMO measure of sampling adequacy = 0.825, Bartlett's test of sphericity [χ^2=4,103.57, $p < 0.001$]), and two factors loaded by all eight items were extracted (see Table 15). The results showed that the factors appear to represent the perceived difficulty of recycling behavior at home and at tailgating, with significant loadings ranging from 0.93 to 0.97. The results also showed the presence of two factors with an Eigenvalue exceeding 1.0, explaining 48.15% and 42.84% of the variance, respectively, and demonstrating a cumulative 90.99% of the variance explained. The Cronbach's alpha values for each factor were 0.96 and 0.97, and revealed a strong internal consistency among items for each factor. Factor 1 represented "perceived behavior difficulty at home" and Factor 2 represented "perceived behavior difficulty at tailgating." Following the EFA, items under each factor were averaged to form two setting-specific independent variables in further regression analysis.

Table 15 Exploratory factor analysis: Perceived behavioral difficulty

Factor	Factor loading	Eigen-value	Variance explained	Cron-bach's α
Factor 1: Perceived behavioral difficulty at home		3.852	48.153	0.972
non-deposit glass containers	.959			
non-deposit aluminum cans	.963			
plastic	.965			
paper	.956			
Factor 2: Perceived behavioral difficulty at tailgating		3.472	42.837	0.959
non-deposit glass containers	.951			
non-deposit aluminum cans	.938			
plastic	.965			
paper	.930			

Note.
Extraction method: principle components analysis with Varimax rotation; KMO measure of sampling adequacy = 0.825; Bartlett's test of sphericity, $\chi^2 = 4{,}103.57$, $p < 0.001$.

EFA for Pro-environmental Behavior

The third EFA was conducted to reduce the number of measurement items to a smaller number of factors, prior to regression analysis. The eight items measuring recycling behavior were factor analyzed to examine whether the four recycling items represented environmental behavior in a daily life setting, and the other four items represented the same behavior in an event setting. An oblique rotation (i.e., Oblimin rotation) was utilized by assuming the two factors were correlated; an orthogonal rotation method (i.e., Varimax rotation) yielded the same two-factor solution. As expected, factor analysis was appropriate for the data, and two factors loaded by all eight items were extracted (KMO measure of sampling adequacy = 0.785, Bartlett's test of sphericity [χ^2=3,039.85, $p < 0.001$]). The results of factor analysis are reported in Table 16. The results showed that the factors appear to represent recycling behavior at home and at tailgating, with significant loadings ranging from 0.88 to 0.95. The results also showed the presence of two factors with an Eigenvalue exceeding 1.0, explaining 56.31% and 26.47% of the

variance, respectively, demonstrating a cumulative 82.78% of variance explained. The Cronbach's alphas for each factor were 0.92 and 0.94, suggesting strong internal consistency. Factor 1 represented "recycling behavior at home" and Factor 2 represented "recycling behavior at tailgating." Following the EFA, items under each factor were averaged to form two setting-specific dependent variables in further regression analysis.

Table 16 Exploratory factor analysis: Recycling behavior

Factor	Factor loading	Eigen-value	Variance explained	Cron-bach's α
Factor 1: Recycling behavior at home		4.505	56.308	0.915
non-deposit glass containers	.881			
non-deposit aluminum cans	.914			
plastic	.877			
paper	.901			
Factor 2: Recycling behavior at tailgating		2.118	26.471	0.944
non-deposit glass containers	.918			
non-deposit aluminum cans	.943			
plastic	.945			
paper	.895			

Note.
Extraction method: principle components analysis with Oblimin rotation; KMO measure of sampling adequacy = 0.785; Bartlett's test of sphericity, $\chi^2 = 3{,}039.85$, $p < 0.001$.

Multiple Regression Analysis

In order to assess Research Question 1 with the 12 hypotheses, two separate multiple regression analyses were conducted to examine and compare the underlying mechanism of pro-environmental behavior in daily life (Model 1), and the mechanism of pro-environmental behavior in a sport event setting (Model 2).

Variable Description

Variables used in two regression models are presented in Table 17. Five psychological constructs (i.e., *personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, and gain goals*) were used as independent variables for hypothesis tests (*H1.1a* through *H1.1e*; and *H1.2a* through *H1.2e*), and two demographic variables (i.e., age and gender) were included as control variables. These seven variables were setting-general variables that were used in both Model 1 and Model 2. *Perceived behavioral difficulty at home* (*H1.1f*) and *perceived behavioral difficulty at tailgating* (*H1.2f*) was used as a setting-specific independent variable for hypotheses tests in each model. And, *habitual environmental behavior* at each setting was included in each counterpart model as an additional control variable. Habitual environmental behavior at home (or at tailgating) was constructed by averaging two items, "I look for ways to reuse things at home (or at tailgating)", and I look for ways to reduce food/material waste at home (or at tailgating)." These two variables—*perceived behavioral difficulty* and *habitual environmental behavior*—were setting-specific variables that were used in Models 1 and 2. *Age, gender, and habitual environmental behavior* were included as control variables in regression analyses because there was a potential bias in these variables among this study's participants (see non-response check in Chapter 3).

Table 17 Variables used in regression models

Variable (Hypothesis)	Model 1 at home	Model 2 at tailgating
Dependent variable		
recycling behavior at home	☑	☐
recycling behavior at tailgating	☐	☑
Independent variable-setting–general		
personal moral norms (*H1.1a, H1.2a*)	☑	☑
descriptive social norms (*H1.1b, H1.2b*)	☑	☑
injunctive social norms (*H1.1c, H1.2c*)	☑	☑
hedonic goals (*H1.1d, H1.2d*)	☑	☑
gain goals (*H1.1e, H1.2e*)	☑	☑
age	☑	☑
gender	☑	☑
Independent variable-setting–specific		
perceived behavioral difficulty at home (*H1.1f*)	☑	☐
perceived behavioral difficulty at tailgating (*H1.2f*)	☐	☑
habitual environmental behavior at home	☑	☐
habitual environmental behavior at tailgating	☐	☑

Since gender is a categorical variable with two different categories, one dummy variable was created to be included in the regression model. A dummy variable, *MALE*, was created and assigned a value of one when the survey participant's gender was male, and a value of zero when the participant gender was female. Before performing the regression analyses, the researcher examined associations among variables. Pearson's correlations were examined to assess the association between pro-environmental behaviors, with the variables measured by a Likert-type scale: *personal moral norms (PMN), descriptive social norms (DSN), injunctive social norms (DSN), hedonic goals (HG), gain goals (GG), perceived behavioral difficulty (PBD), and habitual environmental behavior (HABIT),* and the continuous variable of *AGE*. With the dummy variable, *MALE*, a group comparison was conducted.

Table 18 Descriptive statistics of variables in regression analysis

Variable (Descriptive statistics)		Relationship	
		Pearson's correlation coefficient	
		Recycling at home	Recycling at tailgating
PMN	(mean=4.19, S.D.=0.85)	**.503****	**.245****
DSN	(mean=2.98, S.D.=0.81)	**.221****	**.367****
ISN	(mean=4.29, S.D.=0.93)	**.388****	**.200****
HG	(mean=3.43, S.D.=1.04)	**.451****	**.307****
GG	(mean=3.84, S.D.=1.04)	**.369****	**.241****
PBD_H	(mean=2.38, S.D.=1.53)	**-.139****	.062
PBD_T	(mean=3.09, S.D.=1.25)	.200	-.072
HABIT_H	(mean=4.09, S.D.=0.96)	**.514****	**.218****
HABIT_T	(mean=3.13, S.D.=1.24)	**.171****	**.569****
AGE	(mean=42.88, S.D.=15.93)	.052	.066
		t-value	
		Recycling at home	Recycling at tailgating
MALE	(44.9%)	-1.45	-1.38

Note.
1) PMN=personal moral norms; DSN=descriptive social norms; ISN=injunctive social norms; HG=hedonic goals, GG=gain goals, PBD_H=perceived behavioral difficulty at home, PBD_T=perceived behavioral difficulty at tailgating, HABIT_H=habitual environmental behavior at home, HABIT_T=habitual environmental behavior at tailgating. All variables listed were measured with a 5-point Likert type scale.
2) MALE has a value of 1 for males and 0 for females
3) **Significance level of 1% (2-tailed).

Results of correlation analyses revealed the presence of relationships between recycling behavior at home with independent variables *PMN, DSN, ISN, HG, GG, PBD_H* and *HABIT*. Similarly, correlations between recycling behavior at tailgating with independent variables *PMN, DSN, ISN, HG, GG,* and *HABIT* were significant, while the correlation between the recycling behavior at tailgating and *PBD_T* was not statistically significant. There were no significant correlations between recycling behavior and *AGE* (see Table 18). To investigate group differences of the *MALE* variable, an independent *t*-test was conducted. The results showed no significant difference (*p*-value was greater than 0.05). Although the mean difference of recycling behaviors was not statistically significant, patterns of the mean difference were observed by

looking at *t*-values (see Table 18). *MALE* has a value of 1 for males and 0 for females, and the negative *t*-value means that the males' mean values of *recycling at home* (mean=4.15) and *recycling at tailgating* (mean=2.97) were lower than females' mean values of *recycling at home* (mean=4.31) and *recycling at tailgating* (mean=3.15).

Assumptions Test

The assumptions assessed for conducting multiple regression analysis were: normality, linearity; homoscedasticity; independence of errors; and absence of multicollinearity. The assumptions were met for regression analysis:

The **normality** assumption was examined in terms of skewness and kurtosis. Skewness within the range -3 to 3, and a kurtosis score of -10 to 10 are considered acceptable (Kline, 1998). All items measuring the independent and dependent variables used in the analyses of this section were determined to be within these acceptable ranges, denoting that there were no significant indications of non-normality (see Appendix K). The assumption of **linearity** refers to a straight-line relationship between two variables, and linearity was diagnosed from bivariate scatterplots between pairs of study variables (Tabachnick & Fidell, 2007). All the variables entered in the analyses showed linearity. The assumption of **homoscedasticity** means that the variance of the residual terms should be constant at each level of the predictor variable(s) (Field, 2005). Homoscedasticity can be checked by case-wise diagnostics. In case-wise diagnostics, it is expected that 95% of the cases in the data will have standardized residuals within ±2.5. In this study, fewer than 5% of the cases were outside of standardized residuals ±2.5. The assumption of **independent errors** means that the residual terms should be uncorrelated for any two observations. Independence of errors can be checked with the Durbin-Watson test, which tests

for serial correlation between errors. A test statistic between 0 and 4 means that the residuals are uncorrelated (Fields, 2005). In this study, the values of a Durbin-Watson test ranged between 1 and 3, which met the assumption for independent errors. Finally, the assumption of an absence of **multicollinearity** is that there is no strong correlation between two or more predictors in a regression model (Field, 2005). Existence of multicollinearity could produce unstable estimates in regression analysis. The assumption of an absence of multicollinearity was assessed by obtaining correlation coefficients for each of the predictor variables. Correlation coefficients of above 0.8 indicate the possible existence of multicollinearity. The correlation coefficients among all the predictors in this study are below 0.8, which met this assumption. The variance inflation factor (VIF) of all the variables was also assessed. All VIF values ranged between 1.02and 2.88, which is below the commonly recommended cut-off threshold of 5-10. Accordingly, the assumption of absence of multicollinearity was met.

Hypothesis Test

Using the independent variables described above, two separate multiple regression analyses were conducted to examine the underlying mechanism of recycling behavior at home (Model 1), and the mechanism of recycling behavior at tailgating (Model 2). Results of the two regression models are presented in Table 19.

Table 19 Results of regression full models for recycling behavior at home and at tailgating

	Model 1 Standardized coefficients			**Model 2** Standardized coefficients		
Variable	*β*	*t*-value	*p*-value	*β*	*t*-value	*p*-value
PMN	**.183****	2.672	.009	-.040	-.606	.545
DSN	.057	1.256	.210	**.175*****	3.914	.000
ISN	-0.13	-.216	.829	.010	.155	.996
HG	**.144***	2.387	.017	.080	1.371	.171
GG	.026	.433	.665	.034	.599	.550
PBD	**-.151*****	-3.525	.000	-.044	-1.064	.288
HABIT	**.352*****	7.122	.000	**.503*****	11.317	.000
MALE	.010	.247	.805	-.058	-1.406	.161
AGE	-.010	-.241	.809	.012	.289	.773
	Model Fit: R^2 = .370, adjusted R^2 = .355 F = 24.452, p < .001			Model Fit: R^2 = .385, adjusted R^2 = .370 F = 26.249, p < .001		

Note.
1) PMN=personal moral norm; DSN=descriptive social norms; ISN=injunctive social norms; HG=hedonic goals; GG=gain goals; PBD=perceived behavioral difficulty; HABIT=habitual environmental behavior; MALE=study participant's gender is male, AGE=study participant's age
2) Significance levels: * < .05, ** < .01, *** < .001

Model 1 explained approximately 36% of the variability in study participants' recycling behavior at home (R^2 = .370, adjusted R^2 = .355, F = 24.452, p < .001). For testing the hypotheses in Model 1, personal moral norms (H1.1a: β = .183, t = 2.672, p < .01), and hedonic goals (H1.1d: β = .144, t = 2.287, p < .05) positively influenced, and perceived behavioral difficulty (H1.1f: β = -.151, t = -3.525, p < .001) negatively influenced sport event attendees' recycling behavior at home. Out of six hypotheses in Model 1, three hypotheses, H1.1b (effect of descriptive social norms on recycling behavior at home), H1.1c (effect of injunctive social norms on recycling behavior at home), and H1.1e (effect of gain goals on recycling behavior at home) were rejected.

Model 2 explained approximately 37% of the variability in study participants' recycling behavior at tailgating (R^2 = .385, adjusted R^2 = .370, F = 26.249, p < .001). For testing

hypotheses in Model 2, descriptive social norms (H1.2b: $\beta = .175$, $t = 3.914$, $p < .001$) positively influenced study participants' recycling behavior at tailgating. Out of the six hypotheses, the remaining five hypotheses, H1.2a (effect of personal moral norms), H1.2c (effect of injunctive social norms), H1.2d (effect of hedonic goals), H1.2e (effect of gain goals), and H1.2f (effect of perceived behavioral difficulty) were not supported.

Among the control variables, habitual environmental behavior had a significant influence on recycling behavior both at home ($\beta = .352$, $t = 7.122$, $p < .001$) and at tailgating ($\beta = .503$, $t = 11.317$, $p < .001$). Yet, gender and age did not have a significant influence on recycling behavior either at home or at tailgating.

This study also performed multiple regressions, including only the significant variables: *PMN, HG, PBD,* and *HABIT* in Model 1 (see Table 20), *DSN,* and *HABIT* in Model 2 (see Table 21). The results were unchanged in terms of the model significance. The adjusted R-square was slightly increased in both Model 1 (adjusted R^2 = .355 in full model, adjusted R^2 = .362 in reduced model), and Model 2 (adjusted R^2 = .370 in full model, adjusted R^2 = .376 in reduced model). Thus, for any practical application, the reduced models may be recommended over the full models.

Table 20 Results of reduced regression model for recycling behavior at home

	Model 1 Standardized coefficients		
Variable	*β*	*t*-value	*p*-value
PMN	**.191**	3.394**	.001
HG	**.164**	3.303**	.002
PBD	**-.138**	-3.358**	.001
HABIT	**.354**	7.373***	.000
Model Fit: R^2 = .368, adjusted R^2 = .362, F = 55.667, p < .001			

Note.
1) PMN=personal moral norms, HG=hedonic goals, PBD=perceived behavioral difficulty, HABIT=habitual environmental behavior.
2) Significance levels: * < .05, ** < .01, *** < .001

Table 21 Results of reduced regression model for recycling behavior at tailgating

	Model 2 Standardized coefficients		
Variable	*β*	*t*-value	*p*-value
DSN	**.227**	5.491***	.000
HABIT	**.509**	12.341***	.000
Model Fit: R^2 = .379, adjusted R^2 = .376, F = 121.562, p < .001			

Note.
1) DSN=descriptive social norms, HABIT=habitual environmental behavior.
2) Significance levels: * < .05, ** < .01, *** < .001

In summary, the results of the two separate regression models indicated that the underlying mechanism of recycling behavior in daily life was differentiated from the same recycling behavior in an event setting. Higher levels for moral norms and hedonic goals, with lower levels of perceived behavioral difficulty suggested a higher level of behavioral engagement for recycling in a daily life setting. However, those variables predicting recycling behavior in daily life did not contribute to predicting recycling behavior in an event setting. In a sport event setting, higher levels of descriptive social norms suggested sport event attendees' have higher levels of engagement in recycling behavior.

Research Question 2

The purpose of this section is to answer Research Question 2, "Are sport event attendee's differences in pro-environmental behavior between in daily life and in an event setting affected by event attendees' characteristics (i.e., *event attendee perceived destination environmental responsibility, event attendee type, recreation involvement, and experience-use history*)? To answer the research question, this section addresses the following:

1. Dependent and independent variables were constructed. The assumptions for conducting analyses were assessed. The mean and standard deviation values were calculated and compared before conducting the analyses.
2. A paired-sample *t*-test was conducted to examine the first hypothesis, which assesses whether sport event attendees' engagement in pro-environmental behavior decreases in an event setting, compared to their behavior in their daily life setting.
3. A mixed between-within subjects ANOVA was employed, which combines a between-subjects ANOVA and repeated measures ANOVA into one analysis. Four separate mixed between-within subjects ANOVAs were conducted to examine the rest of the four hypotheses under Research Question 2.

Paired-sample t-test

As described in the measurement section in Chapter 3, pro-environmental behavior (*PEB*) was measured with four items of recycling in a daily life setting, and also repeatedly measured with the four items of recycling in the sport event setting. Four separate paired-sample *t*-tests were conducted with the four repeatedly measured items. One-tailed tests were performed to

examine whether the means of *PEB* at home were larger than the means of *PEB* at tailgating. The normality assumption for paired-sample *t*-tests was examined in terms of skewness and kurtosis. There were no significant indications of non-normality with the eight dependent variables used in the analyses (see Appendix K).

Results showed that study participants' mean score with the item of "recycling non-deposit glass" was smaller in an event setting (Mean = 3.18, S.D. = 1.47) compared to their behavior in a daily life setting (Mean = 4.18, S.D. = 1.31), t (404) = 12.553, $p < 0.001$ (one-tailed), Cohen's $d = 0.713$. An effect size of Cohen's d is a measure that describes the magnitude of the difference between two means, and Cohen (1988) proposed rules of thumb for interpreting effect size of Cohen's d: a "small" effect size is .20, a "medium" effect size is .50, and a "large" effect size is .80.The first *t*-test result indicated that mean score of pro-environmental behavior decreased in the event setting compared to in daily life setting with a medium effect size.

between two settings were Study participants' mean score with the item of "recycling non-deposit aluminum cans" was smaller in an event setting (Mean = 3.21, S.D. = 1.48) compared to their behavior in a daily life setting (Mean = 4.30, S.D. = 1.24), t (404) = 14.177, $p < 0.001$ (one-tailed), $d = 0.800$. The mean score for the item "recycling plastic" was also smaller in an event setting (Mean = 3.06, S.D. = 1.42) compared to their behavior in a daily life setting (Mean = 4.29, S.D. = 1.60), t (404) = 16.463, $p < 0.001$ (one-tailed), Cohen's $d = 0.974$. Finally, the mean score with the item "recycling paper" was smaller in an event setting too (Mean = 2.83, S.D. = 1.45) compared to their behavior in a daily life setting (Mean = 4.20, S.D. = 1.25), t (404) = 17.566, $p < 0.001$ (one-tailed), Cohen's $d = 1.019$. Together, the paired-sample *t*-tests supported hypotheses 2.1.

Mixed between-within subjects ANOVA

Mixed between-within subjects ANOVA was employed to examine whether recycling behavior scores changed across at home and at tailgating settings differently, depending on the event attendees' characteristics.

Variable Description

Study participants' pro-environmental behavior (*PEB*) was a dependent variable in the mixed between-within subjects ANOVA. A 2 x 2 mixed between-within subjects ANOVA (mixed ANOVA hereafter) is one that has two levels between a factor (e.g., event attendee type: Locals and Tourists) and two levels within a factor (e.g., setting: home and tailgating). Four separate mixed ANOVAs were conducted. The dependent variable and the within factor remained the same across all four analyses. Four between factors (i.e., *event attendee perceived destination environmental responsibility, event attendee type, recreation involvement, and experience-use history*) were used for each of the mixed ANOVAs. Ancillary variables (i.e., age and gender as the demographic characteristics, personal moral norms as the psychographic characteristic) were examined to look at any potential associations between these variables and recycling behavior before conducting the main analyses.

Dependent Variable and Within-Factor. Pro-environmental behavior *(PEB)* was constructed and used as a dependent variable. As described in the measurement section in Chapter 3, *PEB* was measured with four items of recycling in the daily life setting, and also repeatedly measured with the four items of recycling in the sport event setting. To reduce the number of measurement items to a smaller number of factors, the eight items were factor analyzed (see the results of the third EFA in the section on Research Question 1 in this chapter).

As a result of the EFA, two factors loaded by all eight items were extracted: Factor 1 represents "recycling behavior at home" and Factor 2 represents "recycling behavior at tailgating." Items under each factor were averaged to form a dependent variable measured repeatedly across two settings *(SET)*, and used in further analyses.

Between-Factor: Destination Environmental Responsibility (DER). *DER* was constructed and used as a between-factor for the first mixed ANOVA. As described in the measurement section in Chapter 3, *DER* was measured with three items. The three items were originally measured using a Likert-type scale, and were then converted into a categorical variable for the analysis. The primary purpose of this analysis was to assess whether behavioral inconsistency across settings was associated with DER. For purposes of analysis, study participants were divided into two groups. Specifically, study participants were split into "Low" and "High" groups using a median split. A median split is one method for turning a continuous variable into a categorical one. The three items, measured on a 5-point Likert-type scale, were first averaged. Then, study participants who scored at or below the median value (=3.0) were put in the category "Low," while participants who scored above the median were categorized in the "High" group. As a result of dichotomization, a between-factor with two groups, *Low DER* (n=228) and *High DER* (n=176), was constructed and used in the first 2 x 2 mixed ANOVA.

Between-Factor: Sport Event Attendee Type (TYPE). *TYPE* was constructed and used as a between-factor for the second mixed ANOVA. As described in the measurement section in Chapter 3, study participants were categorized into two groups—tourist and non-tourist—utilizing zip codes and MSU affiliation. "Tourists" refers to those tailgaters who were neither local residents living in the vicinity of the destination (i.e., Clinton, Eaton, or Ingham County), nor MSU community members; all others were categorized as "Non-tourist." A between-factor

with two groups, *Tourist TYPE* (n=124) and *Non-tourist TYPE* (n=281) was constructed and used in the second 2 x 2 mixed ANOVA.

Between-Factor: Recreation Involvement (RI). *RI* was constructed and used as a between-factor for the third mixed ANOVA. As described in the measurement section in Chapter 3, RI was measured with five items using a Likert-type scale. Like the *DER* variable construction described above, the five items were averaged and converted into a categorical variable by following the median-split process. Study participants who scored at or below the median value (=3.2) were put in the category "Low," while participants who scored above the median were categorized in the "High" group. As a result of dichotomization, a between-factor with two groups, *Low RI* (n=216) and *High RI* (n=188), was constructed and used in the third 2 x 2 mixed ANOVA.

Between-Factor: Experience-use History (EUH). *EUH* was constructed and used as a between-factor for the fourth mixed ANOVA. As described in the measurement section in Chapter 3, EUH was measured with four items. Following the suggestion by Hammitt and his colleagues (2004), study participants were categorized into four groups—Veterans, Locals, Visitors, and Beginners. Specific steps included: (1) summing the years of activity at the study site with the frequency of the last three years' activity at the study site, then divided into "Low" and "High" groups on the median value of the sum. Medians are used as the bases of segmentation rather than means because of some outlier values for some extremely experienced recreationists; (2) following the same procedure for activity at other sites; and (3) identifying four combinations of EUH groups (see Figure 5).

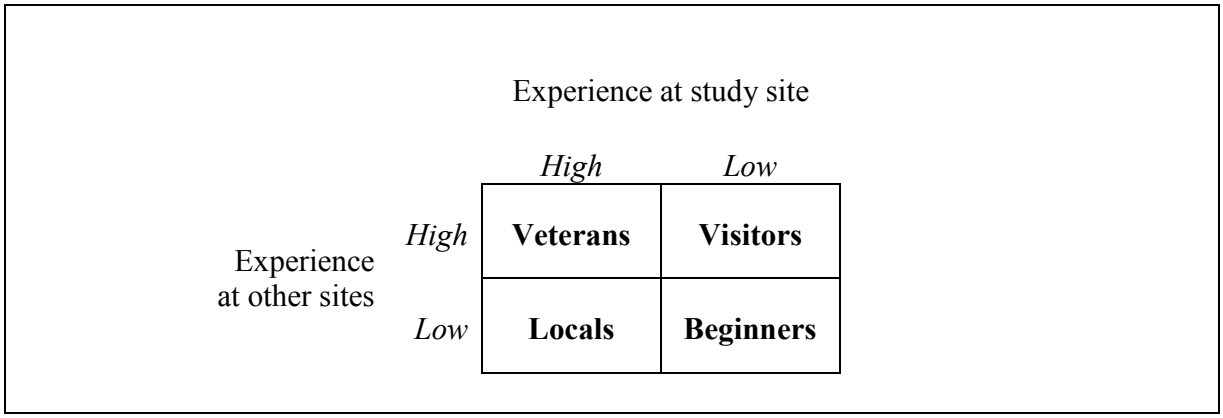

Figure 5 Four groups in experience-use history

As a result, a between-factor with four groups, *Veterans EUH* (n=86), *Locals EUH* (n=89), *Visitors EUH* (n=45), and *Beginners EUH* (n=145), was constructed and used in the fourth 4 x 2 mixed ANOVA. Variables used in four mixed between-within subjects ANOVAs are presented in Table 22.

Table 22 Variables in mixed between-within subjects ANOVAs

Analysis (Hypothesis)	Dependent variable	Within-subject factor	Between-subject factor
Analysis 1 (H2.2)	Self-reported pro-environmental behavior (PEB)	Setting (*SET*): at-home and at-tailgating	*DER*: Low and High group
Analysis 2 (H2.3)			*TYPE*: Tourist and Non-tourist
Analysis 3 (H2.4)			*RI*: Low and High group
Analysis 4 (H2.5)			*EUH*: Veterans, Locals, Visitors, and Beginners

Note.
DER=destination environmental responsibility; TYPE=event attendee type; RI=recreation involvement; and EUH=experience-use history

Assumptions Test

The assumptions that were assessed for conducting mixed between-within ANOVAs were: normality, homogeneity of variance, and homogeneity of covariance. The assumptions were met for the analysis.

The **normality** assumption was examined in terms of skewness and kurtosis of the dependent variable. A skewness within the range -3 to 3 and a kurtosis score of -10 to 10 are considered acceptable (Kline, 1998). Dependent variables used in the analyses in this section were determined to be within these acceptable ranges, indicating there were no significant indications of non-normality (see Appendix K). Levene's Test of Equality of Variances was conducted to assess that the variances of each variable are equal across groups **(homogeneity of variance).** If Levene's test is significant, with $p < 0.05$ as a criterion, this means that the assumption is violated (Field, 2005). If the assumption of homogeneity of variance is violated, the researcher could not be confident that the observed mean differences were attributable to the group categories. For all employed analyses, the Levene's tests were not significant with a $p > 0.05$, suggesting the assumptions of equal variance were met. Box's Test of Equality of Covariance Matrices (Box's *M*) was performed to check the assumption of **homogeneity of covariance** across the groups, using $p < 0.001$ as a criterion. For all analyses of this section, none of the Box's *M* were significant (all *p*s > 0.001), suggesting that the assumptions of homogeneity of covariance were met.

Preliminary Analysis

Preliminary analyses were conducted to examine: whether study participants' demographic (i.e., age and gender), psychographic (i.e., personal moral norms), and behavioral

(recycling behavior at home) profiles differed between groups in each of the between-subject factors (see Table 23.). If study participants in one group (e.g., *High DER*) did not differ from the participants in another group (e.g., *Low DER*) in their profiles, then the research would draw a conclusion from the results of the mixed ANOVA: that the amount of variability in the dependent variable can be explained by the independent variable, and would not be affected by other factors such as age and gender.

Table 23 Demographic, psychographic, and behavioral profiles between groups

	Demographics		Personal moral norms	Recycling behavior at home
	Age (Mean)	Male (%)	Mean (S.D.)	Mean (S.D.)
DER				
Low (n=228)	43	44%	3.90 (1.00)	4.18 (1.21)
High (n=176)	43	46%	4.06 (0.91)	4.32 (0.96)
TYPE				
Tourist (n=124)	49	46%	4.02 (0.93)	4.28 (1.08)
Non-tourist (n=281)	40	42%	3.87 (1.03)	4.16 (1.17)
RI				
Low (n=216)	43	40%	3.91 (0.97)	4.17 (1.16)
High (n=188)	43	51%	4.05 (0.96)	4.32 (1.04)
EUH				
Veterans (n=86)	53	63%	3.80 (1.03)	4.28 (1.17)
Locals (n=89)	47	43%	3.97 (1.06)	4.28 (1.00)
Visitors (n=45)	43	44%	4.14 (0.76)	4.44 (1.05)
Beginners (n=145)	36	46%	4.03 (0.88)	4.28 (1.05)

Note.
DER=destination environmental responsibility; TYPE=event attendee type; RI=recreation involvement; and EUH=experience use history

First, the means of age between/among groups were compared by employing independent sample *t*-tests (two-tailed) for two group comparisons, and a one-way ANOVA for four group comparisons. The results showed that study participants' age was not significantly different

between *Low* and *High DER* (t [398] = 0.126, p = 0.900) or between *Low* and *High RI* (t [398] = 0.024, p = 0.981); yet the means of age were significantly different between *Tourist* and *Non-tourist TYPE* (t [399] = -5.559, $p < .05$), and among *EUH* groups (F [3, 357] = 26.736, $p < .05$). Second, percentages of male participants between/among groups were compared by employing chi-square tests (two-tailed). The results showed that gender profiles were not significantly different between *Low and High DER* groups (χ^2[2, N=404] = 0.119, p = 0.730), or between *Tourist and Non-tourist TYPE* (χ^2[2, N=405] = 0.651, p = 0.420); the percentages of gender profile were significantly different, however, between *Low and High RI* (χ^2[2, N=404] = 4.668, $p < 0.05$), and among *EUH* groups (χ^2[4, N=365] = 12.783, $p < 0.05$). Third, the means of personal moral norms between/among groups were compared. The results showed that study participants' personal moral norms scores were not significantly different: between *Low* and *High DER* (t [399] = -1.578, p = 0.115); between *Tourist and Non-tourist TYPE* (t [400] = 1.468, p = 0.143); between *Low and High RI* (t [399] = -1.385, p = 0.167); and among *EUH* groups (F [3, 359] = 1.529, p = 0.207). Fourth, the means of recycling behavior at home between/among groups were compared. The results showed that study participants' recycling behavior scores in daily life were not significantly different: between *Low* and *High DER* (t [402] = -1.223, p = 0.222); between *Tourist* and *Non-tourist TYPE* (t [403] = 0.974, p = 0.331); between *Low* and *High RI* (t [402] = -1.407, p = .160 and among *EUH* groups (F [3, 361] = 0.487, p = 0.691).

Result of the preliminary analyses showed that study participants between groups with four between-subjects factors were homogeneous in terms of their personal moral norms, and recycling behavior at home. However, those study participants who were tourists (i.e., *Tourist TYPE*) and who were experienced tailgaters (i.e., *Veterans EUH*) were slightly older compared to non-tourists and less experienced tailgaters. Also, more male participants were observed in the

high involvement group (i.e., *High RI*) and as experienced tailgaters (i.e., *Veterans EUH*). From these results, age and gender were known to potentially influence the dependent variable. Accordingly, the researcher controlled for the influence of age and gender by including them as a covariance in the main analyses.

Hypothesis Test

Four mixed between-within subjects ANOVAs were conducted to test the hypotheses H2.2 through H2.5. For each model of the mixed ANOVAs, Wilk's Lambda (Λ) test was employed to assess the model fit. Partial eta squared (η_p^2) was reported as a measure of effect size for group mean differences to show the proportion of variance in the dependent variable explained by the independent variable. A commonly used guideline for interpreting effect size was applied, where .01 indicated a small effect, .06 indicated a moderate effect, and .14 indicated a large effect (Cohen, 1988). The interaction effect was assessed to test whether the impact of within-subject factors (i.e., *SET*) on recycling behavior are influenced by between-subject factors (e.g., *DER*), after controlling for the effects of participants' age and gender. If no significant interaction effects were observed, then the main effects of the between-subject factor and the within-subject factor would be assessed. If significant interaction effects were observed, the researcher can conclude that event attendees are less likely to engage in pro-environmental behavior at an event setting compared to an in-home setting. However, the degree of such change is different, depending on attendee characteristics such as their perception about destination environmental responsibility.

The first 2 x 2 (*DER* x *SET*) mixed between-within subjects ANOVA was conducted to evaluate the impact of Destination Environmental Responsibility (*DER*: Low and High group) on study participants' recycling behavior scores across *SET* (at home and at tailgating), after controlling for the effects of age and gender. Results showed that the main effect of *DER* (F [1, 396] = 34.410, $p < 0.001$, $\eta_p^2 = 0.080$) and the main effect of *SET* (F [1, 396] = 34.272, $p < 0.001$, $\eta_p^2 = 0.080$) were significant. The results also revealed a significant interaction between *DER* and *SET* with a moderate effect size ($\Lambda = 0.914$, F [1, 396] = 37.367, $p < 0.001$, $\eta_p^2 = 0.086$). There was no effect of age and gender on behavioral change across settings. As illustrated in Figure 6, study participants' recycling behavior scores at tailgating decreased compared to their behavior at home, and the rates of decrease were different between the *Low* and *High DER* groups.

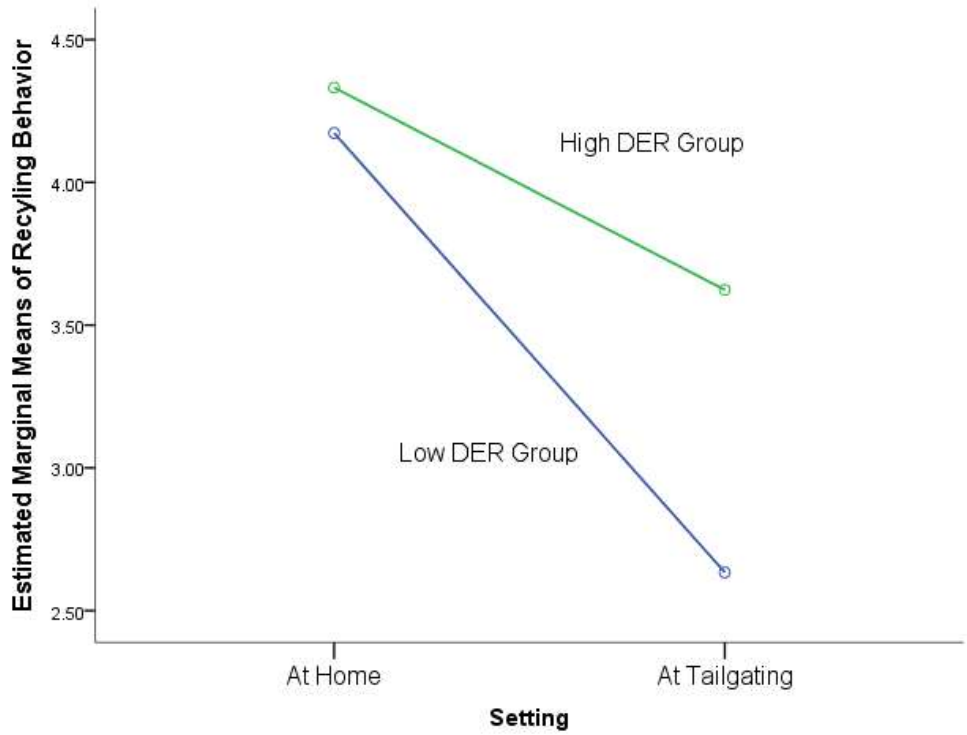

Figure 6 Recycling scores at home and at a tailgating setting between DER groups

The second 2 x 2 (*TYPE* x *SET*) mixed between-within subjects ANOVA was conducted to evaluate the impact of Sport Event Attendee Type (*TYPE*: Tourist and Non-tourist) on study participants' recycling behavior scores across *SET* (at home and at tailgating), after controlling for the effects of age and gender. Results showed that there was no main effect of *TYPE* on recycling behavior (F [1, 397] = 0.045, p = 0.882), although the main effect of *SET* (F [1, 397] = 23.039, $p < 0.001$, $\eta_p^2 = 0.055$) was significant. There was a significant interaction between *TYPE* and *SET* with a moderate effect size ($\Lambda = 0.987$, F [1, 397] = 5.311, $p < 0.05$, $\eta_p^2 = 0.13$). Age and gender had no effect on behavioral change across settings. As illustrated in Figure7, study participants' recycling behavior scores at tailgating decreased compared to their behavior at home, and the rates of decrease were different between the *Tourist* and *Non-tourist* groups.

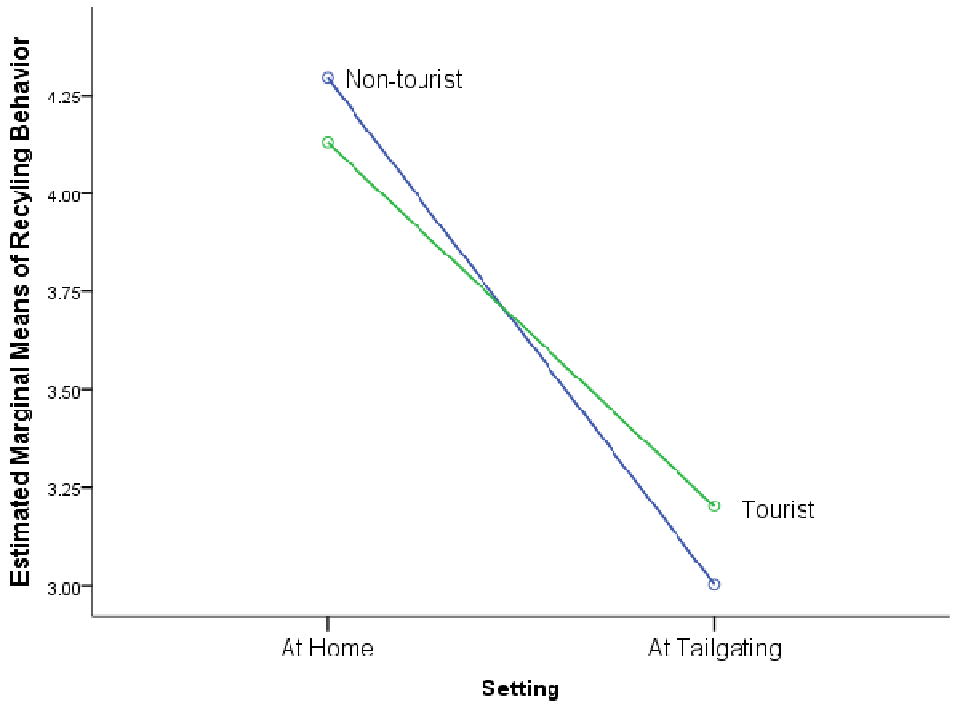

Figure 7 Recycling scores at home and at a tailgating setting between Tourist and Non-tourist groups

The third 2 x 2 (*RI* x *SET*) mixed between-within subjects ANOVA was conducted to evaluate the impact of Recreation Involvement (*RI*: Low and High group) on study participants' recycling behavior scores across *SET* (at home and at tailgating), after controlling for the effects of age and gender. Results showed that there was no main effect of *RI* on recycling behavior (F [1, 396] = 0.989, p = 0.321), although the main effect of *SET* (F [1, 396] = 36.754, $p < 0.001$, η_p^2 = 0.085) was significant. The result revealed no significant interaction between *RI* and *SET* (Λ = 0.998, F [1, 396] = 0.827, p = .364). As illustrated in Figure 8, study participants' recycling behavior scores at tailgating decreased compared to their behavior at home, yet the decreasing rates were not different between the *Low* and *High RI* groups.

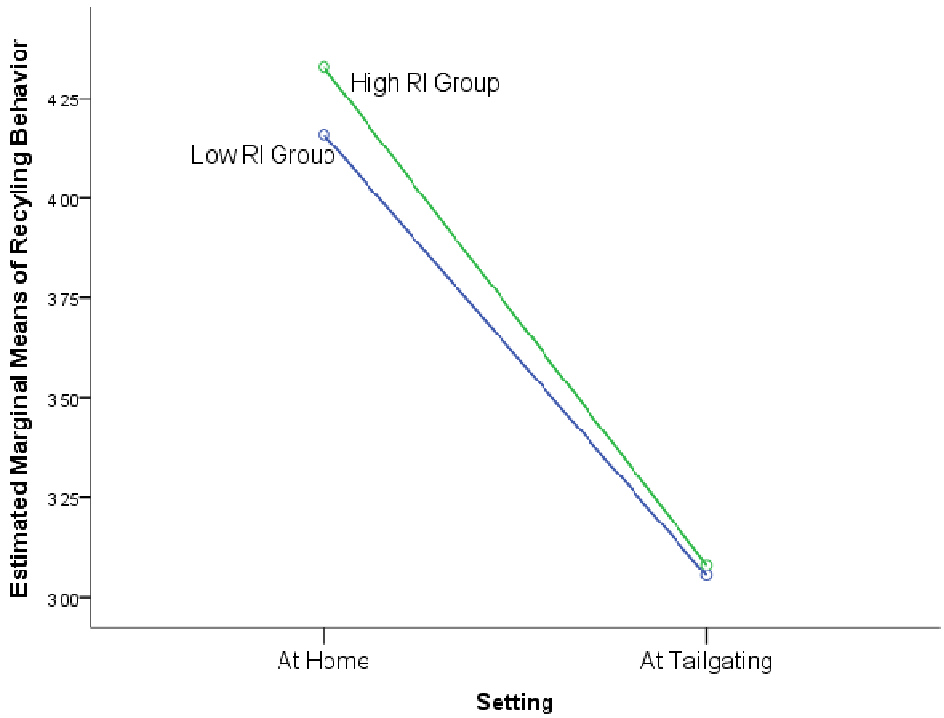

Figure 8 Recycling scores at home and at a tailgating setting between RI groups

The fourth 4 x 2 (*EUH* x *SET*) mixed between-within subjects ANOVA was conducted to evaluate the impact of Experience-use History (*EUH*: Veterans, Locals, Visitors, Beginners) on study participants' recycling behavior scores across *SET* (at home and at tailgating), after controlling for the effects of age and gender. Results showed that there was no main effect of *EUH* on recycling behavior (F [3, 355] = 1.393, p = 0.245), although the main effect of *SET* (F [3, 355] = 37.513, $p < 0.001$, $\eta_p^2 = 0.096$) was significant. The result revealed no significant interaction between *EUH* and *SET* ($\Lambda = 0.987$, F [3, 355] = 1.516, p = .210). As illustrated in Figure 9, study participants' recycling behavior scores at tailgating decreased compared to their behavior at home, yet the decreasing rates were not different among *EUH* groups.

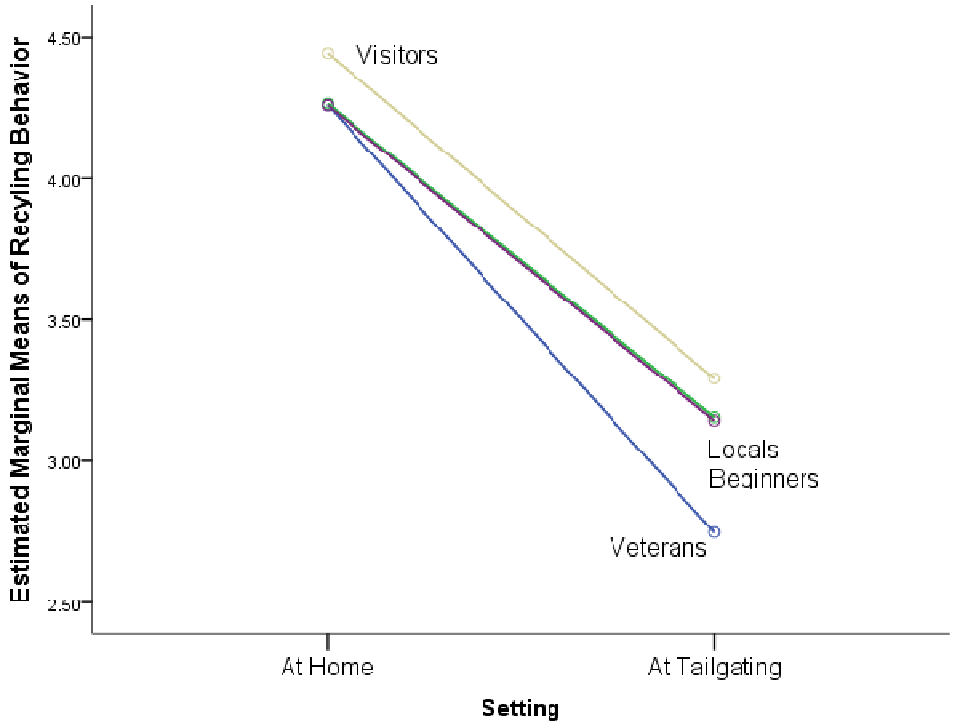

Figure 9 Recycling scores at home and at a tailgating setting between EUH groups

In summary, results of the paired-sample *t*-tests, and four separate mixed between-within subjects ANOVAs indicated that study participants' self-reported recycling behavior scores decreased from home to the tailgating setting. Further, they decreased more dramatically among those participants who had a low level of perceived destination environmental responsibility, and among those who were in the Non-tourist group. However, the decreasing rate of recycling behavior scores from home to a tailgating setting did not differ depending on recreation involvement and experience-use history.

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter presents five sections: (1) Summary of the Study; (2) Discussion of Key Findings and Theoretical Contributions; (3) Managerial Implications; (4) Limitations and Future studies; and (5) Conclusion.

Summary of the Study

The main purpose of the study was to develop and test a model to understand whether and how sport event attendees are motivated to engage in pro-environmental behavior in their daily lives versus in a tourism setting. The study employed a quantitative research method approach. On-site intercept surveys were administered on the first three MSU home football game days in the fall of 2013 to target sport event attendees, or tailgaters. This was followed by online and postal follow-up surveys. Self-administered surveys were utilized to measure tailgaters' demographic and tailgating characteristics, underlying psychological constructs of environmental behaviors, and self-reported pro-environmental behavior in daily life and in event settings. A total of 405 responses were used for statistical analyses and two research questions with 17 hypotheses were examined.

To answer the first research question, this study examined the linear relationships among personal moral norms, descriptive social norms, injunctive social norms, hedonic goals, gain goals, perceived behavioral difficulty, and recycling behavior in daily life and in a sport event setting. Two regression models were analyzed to examine different effects of psychological constructs on environmental behavior across different settings. The results support the idea that

underlying mechanisms of environmental behavior differ between two settings. Specifically, the first regression model suggested that personal moral norms *(H1.1a)*, hedonic goals *(H1.1d),* and perceived behavioral difficulty *(H1.1f)* have effects on pro-environmental behavior in daily life, and these effects were independent of any effects of age, gender, and habitual environmental behavior, as controlled for in the analysis. There were not significant effects of descriptive social norms *(H1.1b),* injunctive social norms *(H1.1c),* and gain goals *(H1.1e)* on pro-environmental behavior in daily life. The second regression model suggested that descriptive social norms *(H1.2b)* as an underlying motive contributed significantly to the variance of environmental behavior in the sport event setting, after controlling for age, gender, and habitual environmental behavior. There were no significant effects of personal moral norms *(H1.2a),* injunctive social norms *(H1.2c),* hedonic goals *(H1.2d),* gain goals *(H1.2e),* and perceived behavioral difficulty *(H1.2f).* The two separate regression models together answered the first research question. Study findings suggest that predictive roles of select psychological constructs of environmental behavior differ in predicting sport event attendee's pro-environmental behavior in this context.

An additional purpose of the present study was to examine whether sport event attendees' characteristics (i.e., event attendee perceived destination environmental responsibility, event attendee types, recreation involvement, and experience-use history) moderate the behavioral inconsistency across two different settings. This study assessed the behavioral discrepancy between daily life and a sport event setting by employing paired sample *t*-tests. The study further examined the interaction effects of event attendees' characteristics and behavioral settings on discrepancies in pro-environmental behavior in both settings by employing mixed between-within subjects ANOVAs. The results revealed that attendees' engagement in pro-environmental behavior decreases in an event setting compared to that of their daily life setting

(H2.1). Furthermore, the degree of decrease in sport event attendees' pro-environmental behavior from daily life to the event setting is different depending on event attendees' perception of destination environmental responsibility *(H2.2)* and event attendee types *(H2.3)*. Recreation involvement (H2.4) and experience-use history (H2.5) were not found to have moderate effects on the behavioral discrepancy between in daily life versus in a tourism context. These findings suggested that sport event attendees were less likely to engage in pro-environmental behavior in event settings compared to their behavior in daily life, and this behavioral discrepancy was moderated by event attendees' characteristics.

Discussion of Key Findings and Theoretical Contributions

Psychological Constructs of Environmental Behavior

The first regression analysis indicated that personal moral norms and perceived behavioral difficulty were underlying motives of pro-environmental behaviors in daily life. This finding is consistent with those reported by a number of other studies (e.g., Andersson & von Borgstede, 2010; Do Valle, Rebelo, Reis, & Menezes, 2005; Ramayah, Lee, & Lim, 2012; Sidique, Lupi, & Joshi, 2010 for recycling behavior). Together with previous literature this study suggests that the Norm Activation Model and Value-Belief-Norm theory appear to be successful in explaining the role of personal moral norms as a mechanism of pro-environmental behavior in a daily life setting. Another stream of previous research explains that the explanatory power of personal moral norms in environmental behavior engagement becomes insignificant when behavior change is costly in terms of effort, inconvenience, money, or time (e.g., Guagnano et al.,

1995; Diekmann & Preisendörfer, 2003). Where recycling at home is generally considered a "low-cost" behavior (Diekmann & Preisendörfer, 2003), this same behavior in a tourism context may require increased effort and become a "high-cost" action. This study finding still supports the previous literature addressing that personal moral norms and perceived behavioral difficulty together are underlying mechanisms of environmental behavior in the context of daily life. However at the same time, these two underlying motives become insignificant when predicting the same behavior in a tourism context. Therefore, the previous research is supported that personal moral norms and perceived behavioral difficulty are underlying mechanisms of environmental behavior when the behavior requires low cost.

Another finding from the first regression analysis is that hedonic goals also play an important role in predicting environmental behavior in individuals' daily life. In the environmental behavior research, relationships between affect and environmental behavior have been addressed in a few studies (e.g., De Young, 1986; Hartmann & Apaolaza-Ibáñez, 2008; Vining & Ebreo, 1990). Yet, empirical study findings about the hedonic goals as underlying mechanisms of environmental behavior are inconclusive. Some researchers found that the emotional motive is significantly related to environmental behavior, even when moral norms are controlled for (e.g., Smith, Haugtvedt, & Petty, 1994). Other researchers discuss that emotional benefit has effects on environmental behavior only when the behavior is difficult to undertake (see Lindenberg & Steg, 2007 for discussion). On a continuing discussion about the role of hedonic goals in predicting environmental behavior, this finding provides support that they are important underlying motives of pro-environmental behavior in daily life, even after controlling for moral norms and perceived behavioral difficultly. The present study provides strong empirical evidence that individuals' decisions about pro-environmental behavior are influenced

by different underlying motives as the Goal-framing theory addresses. This study expands upon previous literature on environmental behavior studies by integrating and testing multiple motivational goal frames in a single model.

Furthermore, the first regression result suggests that subjects internalize norms. In the first regression model, hedonic goals explain variance in pro-environmental behavior in daily life in addition to personal moral norms. This finding suggests that personal moral norms and hedonic goals are distinct motives yet lie on the continuum of norm internalization. Deci and Ryan (1985) provide insight with their self-determination theory. This theory suggests that an individual's motives underlying a behavior progress from intrinsic to extrinsic along a continuum. An intrinsically motivated behavior refers to behavior that is performed for the sole pleasure and satisfaction derived from its practice. An extrinsically motivated behavior is done for instrumental reasons, which is again further specified from self-determined extrinsic motivation (e.g., personal moral norms) to non-self-determined extrinsic motivation (e.g., regulation, incentives). Applying the logic of this continuum to environmental behavior domain, easy pro-environmental behaviors are predicted by relatively low level of self-determination (i.e., motives toward the intrinsic end), whereas more difficult behaviors were predicted by higher levels of self-determination (i.e., motives toward the extrinsic end) (Green-Demers, Pelletier, & Ménard, 1997; Pelletier et al., 1998). This study finding offers a plausible explanation to the continuum of norm internalization. In other words, it is logical to expect that predictive powers of both personal moral norms and hedonic goals on environmental behavior are likely to be observed together if recycling behavior at home is determined by motives at the intrinsic end on a continuum.

The results of the second regression suggest that descriptive social norms significantly influence environmental behavior in sport event settings yet do not affect environmental behavior in daily life settings. Alternatively, personal moral norms, hedonic goals, and perceived behavioral difficulty do not have significant effects on environmental behavior in event settings. This finding is a noteworthy because different types of norms have distinct roles in predicting environmental behavior across two settings. Researchers recognized different types of norms (Deci & Ryan, 1985; Park & Smith, 2007; Perkins & Berkowitz, 1986; Thøgersen, 2006), and different norms have been studied in separate behavioral and contextual domains. Some researchers focus on personal moral norms to explain environmental behavior (e.g., Nordlund & Garvill, 2002; Schwartz, 1977; Stern, 2000; Turaga, Howarth, & Borsuk, 2010) whereas others focus on social norms to understand environmental behavior (e.g., Cialdini et al., 2006; Goldstein et al., 2008; Nolan et al., 2008; Perkins & Berkowitz, 1986). This study generated additional understanding of environmental behavior by integrating multiple motives which were adapted by the Goal-framing theory and the Social Norm Approach. Empirical support was provided to support that different types of norms exist together within individuals yet take different roles in predicting their environmental behavior depending on settings where the action is taken.

Different Mechanisms of Environmental Behavior in Daily Life versus Event Setting

Individuals are influenced by different mechanisms of pro-environmental behavior in their daily lives versus in a tourism setting. Arguably the most significant finding from the present study is that the three constructs—personal moral norms, hedonic goals, and perceived behavioral difficulty—were found to have significant effects on environmental behavior in the

daily life setting, whereas they were found not to have significant effects on environmental behavior in the sport event setting. This suggests that underlying mechanisms of environmental behavior across settings differs. Previous literature has discussed the inconsistent predictive roles of psychological constructs (e.g., personal moral norms) to explain environmental behavior may be partially due to different types of environmental behavior. However, a few studies have attempted to compare the predictive roles of such constructs in explaining the same behavior but in different settings. As this study first attempts to explore different mechanisms of the same environmental behavior between daily life and sport event settings, further discussion will involve possible explanations of this finding based on existing relevant theories rather than comparing and contrasting previous empirical research findings.

First, the Goal-frame theory, which is one of the theoretical backgrounds of this study, helps better understand environmental behavior. The central idea of the theory is that goals govern or "frame" which knowledge and attitudes become cognitively most accessible. As regression analyses showed, descriptive social norms are dominant in influencing environmental behavior in the event setting, whereas personal moral norms and hedonic goals are dominant in affecting environmental behavior in daily life setting. When event attendees attend a sport event, this setting will influence what they think of at the moment, what information they are sensitive to, what action alternatives they perceive, and how they act. Researchers who explored motivations of football tailgating participants addressed that social interaction is one important driver of individual participation of tailgating (e.g., Drenten, Peters, Leigh, & Hollenbeck, 2009; James, Breezeel, & Ross, 2001; Snelgrove, Taks, Chalip, & Green, 2008). Attaching socialization meaning to tailgating activity, individuals in such sport event settings may make certain associations about their descriptive social norms and environmental behavior in their

focal attention on "social frame." Under this frame in sport event settings, tailgaters may have weak association with their moral norms and environmental behavior and act accordingly.

Second, different motivational mechanisms of environmental behavior between two settings are most likely a result of different routes of cognitive process in an individual's decision making in their daily life compared to that of event settings. An individual would search their memory or knowledge for cues to answer the question: what behavior would be appropriate in this situation? Social psychologists have developed dual-processing models such as the Elaboration Likelihood Model or ELM (Petty & Cacioppo, 1981) and the Heuristic-Systematic Model or HSM (Chaiken, 1980) and explained that information is processed along two routes. Specifically, individuals process information along central and peripheral routes (according to ELM) or systematic and heuristic routes (according to HSM) depending on whether an individual is motivated and capable of processing the logical arguments presented in the information. The central or systematic route is more likely to be taken when individuals are involved in the arguments based on provided information; otherwise, the peripheral or heuristic route is more likely to be taken. The former route induces an enduring attitude, whereas the latter route induces a less enduring attitude as individuals follow simple inferences or heuristic cues. For example, individuals in daily life take the central route of persuasion by accessing personal moral norms that is shaped from knowledge about the consequences of behavior as the Norm Activation Model and the Value-Belief-Norm theory suggested. However, individuals as event attendees have less involvement with the consequence of environmental behavior–at least in the short term, and make behavioral decisions by taking the peripheral route, such as following the external cues or "what others do."

Third, the different mechanisms of environmental behavior across settings could further be explained by Festinger's (1957) cognitive dissonance theory. This study deals with the issue of inconsistency in pro-environmental behavior across two settings. This is probably because individuals simply do not perceive environmental behavior in event settings in the same way as they do in daily life settings, even though pro-environmental behaviors are seemingly the same. The cognitive dissonance theory suggests that most individuals desire to behave consistently except in cases where there is an influence of idiosyncratic conditions on behavior consistency. Thøgersen (2004) further explains that individuals have the desire to behave consistently if they perceive two different types of environmental behaviors share similarity. Accordingly, if the seemingly same behaviors are perceived as different, individuals may show inconsistency in their behaviors. This theoretical notion supports that the underlying mechanism of a certain environmental behavior is not necessarily the same as the mechanism of the seemingly same behavior in different setting. The dissimilarity between two seemingly same behaviors in different settings was reflected in the factor analysis. Eight behavioral items revealed two factors, which distinctively represent behaviors in daily life and behaviors in the event setting. Such theoretical and empirical discussions help to better understand why individuals' underlying motives for environmental behavior in daily life are not the same as the motives they have for environmental behavior in event settings.

Moderating Effects of Event Attendees' Characteristics on Environmental Behavior Discrepancy between Daily Life and Event Setting

The results of the second research question provided partial support for the hypothesized relations of event attendees' characteristics and their discrepancy in pro-environmental behavior

between two settings. As hypothesized, event attendees perceived destination environmental responsibility and the type of event attendee significantly moderated behavioral discrepancy between daily life and the event setting. Contrary to expectations, recreation involvement and experience-use history did not exert a significant moderating effect on behavioral discrepancy across settings.

Study participants' environmental behaviors across two settings were found to be different. Sport event attendees' engagement of pro-environmental behavior in the sport event setting decreased from daily life to the event setting, yet behavioral discrepancy between the two settings was smaller among those who perceived that the sport event destination took environmental responsibly by implementing green practices (e.g., communication, and waste management systems), than those who did not. As the present study sought to identify significant moderators that explain behavioral consistency/discrepancy across daily life and event settings, it is worth noting the findings with a focus on the spillover effects of environmental behavior. In the past, studies have been carried out to understand how to encourage a specific environmental behavior and recently researchers have begun to explore the mechanisms of one type of environmental behavior spilling over into other types of environmental behavior (Thøgersen & Ölander, 2006; Whitmarsh & O'Neill, 2010). The present study first attempted to understand how environmental behavior in a setting is transferred to another setting. It was found that one of the most prominent mechanisms of such a spillover effect is the destination's environmental responsibility. This finding proposes that individuals' spillover of pro-environmental behavior across settings is a function of the surroundings in which they are found. In the present study, this includes the event destination environment, where event-goers spend their leisure time interacting with others and the event setting.

Individuals' perceptual understanding of the venue's environmental responsibility influences the attendee's own effort to be consistent in their environmental behavior between daily life and event settings. This finding also implies that the perception that an individual event-goer is helping the destination achieving a positive outcome eventually reduces their discrepancies of pro-environmental behavior.

In relation to whether environmental behavior in daily life is transferred to the sport event setting, the present study suggests that the moderating role of event attendee types on behavioral discrepancy between the two settings. Although both tourist and non-tourist types of event attendees' engagement in environmental behavior in the sport event setting was less than in daily life, behavioral discrepancy between the two settings is smaller among tourists than non-tourists. In other words, tourists are less likely to change their pro-environmental behavior at the event setting, whereas non-tourists' (i.e., local residents, MSU students and employees) behavior was more dramatically decreased from daily life to the event setting. Student respondents within the non-tourists group probably contribute to the difference in behavior, yet student participants make up only 12% of study participants. Although assessing why such behavioral difference exists between groups is observed is beyond the scope of this study, previous literature about tourists versus locals provides insight to understand that event attendee type is another mechanism of spillover of environmental behavior across settings.

Tourists differ from locals in their perception of the destination (Jutla, 2000), their interpretation of place (Kaltenborn & Williams, 2002), and their uses of space (Snepenger, Murphy, O'Connell, & Gregg, 2003). As previous literature suggested, sport event attendees who travel specifically to attend the event have substantially higher identification with the subculture of sport or sport event as well as higher fan motivation (e.g., Snelgrove et al., 2008).

And this is probably because tourists make a greater effort to travel to the host destination in order to attend the sport event than non-tourists. A subculture can be understood as a subgroup of society composed of individuals who come together to share a common facet, such as sport or event activity, and who therefore develop distinctive attitude, beliefs, and values (Gelder, 2007). It has been shown that involvement with a particular sport or sport event can socialize an individual into the certain subculture, and such association renders a degree of identification with the subculture. This identification may result in the person describing themselves, and being described by others in relation to the group (Wheaton, 2000). In comparison to locals, tourists tend to develop identification among themselves as a subculture of tailgaters or football fans. Such association between tourists, oneself, and the subculture group helps explain their relatively consistent pro-environmental behavior. Such understanding of subculture is not limited to sport event tourists, but is also applicable to tourists in general. Although defining a tourist often involves physical criteria (e.g., travel distance), understanding tourists—specifically sport event tourists, researchers suggest understanding tourists requires a focus on the nature of the experience. Tourists typically involve a stage of liminality (Jafari, 1987), in which tourists find themselves in the transitory stage between two established social statuses—being individuals living daily life versus being tourists where the usual order of things is changed (Jafari 1987; Turner, 1969). Tourists willingly travel to, or enter into, a specific place for a defined period of time, and experience a temporary difference of everyday activities (Cohen, 1979; Smith, 1978). Therefore, the present study concludes that the subculture or liminality of tourists versus non-tourists could help to better understand the consistency/discrepancy of environmental behavior between daily life and event settings.

Results from the moderating effects tests, contrary to expectations, showed recreation involvement and experience-use history did not exert significant an effect on behavioral discrepancy across settings. Previous studies showed that recreationists' environmental behaviors tended to differ based on their recreation involvement and experience-use history (e.g., Gross & Brown, 2006; Lee, 2011; Ong & Musa, 2012; White et al., 2008). Specifically, those researchers explained that recreation involvement and previous recreation experience increase the connection between a recreationist and a recreation activity which affects environmental behavior. If recreationists are more involved in certain activity and have more experience, they are more sensitive to deteriorated conditions in recreation settings, and evaluate depreciative behavior more negatively (White et al., 2008). The present study finding however, did not show such a moderating effect of recreation involvement and experience-use history on environmental behavioral change between daily life and the event setting. One possible explanation of such different results is that the previous studies focused on vandalism or littering behavior that directly brings negative consequences on the recreational area or travelling site, which in turn affects quality of recreational activity. On the other hand, this study focuses on pro-environmental behavior that does not directly threaten recreational settings and activities. Another potential reason is that tailgating as recreational activity is so called "casual leisure", which differs from "serious leisure". Those participants in the current study who have higher psychological and longer behavioral involvement to tailgating activity are still not aligning extra cognitive and behavioral efforts to continuing such casual recreational activity. Contrary to casual leisure, serious leisure such as fishing and skiing requires development of skills and knowledge, accumulation of experience and the expending of effort (Stebbins, 1982). This understanding provides a an explanation that, regardless of the psychological and behavioral

involvement to tailgating activity, study participants do not put extra effort in engaging in pro-environmental behavior in the event setting as this is a casual leisure activity.

Managerial Implications

The present study offers some important managerial implications to sport event tourism practitioners who want their events and destinations to become greener. Based on the results of this research, the following are suggestions to induce greater pro-environmental behavior from event attendees.

Policy makers and event managers in sport event tourism destinations need to understand that event attendees' underlying mechanism of environmental behavior is different from that of daily life. Event managers who are able to determine the critical factors that increase pro-environmental behavior in event setting will be able to advance their efforts in greening an event by inducing pro-environmental behavior among event attendees. In terms of environmental policy and campaign interventions, the most promising way to increase the overall level of recycling at sport events may be to better utilize descriptive social norms. Event attendees may not always be accessible to the association between certain behaviors and associated environmental impact, which brings moral obligation into influencing behavior. If social norms influence behavior, the norms should be recognized. In other words, event attendees have to be aware that the majority of other attendees in the same surroundings are actually engaging in pro-environmental behavior. There are a couple of suggestions to enforce social norms and to ease the translation of the norms into behavior via environmental campaign efforts in event destinations.

In addition to locating recycling bins, additional options need to be provided for tailgaters such as “bring your own recycling bags,” “use recycling bags provided by the university,” or “use recycling bag dispensers located on campus.” Such options not only allow tailgaters to bring or pick up recycling bags and engage in recycling in more convenient way, but they also let tailgaters be aware of what others do. Specifically, if volunteers circulate throughout the parking lots handing out recycling bags so tailgaters can easily recycle at their own tailgate location, and tailgaters can see others’ recycling at their location. This ensures a sign of social norms showing that other tailgaters actually engage in recycling. Also, it is recommended to initiate a student internship program to support the on-site recycling education program at sport events. Volunteer students can be recruited by the for example, the “Office of Campus Sustainability” for the football season. Currently, on-site recycling education is mostly run by volunteers of the current student body at universities including MSU, and they are recruited only for a single or limited game event. However, by recruiting student interns for a season term helps ensure continuous improvement of such a recycling campaign. It is also expected to have a more consistent recycling education program throughout the season. Such an on-site recycling campaign can be enhanced by inviting volunteers from actual tailgaters who include not only students but also local residents and alumni, etc. Inviting tailgater volunteers, having relatively flexible and short schedule, from actual tailgaters can be beneficial to increase the effects of social norms on pro-environmental behavior. Individuals are more likely to follow behavior of others if the others are similar to them (e.g., similar age group, similar social status, etc.). On each game day, and at the beginning and the end of the football season, student interns and volunteers should be honored and thanked through public announcement. Together these implications are recommended actions to show tailgaters how other tailgaters are taking responsibility to recycling on game days.

By understanding the explanation of dual process models in reference to the discrepancy of environmental behavior across settings, such different behavior is possible because individuals in the event setting do not take a central route of cognitive process (e.g., access to their existing moral norms to behavioral decision) when they are traveling. When policy makers and communicators design environmental campaigns and construct persuasive messages to promote pro-environmental behavior among event attendees, it is important to ensure that event attendees are motivated and able to process the argument contained in campaigning messages. In an event setting, it can be more effective to use peripheral cues in motivating individuals to engage in pro-environmental behavior when they are not in a central focus of logical argument of the behavior. For example, locational information of recycling facilities/bins can be an easy cue to decide to participate in the recycling program. Fundamentally, recycling bins should be placed throughout parking lots in visible ways—e.g., clearly labeled, using clear, consistent, eye catching signage. In addition, locations for placement of recycling bins should be informed to tailgaters in advance and during the event. Announcing such information through season ticket holders, students, alumni email circulations, and through websites can be a cue to follow when tailgaters make decisions about recycling. Locations need be consistent throughout the seasons (and on-going season) so tailgaters know where to expect them, which becomes an easier cue to follow. Co-location, by having a recycling bin next to each trash can when at all possible, can be one method to use as an easily accessible cue for following.

As individuals experience cognitive dissonance when their behavior is inconsistent between at home and at the event, following managerial implications are suggested. When individuals experience cognitive dissonance, they try to resolve the dissonance by adding information or by changing behavior (Festinger, 1957). Therefore, one approach to encourage

spillover of pro-environmental behavior from home to the event is to provide additional cognitive elements that resolve or minimize the dissonant. Thus, it is recommended to develop an environmental campaign focusing on reduced perceived dissimilarity of the behaviors across two settings. For example, a destination manager or campaign planners could target home game fans and develop a slogan conveying a theme "doing a good job at home AND home games." This helps tailgaters connect recycling at home to recycling at tailgating. Further, a campaign suggested earlier, "bring your own recycling bags" can also help tailgaters to connect in their cognition that recycling at home is not different from recycling at tailgating, while providing them an alternative easy option for recycling at an event setting. Such slogan needs to be publicized through multiple channels such as emails, websites, newsletters, etc. One recommended channel is to put an eye-catching slogan on a window cling for tailgate vehicles so the driver and passengers could attend.

The spillover effect of pro-environmental behavior from daily life to the sport event setting may be facilitated via shared effort from the venue or destination. Event attendees' perceptions about the destinations' environmental sustainability efforts is a crucial factor that emphasizes the important role of the institution in the spillover phenomenon in greening sport event tourism. Accordingly, the environmental campaign can be advanced by informing attendees of the destination's greening efforts. Policy makers and event managers should actively educate individuals through environmental campaigns or the tools of informal education (e.g., brochures, exhibitions, and seminars). More importantly, event attendees must be able to "see" that the destination is committed to minimizing the event induced negative environmental impacts. The tools include budget allocation for their greening efforts, non-financial resources they are using, and on-going feedback from such efforts etc. For example, event managers can

advertise the tailgating recycling program and report recycling statistics on video boards, websites, campaign brochures, etc. Also, numbers and lists of student interns and tailgater volunteers for an on-site recycling campaign can be another source of information to shows the efforts from the event destination. Improved recycling logistics and advanced waste management systems specifically for the event setting need be publicly announced and shared among tailgaters. One additional recommendation to publicize the destination's effort in greening the event is to utilize social media. For instance, event mangers can let the game day recycling interns create a Facebook event to spread awareness of greening event efforts, and recruit volunteers for game days. Even managers can also use a Flickr photo steam to share photos of recycling efforts and outcomes. These visualized actions taken by event destinations would increase individuals' awareness of destination's effort in greening the event, that in turn enhance event attendees' motivation of taking environmental responsibly, being consistent in their pro-environmental behavior across settings. Also, it is recommended to develop a recycling contest for game days with different campus groups (e.g. fraternities, sororities, clubs, etc.) competing for most non-deposit recycling by type such as plastic, paper, non-deposit aluminum, non-deposit glass, non-deposit plastic. By working the MSU Athletics and Office of Campus Sustainability to do recognition (e.g., tickets or some similar rewards), it is expected to have shared efforts from destinations and tailgaters.

A final suggestion is that greening sport event tourism could benefit by formulating environmental campaigns differently for tourists than for locals. For example, communications directed outside the locale highlight opportunities for event attendees to strengthen and celebrate their identification with the sport's subculture and the institution. On the other hand, campaigns

within the locale highlight the entertainment and achievements that the green event offers.

Summary of managerial implications are presented in Figure 10.

Utilize social norms

- Show tailgaters how other tailgaters are taking responsibility to recycling on game days
- Facilitate tailgaters to recycle at their location
- Launch "student internship program"
- Invite tailgater volunteers

Use peripheral cues rather than central focus of logical argument

- Provide locational information of recycling facilities/bins
- Place recycling bins in visible ways
- Place recycling bins at the same locations throughout the seasons
- Co-locate a recycling bin next to each trash can
- Use multiple channels (e.g., websites, newsletters, a window cling for tailgate vehicles)

Reduce cognitive distance between at home and at the event

- Reduce perceived dissimilarity of the recycling behaviors between two settings
- Launch "Bring your own recycling bags" program
- Develop slogan such as "Doing a good job at home AND on home games"

Shared efforts from destinations and tailgaters

- Inform tailgaters of the destination's greening efforts
- Educate tailgaters through environmental campaigns or informal education (e.g., brochures, exhibitions, and seminars)
- Let tailgaters see destinations' environmental commitment (e.g., report recycling statistics, budget allocation for their greening efforts)
- Get coaches/players visibly supporting recycling in website, score board, etc.
- Publicize Improved recycling logistics and advanced waste management system
- Utilize social media (e.g., create a Facebook event to spread awareness of greening event efforts, use a Flickr photo steam to share photos of recycling efforts and outcomes)
- Develop a recycling contest for game days with different campus groups (e.g. fraternities, sororities, clubs, etc.)
- Work with MSU Athletics and Office of Campus Sustainability to do recognition, tickets or some similar rewards

Target different types of tailgates with tailored approach

- Target tourists and highlight sport subculture
- Target locals and highlight enjoyment and achievement from the green event

Figure 10 Summary of managerial implications

Limitations and Future Studies

The present study presents promising contributions. However, the findings presented here need to be qualified in the light of several limitations. The first limitation is related to the sample used in this study. A limitation of this quantitative study is the inability to determine the entire study population. Also, a nonprobability systematic sampling strategy was used in this study. Although nonprobability sampling approach is an acceptable technique in tourism studies especially when identifying the entire population is almost impossible, the sampling approach of the present study limits generalizability of the study findings. It is recommended to replicate the study in the same destination and other sport event destinations in the future. Also, it is recommended to conduct a study with season ticket holders and utilize probability sampling in a future study. This would include a number who don't tailgate, and allows the researchers group comparisons (e.g., spectator only group, tailgater only group). But also, the findings from ticket holder sample would be generalizable across all of college football in U.S. for season ticket holders whose population is known.

Also, the present study context is a collegiate football tailgate event. A future study is recommended to target different types and sizes of sport events (e.g., active sport event attendees such as a marathon or sport-fishing event, and spectators to a large scale sport event such as the Olympic Games) and examine whether the present study findings are consistently observed. Also, this study context is a public tourism destination where green initiatives are a stated concern of the institution. Another suggestion for future research is to employ the present study's model to examine the response of visitors to green hospitality businesses. Resorts or hotels, which seek to go green in their practices (e.g., adopting energy efficient products, promoting recycling and energy saving among customers) offer opportunities to reduce negative environmental

consequences. Yet at the same time, such businesses seek to increase market competitiveness and business profits by adapting green initiatives. Accordingly, understanding customers' perception and behavior toward green hospitality businesses are key interests for green hospitality businesses not only because of environmental sustainability but also their economic sustainability. Under this difference between a public tourism destination and a hospitality business, expanding the present study into green hospitality businesses will bring meaningful contributions to sustainable tourism.

The second limitation is related to the measurement issues. This study used self-reported rather than observed pro-environmental behavior because of the scope of the dissertation project in terms of time and cost. Therefore, it is possible that some individual responses may be overestimated, because environmental behavior conveys social desirability (Mick, 1996). To address this, researchers acknowledge the conceptual restrictions need to be placed on interpreting "what individuals say they do", which is different from "what they actually undertake" (Corral-Verdugo, Bernache, Encinas, & Garibaldi, 1994; Corral-Verdugo, 1997). Nevertheless, challenges with observational studies also raise concerns if the observers are identifiable: Socially desirable behavior is more likely to occur; and observation can also create a negative image for the institution if subjects think they are being observed. Although there would be a discrepancy between self-reported and observed behavior, this type of methodology (i.e., measuring self-reported behavior over observing actual behavior) is common in field research. Also, although there is likely to be an over-estimation by respondents concerning their actual behavior, researchers addressed that self-reported behavior measures are likely to be proportionally accurate (Vining & Ebreo, 1992; Warriner, McDougall, & Claxton, 1984), and social desirability bias is not a major issue on environmentally-related research (Milfont, 2009).

Future studies measuring the same behavior at each of the different settings are necessary to confirm what the present study found.

Additionally, the present study assessed cross-sectional data with repeatedly measured environmental behavior. That is, the present study respondents reported environmental behaviors in both settings in a single set of the questionnaire. Therefore, there is a concern that the respondents would tend to report a similar level of behavioral engagement at both settings. Nevertheless, the present study findings—i.e., examined spillover effect of environmental behavior from one to another setting—have a shared understanding with previous literature findings (e.g., Thøgersen, 2004; Whitmarsh & O'Neill, 2010)—i.e., examined the spillover effects between different types of environmental behaviors. For example, environmental attitude or personal moral norms were found to be a significant determinant of one type of environmental behavior yet not of another type of behavior. One suggestion for future research is to conduct a longitudinal study or to utilize separate sets of questionnaires to examine and compare the environmental behaviors across settings. Another potential expansion of the present study is to conduct an experimental study to measure effectiveness of different types of message or information on environmental behavior across settings. Even though importance of information and campaigns to promote environmental behavior among event attendees has been discussed in previous literature as well as in the present study, the relative effectiveness of different types of messaging is less empirically tested. Messages can convey either personal moral norms or descriptive social norms and such different types of message would have different effects on individuals' environmental behavior if one type of message is cognitively more relevant or accessible in a certain setting (i.e., event setting).

Lastly, one limitation is that this study did not control for the actual difficulty of recycling behavior at home and in tailgating areas. Although the questionnaire included the questions to measure study participant perceived behavioral difficulty, which was controlled in the analyses, recycling opportunities especially in tailgating areas were not measured. Obviously, recycling opportunities were not evenly distributed to all tailgating participants throughout the parking lots, and recycling should be more favorable in the area closer to the stadium where recycling facilities were relatively well established. Therefore, it is necessary to design a study where different levels of recycling opportunity are available to a homogenous population and see how recycling rate differs among varying levels of opportunity, while all other factors being equal. It is recommended in future study to utilize GPS to document and explain spatial distribution of actual recycling facilities, and look at how pro-environmental behavior varies with the spatial dimensions, and whether such spatial dimensions additionally explain behavioral discrepancy between in daily life and in sport event tourism context.

Conclusion

Sport event tourism is an increasingly popular type of tourism which provides recreational and tourism opportunities to event attendees and provides economic and social benefits to host communities. Yet, although this type of tourism interacts with the environment in a number of ways, in the past environmental concerns in sport event tourism had little attention in practice and literature. Recently, it is starting to be recognized that sports events have a significant impact on the environment. Common ways in which sport event tourism affect the environment have been identified as development of fragile or scarce land types, soil erosion, noise and light pollution, consumption of renewable and non-renewable resources, creation of

greenhouse gases by consuming electricity and fuel, waste sent to landfill, etc. (UNEP, 2014). Policy makers and event planners are now paying closer attention to building and managing sport event tourism in greener ways that can limit negative environmental impacts. Multiple attempts have been made to green events including design, construction, and operation of destinations/venues, transport, recycling, and waste management etc. (EPA, 2012; UNEP, 2014). One effort at greening sport event tourism in recent years is to motivate event attendees to engage in pro-environmental behavior while they are enjoying their recreation activity in destinations. To aid the sport event tourism destinations in going greener and enhancing environmental sustainability, the present study concludes three domains need to be understood and integrated as shown in Figure 11.

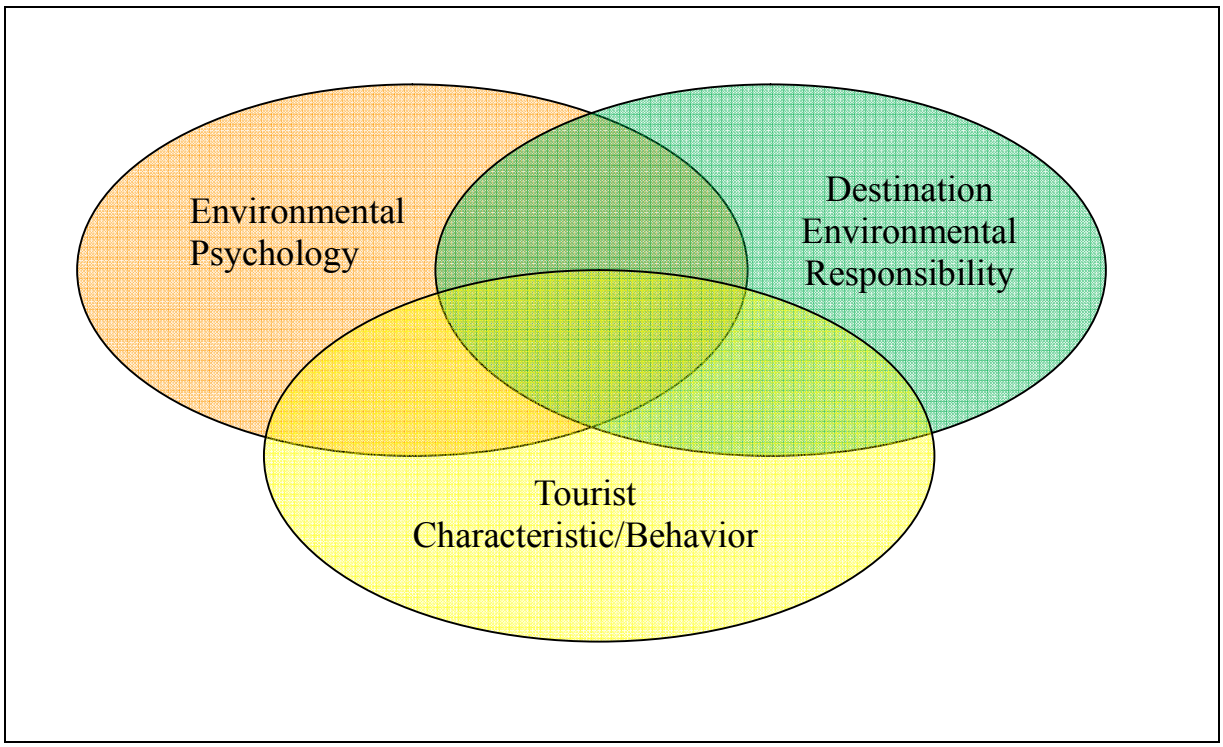

Figure 11 Three domains for greening sport event tourism

The first domain is environmental psychology. In early literature on environmental behavior, most approaches focused on moral norms that play a key role in promoting pro-environmental behavior. In the last decade, researchers argued that environmental attitudes or moral norms were only one set of the factors affecting behavior, and in many cases, not the most important one. Although some scholars explicitly acknowledge that behavior may result from multiple motives, little is known about how multiple motives become significant influential factors in some cases, yet not significant factors in other cases (e.g., in tourism context). This notion becomes increasingly important when tourism destinations take environmental responsibility by implementing multiple practices including environmental campaigns targeting travelers or event attendees. In addition, destinations' greening efforts expect not only direct effects (e.g., reducing CO_2 emission by adopting energy efficient products or implementing waste management system) but also indirect effects (e.g., reducing CO_2 emission by letting event attendees engage in recycling). The latter effort could become more effective if event attendees perceive destination's greening activity. Accordingly, the second domain of destination environmental responsibility needs to be integrated for the betterment of environmental sustainability of sport event tourism. The third domain is tourist characteristics and behavior. Individuals living in daily life take a temporal role of being tourists or experiencing the unique mindset of other than daily living when they attend events or travel to destinations. While being tourists, individuals differ in terms of their behavior and attention. Such distinction is a unique arena of tourism studies that needs to be integrated when adapting behavioral and cognitive theories and models developed from other disciplines. The present study compared how multiple motives of environmental behavior differently affect pro-environmental behavior between in daily life versus in sport event tourism contexts. By addressing the behavioral discrepancy and

different underlying mechanisms of environmental behavior between two settings, the present study provides additional understanding about the situation where environmental sustainability behavior occurs at sport event tourism destinations.

APPENDICES

Appendix A IRB Approval Letter

MICHIGAN STATE UNIVERSITY

Initial IRB Application Determination *Exempt*

August 23, 2013

To: Charles Nelson
131 Natural Resources

Re: **IRB# x12-1007e** Category: Exempt 2
Approval Date: October 30, 2012

Title: "Going Green on Game Days"- Reducing Waste and Increasing Recycling at MSU Football Games

The Institutional Review Board has completed their review of your project. I am pleased to advise you that **your project has been deemed as exempt** in accordance with federal regulations.

This Exempt Determination letter was reissued on August 23, 2013 to reflect a change in PI. Dr. Charles Nelson replaced Dr. Eunsil Lee as Principal Investigator on this protocol.

The IRB has found that your research project meets the criteria for exempt status and the criteria for the protection of human subjects in exempt research. **Under our exempt policy the Principal Investigator assumes the responsibilities for the protection of human subjects** in this project as outlined in the assurance letter and exempt educational material. The IRB office has received your signed assurance for exempt research. A copy of this signed agreement is appended for your information and records.

Renewals: Exempt protocols do not need to be renewed. If the project is completed, please submit an ***Application for Permanent Closure***.

Revisions: Exempt protocols do not require revisions. However, if changes are made to a protocol that may no longer meet the exempt criteria, a new initial application will be required.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects and change the category of review, notify the IRB office promptly. Any complaints from participants regarding the risk and benefits of the project must be reported to the IRB.

Follow-up: If your exempt project is not completed and closed after three years, the IRB office will contact you regarding the status of the project and to verify that no changes have occurred that may affect exempt status.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with the IRB office.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at IRB@msu.edu. Thank you for your cooperation.

Sincerely,

H. McGee

Harry McGee, MPH
SIRB Chair

c: Ju Hyoung Han, Eun Jeong Noh, Jenni Lee, Dwight Washington, Jessica Vega, Eunsil Lee

Office of Regulatory Affairs
Human Research Protection Programs

Biomedical & Health Institutional Review Board (BIRB)

Community Research Institutional Review Board (CRIRB)

Social Science Behavioral/Education Institutional Review Board (SIRB)

Olds Hall
408 West Circle Drive, #207
East Lansing, MI 48824
(517) 355-2180
Fax: (517) 432-4503
Email: irb@msu.edu
www.humanresearch.msu.edu

Appendix B Sampling Log Sheet

On-site Sampling Log Sheet (8/30/13)

Survey Administrator's Name: _____

Hour: 4-5PM		
Stops by Time	# Completed Surveys	# Declined
:00		
:06		
:12		
:18		
:24		
:30		
:36		
:42		
:48		
:54		
Total		

Hour: 6-7PM		
Stops by Time	# Completed Surveys	# Declined
:00		
:06		
:12		
:18		
:24		
:30		
:36		
:42		
:48		
:54		
Total		

Hour: 5-6PM		
Stops by Time	# Completed Surveys	# Declined
:00		
:06		
:12		
:18		
:24		
:30		
:36		
:42		
:48		
:54		
Total		

Hour: 7-8PM		
Stops by Time	# Completed Surveys	# Declined
:00		
:06		
:12		
:18		
:24		
:30		
:36		
:42		
:48		
:54		
Total		

Total completed # _____

Total rejected # _____

Total contacted # _____

Appendix C Survey Administrator Pre-meeting Agenda

"Going Green on Game Days"
Reducing Waste and Increasing Recycling on Football Game Days

Survey Administrator Pre-meeting

Work Schedule

- August 30 (Fri.) 3:30 p.m. - 8:15 p.m. (Game starts at 8 pm)
- September 7 (Sat.) 7:30 a.m. - 12:15 p.m. (Game starts at 12 pm)

Meeting Place

- Meet at 3:30 pm (Aug 30) and7:30 am (Sep 7) at Room 149 in NR Building (Call me if you do not have an access to the Building)

Sampling Times

- August 30, 2013: 4:00 – 7:30PM then return to 149 NR. Depart by 8:15PM
- September 7, 2013: 8:00 – 11:30 AM then return to 149 NR. Depart by 12:15PM

Main Activity

- Follow the sampling protocol and conduct an on-site survey
- Collect completed questionnaires

Protocol

1. Walk to the assigned tailgating area from 149 NR
2. Begin at agreed upon entry point in your area at start time.
3. Target four nearest tailgaters at your entry point
4. Introduce yourself, explain research purpose, ask their participation in a survey, and collect completed questionnaires.
5. If one or more refuse, request that the next closest individuals complete the survey so you have four taking the survey.
6. Thank the survey participants, and move five steps by following the route (you will have a route map that you need to follow on Fri.)
7. Repeat no. 4-6, and continue with an interval of five-steps

Study Purpose

- Purpose of this study is to help MSU and other universities go greener at football game days by understanding game day visitors' tailgating experience and recycling behavior.

Sample Frame

- Spend about 5 minutes for one stop, and spend 1 minute for moving to the next stop
- Expect to have about 30 completed questionnaire collected for an hour per person
- Expect to have about 100 completed questionnaire collected during one-day working hours per person

Tips

- This research is being partially funded by the MSU Office of Campus Sustainability. It is under the direction of Dr. Charles Nelson, Department of Community Sustainability and Ju Hyoung, Ph.D. Candidate, Department of Community Sustainability.

- Please contact tailgaters in a formal way, but in friendly mood. Please keep in mind your positive energy and smile motivates people to participate in this study and increases the response rate.

- Those sampled are to remain confidential. Your need to articulate that their contact information and responses remains **strictly confidential** by MSU regulation. This research is approved by the MSU Institutional Review Boards (IRB).

- Those providing an email or regular mail address will ONLY be contacted by Dr. Nelson and Ju Hyoung for the research purpose of better understanding tailgating and recycling behavior. They will receive a mail or online survey (based on their preference) on Wednesday after the game. This follow-up questionnaire will take about 15 minutes.

- We are working to be representative of all tailgaters in our sampling. This includes MSU students, faculty, employees, local residents, or travelers. They can be fans of MSU or fans of the opposing team.

- The one exception for an adult is if you believe a person is drunk, under the influence of drugs or in some way threatening or belligerent, do not attempt to sample such a person.

- We are not targeting children. Please contact those who are 18 years or older.

- If tailgater(s) choose not to participate, thanks to them and, move to the next person. Do not take any rejection personally. This is a completely voluntary survey. You can ask their participation, but respect their "not to participate" decision. Please take note how many tailgaters choose "not to participate."

- While tailgaters are filling out the questionnaire, you may want to mention, "There are no right or wrong answers. We are interested in your experience and perceptions."

- There are no financial or other incentives for study participants. Don't mention incentives. This is very unlikely to come up.

- You may be getting tired at some point. Please take your time for re-filling your energy, be sure to use the restroom as needed, carry/drink water and some light snacks.

- You may have food/drink shared by tailgaters, but do not drink any alcoholic beverage.

I want you to have a fun time, and get some experience for your future research. I truly appreciate your commitment and contribution to this research project. Thanks.

Appendix D On-site Questionnaire Used at the First Phase Survey

(Fit into one page)

MICHIGAN STATE
UNIVERSITY

MSU Game Day Survey

Dear Tail Gate Participant:

Researchers from the Department of Community Sustainability at MSU are working to better understand the relationship between one's attitudes regarding recycling in daily life and when one attends a major sporting event. This research is funded in part by the MSU Office of Campus Sustainability. It will be used to help guide future recycling efforts on campus for major events.

Please take the 4 minutes or so needed to complete this survey. You indicate your voluntary agreement to participate by completing and returning this survey. You will be asked to participate in a follow-up survey by providing your email or mailing address. However, if you choose not to complete all or part of the questions, you will not suffer any penalty. You are free to discontinue your participation at any time. Your responses will be kept confidential and your privacy will be protected to the maximum extent allowable by law. Thanks! Ju Hyoung Han, Doctoral Candidate and Dr. Chuck Nelson, Associate Professor, Department of Community Sustainability, 131 Natural Resources Building, MSU. For further information contact hanju@msu.edu or nelsonc@msu.edu.

1. Are you best described currently as (check one)

❒ An MSU Employee
❒ An MSU Student
❒ Not MSU Student or Employee

***1a. If you are not a current MSU student or employee*, check those that apply. Are you**

❒ An MSU Alumnus
❒ A family member of an MSU student
❒ A family member of an MSU employee

2. What is your five-digit zip code? _____

3. In what year were you born? _____

4. What is your gender? ❒ Male ❒ Female

5. Are you here as a fan of (check one) ❒ MSU team ❒ Visiting team ❒ Other: _____

6. Are you attending the game today? ❒ Yes ❒ No

7. Are you the leader of the tailgate at this site? ❒ Yes ❒ No

8. How many miles did you travel from your principal home <u>to East Lansing</u> for this experience? _____# MILES (One-way)

9. How many people came with you to this tailgate?

#_____ adults 18 and older (incl. you) & #_____ children under 18

10. Which one best describes those who came with you to this tailgate? (please check one)

❒ By myself ❒ Family only ❒ Friends only
❒ Family and Friends ❒ Club/Organization
❒ Other _____

11. I was aware that MSU is operating recycling programs in tailgating areas today before receiving this questionnaire. ❒ Yes ❒ No

12. I know where to recycle near my tailgating location today. ❒ Yes ❒ No

13. Please circle the one response that best describes your behaviors at your home and at MSU football tailgating.

AT HOME 1 = Never to 5 = Always						**AT TAILGATING** 1 = Never to 5 = Always				
1	2	3	4	5	I recycle materials.	1	2	3	4	5
1	2	3	4	5	I look for ways to reuse things.	1	2	3	4	5
1	2	3	4	5	I look for ways to reduce food/material waste.	1	2	3	4	5

14. Please circle the one response that best describes your perceptions of MSU's recycling activity at football tailgating. (1 = Strongly Disagree to 5 = Strongly Agree)

MSU has visible communications about its green practices at tailgating.	1	2	3	4	5
MSU has established active recycling programs where I am tailgating.	1	2	3	4	5
MSU has established systems to reduce food/material waste during tailgating.	1	2	3	4	5

15. I am interested in sharing additional information about tailgating and recycling in a follow-up survey.
(You will **ONLY** be contacted for this purpose by the researcher.)

Name:_____

Email Address:		Mailing Address:
	OR	_____
_____		(Street/PO)
		_____
		(City) (State) (Zip code)

Thank you very much for your help today!

For researcher use only

If refused, why

ID #

Appendix E Consent Form for Follow-up Mail Survey Used at the First Phase Survey

(Fit into one page)

September, 2013

Dear Tailgating Participant:

Thank you for completing a questionnaire during game day tailgating at MSU regarding recycling. As was discussed by the survey administrator when you completed the initial on-site survey, researchers from the Department of Community Sustainability at MSU are working to better understand the relationship between one's attitudes regarding recycling in daily life and when one attends a major sporting event. This research is funded in part by the MSU Office of Campus Sustainability. It will be used to help guide future recycling efforts on campus during major events and improve communications with event attendees.

As the survey administrator discussed with you and you provided your contact information for this purpose, this is the second questionnaire of the two in this study. It is focused on your attitudes regarding recycling and tailgating. It allows us to better understand your attitudes, opinions and behaviors related to recycling when you are tailgating and in everyday life.

Your participation in this survey will take approximately 15 minutes. As you will probably notice, there is a code number which is only to allow us to cross out your name from a second mailing of the questionnaire if we receive your response so we don't bother you with more mailings. Once your response is received, we will disassociate your name/code number with your responses and they will be **strictly confidential**. Your identity will not be linked to the data you provide. The research data will be kept on the campus of Michigan State University in a locked file cabinet or password protected computer for three years after the close of the research and only the appointed researchers and the Institutional Review Board (IRB) will have access to the data. There are no anticipated risks associated with participation. You consent to voluntarily participate in this study by completing this survey. You may choose not to participate at all, may choose not to answer specific questions, or may discontinue at any time without penalty. This study is intended for research purposes only. Findings will be published in academic journals, presented at professional meetings and used to assist the Office of Campus Sustainability to improve recycling opportunities, but the identities of all research participants will remain confidential.

If you have any questions or concerns about this research, please contact the researchers below:

- Charles Nelson, Ph.D., Associate Professor in the Department of Community Sustainability at Michigan State University by mail: 480 Wilson Road, 131 Natural Resources Building, East Lansing, MI 48824, phone: (517) 432-0272, or e-mail: nelsonc@msu.edu

- Ju Hyoung Han, Doctoral Candidate in the Department of Community Sustainability at Michigan State University by mail: 480 Wilson Road, 131 Natural Resources Building, East Lansing, MI 48824, phone: (517) 449-5273, or e-mail: hanju@msu.edu

If you have any questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this research study, you may contact, anonymously if you wish:

- Michigan State University Human Research Protection Program, by mail: 408 W. Circle Drive, Room 207 Olds Hall, MSU, East Lansing, MI 48824, phone: (517) 355-2180, or e-mail: irb@msu.edu.

Thank you very much for your participation.

Sincerely,

Ju Hyoung Han, Doctoral Candidate
Department of Community Sustainability

Dr. Charles Nelson, Associate Professor
Department of Community Sustainability

Appendix F Survey Items for Follow-up Mail Survey Used at the First Phase Survey

(Fit into three pages)

ID # _____

SECTION I. ENVIRONMENTAL BEHAVIOR

1. Please describe your behaviors at your home and at MSU football tailgating. Please circle the one response that best describes you for each situation at home and tailgating using the 0-5 scale below.

0	1 2 3 4 5
Don't Use	Never ⟷ Always

AT HOME							AT TAILGATING					
0	1	2	3	4	5	I recycle non-deposit glass containers.	0	1	2	3	4	5
0	1	2	3	4	5	I recycle non-deposit aluminum cans.	0	1	2	3	4	5
0	1	2	3	4	5	I recycle plastic (e.g., bottle, cup, grocery bags).	0	1	2	3	4	5
0	1	2	3	4	5	I recycle paper (e.g., mixed paper, boxboard).	0	1	2	3	4	5

2. Please describe the level of difficulty concerning recycling for each situation at home and at MSU football tailgating. Please circle the one response that best describes you for each situation at home and tailgating using the 0-5 scale below.

0	1 2 3 4 5
Don't Use	*Not Difficult At All* ⟷ *Very Difficult*

AT HOME							AT TAILGATING					
0	1	2	3	4	5	Recycling non-deposit glass containers.	0	1	2	3	4	5
0	1	2	3	4	5	Recycling non-deposit aluminum cans.	0	1	2	3	4	5
0	1	2	3	4	5	Recycling plastic (e.g., bottle, cup, grocery bags).	0	1	2	3	4	5
0	1	2	3	4	5	Recycling paper (e.g., mixed paper, boxboard).	0	1	2	3	4	5

3. Please share your general perceptions of recycling practices in regards to non-deposit glass and cans, as well as plastic and paper.

	Strongly Disagree ⟷				*Strongly Agree*
I feel morally obligated to engage in recycling.	1	2	3	4	5
I should do anything I can do to recycle.	1	2	3	4	5
I feel guilty when I waste recyclable materials.	1	2	3	4	5
I think that a majority of people in the United States engage in recycling.	1	2	3	4	5
I think that a majority of people at tailgating areas at MSU engage in recycling.	1	2	3	4	5
I think that a majority of people in my community engage in recycling.	1	2	3	4	5
A majority of people in the United States should engage in recycling.	1	2	3	4	5
A majority of people at tailgating areas at MSU should engage in recycling.	1	2	3	4	5
A majority of people in my residential community should engage in recycling.	1	2	3	4	5
I recycle because of the enjoyment that I feel.	1	2	3	4	5
I take satisfaction in recycling.	1	2	3	4	5
I recycle because I enjoy learning new skills/techniques.	1	2	3	4	5
One of the best things about recycling is that it helps lower costs to society.	1	2	3	4	5
We should recycle materials and protect the environment to benefit people.	1	2	3	4	5
My health and the health of my family may improve because of recycling.	1	2	3	4	5

4. I am aware that MSU is operating recycling programs in tailgating areas. ❒ Yes ❒ No

5. Did you see/hear messages about recycling at tailgating areas as part of your MSU experience? ❒ Yes ❒ No

If yes, from what source(s) (*Please check all that apply*)?

- ❍ Signs
- ❍ Message on MSU bus/vehicle
- ❍ Materials that came with ticket/tailgate information
- ❍ Person who provided questionnaire on the game day
- ❍ MSU Website
- ❍ Talking to MSU employee
- ❍ Saw recycling containers
- ❍ Other _____

6. I utilized MSU recycling facilities in tailgating areas on the day I was surveyed.

❒ Yes ❒ No

6a. ***If no,*** why? *(Please check all that apply)*

❍ Recycling was difficult.
❍ Recycling was too time-consuming.
❍ Recycling took more effort to recycle than it is worth.
❍ Storing and sorting recyclable materials was unsanitary.
❍ Recycling was inconvenient.
❍ I did not know where to recycle near my tailgating location.
❍ I knew where to recycle but recycling drop-off centers were too far way.
❍ My participation in other activities was more important to me than recycling.
❍ The quality of my tailgating experience would have changed for the worse if I recycled.
❍ Other _____

7. Do you have curbside recycling service where you currently live? ❒ Yes ❒ No

7a. ***If yes***, do you utilize the service?

❒ Yes
❒ No → ***If no***, why? *(Please check all that apply)*

❍ Recycling is difficult.
❍ Recycling is too time-consuming.
❍ Recycling takes more effort to recycle than it is worth.
❍ Storing and sorting recyclable materials is unsanitary.
❍ Recycling is inconvenient.
❍ I have more important things to do than recycling.
❍ Because of daily hassles, I often forget to recycle.
❍ The quality of my daily life would change for the worse if I recycled.
❍ Other _____

8. Do you have one or more recycling drop-offs facilities where you currently live?

❒ Yes ❒ No

8a. ***If yes***, do you utilize recycling drop-off facilities?

❒ Yes
❒ No → ***If no***, why? *(Please check all that apply)*

❍ Recycling is difficult.
❍ Recycling is too time-consuming.
❍ Recycling takes more effort to recycle than it is worth.
❍ Storing and sorting recyclable materials is unsanitary.
❍ Recycling is inconvenient.
❍ I do not know where to recycle near my home.

❍ I know where to recycle but recycling drop-off centers are too far way.
❍ I have more important things to do than recycling.
❍ Because of daily hassles, I often forget to recycle.
❍ The quality of my daily life would change for the worse if I recycled.
❍ Other _____

SECTION II. TAILGATING EXPERIENCE

9. Are you an MSU football season ticket holder in 2013? ❒ Yes ❒ No

10. Were you an MSU football season ticket holder in 2012? ❒ Yes ❒ No

11. Have you tailgated before today?

❒ YES (***If YES, please answer the Questions 11a through 11d)***

❒ NO ***(If NO, please skip ahead to Question 12)***

11a. What was the first year you tailgated at MSU? _____

11b. What was the first year you tailgated at other universities/colleges? _____

11c. How many times did you tailgate at MSU during the years 2010, 2011 and 2012?
_____ # TOTAL TIMES

11d. How many times did you tailgate at other universities/colleges during the years 2010, 2011 and 2012 _____ # TOTAL TIMES

12. How many day(s) did you spend away from home on your trip to MSU where you were surveyed? _____ TOTAL DAY(S)

13. Please check all of the following motivations you have for tailgating at MSU? *Please check ALL that apply.*

❍ Food	❍ Socialize	❍ Support school/team
❍ Beverages	❍ Being outdoors on campus	❍ Game day atmosphere
❍ Fun	❍ Being away from the daily routine	❍ Other: _____

14. For each statement, please circle the one number that best describes you in regard to the statement about tailgating, whether at MSU or elsewhere.

	Strongly Disagree ⟷				*Strongly Agree*
Tailgating is one of the most enjoyable things I do.	1	2	3	4	5
Tailgating is very important to me.	1	2	3	4	5
Tailgating is one of the most satisfying things I do.	1	2	3	4	5
I find a lot of my life is organized around Tailgating.	1	2	3	4	5
Tailgating occupies a central role in my life.	1	2	3	4	5
To change my preference from Tailgating to another recreation activity would require major rethinking.	1	2	3	4	5
I enjoy discussing Tailgating with my friends.	1	2	3	4	5
Most of my friends are in some way connected with Tailgating.	1	2	3	4	5
Participating in Tailgating provides me with an opportunity to be with friends.	1	2	3	4	5
When I participate in Tailgating, I can really be myself.	1	2	3	4	5
I identify with the people and image associated with Tailgating.	1	2	3	4	5
When I'm Tailgating, I don't have to be concerned with the way I look.	1	2	3	4	5
I can tell a lot about a person by seeing them Tailgating.	1	2	3	4	5
Participating in Tailgating says a lot about who I am.	1	2	3	4	5
When I participate in Tailgating, others see me the way I want them to see me.	1	2	3	4	5

15. Which ONE of the following best describes the highest level of education you have completed? (Check one)
    - ❒ Some high school or less
    - ❒ High school diploma
    - ❒ Some college/Technical school
    - ❒ Bachelor's degree
    - ❒ Master's/Professional degree
    - ❒ Ph.D./Medical Doctor/Ed.D.

16. What is the one most important way for MSU to improve recycling and reduce waste during tailgating.

Your assistance in this study is greatly appreciated. Please return your completed questionnaire in the return envelope as soon as possible. Thank you!

Appendix G Reminder Messages

First Reminder:

Dear Tailgating Participant:

Recently, you provided us your name and address to help us better understand your tailgating and recycling experiences. Unfortunately, while we have received a response from others, we have not received one from you at this time. If you have already completed and returned the questionnaire, please accept our thanks. If not, please take the 15 minutes necessary to respond today. It is extremely important that you return your completed survey so that your views are accurately represented. Your participation will help guide future recycling efforts on campus during major events and improve communications with tailgaters.

Thank you very much for your participation.

Sincerely,

Ju Hyoung Han, Doctoral Candidate
Department of Community Sustainability

Dr. Charles Nelson, Associate Professor
Department of Community Sustainability

Second and Final Reminder:

Dear Tailgating Participant:

Thank you for completing a questionnaire during game day tailgating at MSU. This our final reminder to encourage you to complete the follow-up survey about your tailgating experience. While others we surveyed during tailgating have completed the follow-up, we have not received one from you at this time. Please take the 15 minutes necessary to respond today. Your participation will help guide future recycling efforts on campus during major events and improve communications with tailgaters.

Thank you very much for your participation.

Sincerely,

Ju Hyoung Han, Doctoral Candidate
Department of Community Sustainability

Dr. Charles Nelson, Associate Professor
Department of Community Sustainability

Appendix H Email Message for Follow-up Online Survey Used at the First Phase Survey

Dear Tailgating Participant,

Thank you for completing a questionnaire during game day tailgating at MSU. As the survey administrator discussed with you and you provided your contact information, this is the second questionnaire to follow-up your tailgating and recycling experience. Your participation in this survey will take approximately 15 minutes. Your participation will help guide future recycling efforts on campus during major events and improve communications with tailgaters.

Please follow this link to the Survey: Take the Survey

Thank you very much for your participation.

Best regards,
Ju Hyoung Han

Appendix I Non-response Check for the First Phase Survey

Table I-1 Non-response check for Day 1 sample

Table I-2 Non-response check for Day 2 sample

Note 1)
GROUP 1 includes tailgaters who completed on-site survey, not provided contact information for follow-up survey, GROUP 2 incudes tailgaters who completed on-site survey and provided contact information for follow-up survey, yet did not participated in follow-up, and GROUP 3 includes tailgaters who completed both on-site and follow-up survey

Note 2)
DER1= MSU has visible communications about its green practices at tailgating; DER2 = MSU has established active recycling programs where I am tailgating; DER3= MSU has established systems to reduce food/material waste during tailgating; GEB1= I recycle materials; GEB2 = I look for ways to reuse things; GEB3 = I look for ways to reduce food/material waste; Each of GEBs measures tailgaters' general environmental behavior both at home (H) and at tailgating (T); All items are measured by 5-point Likert-type scale.

Table I - 1 Non-response check for Day 1 sample

	GROUP 1[1)] N=292, 50.8%	GROUP 2[1)] N=204 35.5%	GROUP 3[1)] N=79 13.7%	Potential non-Response Bias
Age: F (2, 568) = 9.884, $p < .001$				Yes
Mean (S.D.)	40.47 (14.58)	38.60 (13.46)	47.14 (16.92)	
Gender: χ^2 = (2, N = 570) = 1.70, p = .427				No
Male	52.6%	55.4%	46.8%	
Female	47.4%	44.6%	53.2%	
Affiliation: χ^2 = (4, N = 575) = 9.31, p = .054				No
MSU Employee	2.1%	4.4%	7.6%	
MSU Student	11.0%	6.4%	6.3%	
Not MSU Employee or Student	87.0%	89.2%	86.1%	
MSU Alumni: χ^2 = (2, N = 575) = 2.59, p = .274				No
Yes	42.1%	46.1%	51.9%	
No	57.9%	53.9%	48.1%	
Attending Game: χ^2 = (2, N = 575) = 3.86, p = .145				No
Yes	84.9%	83.3%	92.4%	
No	15.1%	16.7%	7.6%	
Leader of Tailgating: χ^2 = (2, N = 575) = 1.55, p = .460				No
Yes	28.8%	24.0%	29.1%	
No	71.2%	76.0%	70.9%	
Travel Miles: χ^2 = (8, N = 575) = 14.03, p = .081				No
0-49 miles	39.0%	33.8%	31.6%	
50-99 miles	44.2%	45.6%	36.7%	
100-149 miles	6.8%	11.3%	11.4%	
150-199 miles	2.4%	2.5%	7.6%	
200 or more	7.5%	6.9%	12.7%	
Adult Group Size: χ^2 = (4, N = 575) = 4.67, p = .323				No
1-5 adults	65.1%	65.7%	64.6%	
6-10 adults	15.1%	19.6%	21.5%	
11 or more	19.9%	14.7%	13.9%	
Having Child in Group: χ^2 = (2, N = 575) = 2.25, p = .325				No
Yes	25.0%	26.0%	17.7%	
No	75.0%	74.0%	82.3%	
Tailgating Group Type: χ^2 = (10, N = 574) = 12.23, p = .270				No
By myself	3.4%	3.4%	5.1%	
Family only	17.5%	12.8%	27.8%	
Friends only	23.3%	20.7%	19.0%	
Family and Friends	54.1%	60.6%	46.8%	
Club/Organization	1.4%	1.5%	1.3%	
Other	0.3%	1.0%	0.0%	

Table I - 1 (Cont'd)

	GROUP 1[1)] N=292, 50.8%	GROUP 2[1)] N=204 35.5%	GROUP 3[1)] N=79 13.7%	Difference Test Statistics	Potential non-Response Bias
Awareness of Recycling Program: $\chi^2 = (2, N = 573) = 2.18$ $p = .336$					No
Yes	56.7%	57.6%	65.8%		
No	43.3%	42.4%	34.2%		
Awareness of Recycling Location: $\chi^2 = (2, N = 573) = 7.89$, $p < .05$					Yes
Yes	37.1%	36.0%	53.2%		
No	62.9%	64.0%	46.8%		
Destination Environmental Responsibility (mean, S.D.)					
DER1[2)]	3.25 (1.23)	3.31 (1.21)	3.42 (1.26)	F (2, 570) = 0.563, p = .570	No
DER2[2)]	3.18 (1.18)	3.16 (1.20)	3.24 (1.31)	F (2, 570) = 0.134, p = .874	No
DER3[2)]	3.03 (1.19)	2.98 (1.18)	2.97 (1.13)	F (2, 570) = 0.160, p = .852	No
General Environmental Behavior at Home (mean, S.D.)					
GEH_H1[2)]	4.01 (1.25)	4.20 (1.06)	4.41 (0.95)	F (2, 558) = 4.124, p < .05	Yes
GEH_H2[2)]	3.89 (1.20)	3.93 (1.12)	4.14 (1.03)	F (2, 558) = 1.506, p = .223	No
GEH_H3[2)]	3.91 (1.11)	3.90 (1.11)	4.15 (1.00)	F (2, 558) = 1.739, p = .177	No
General Environmental Behavior at Tailgating (mean, S.D.)					
GEH_T1[2)]	3.27 (1.40)	3.25 (1.36)	3.52 (1.28)	F (2, 564) = 1.214, p = .298	No
GEH_T2[2)]	2.90 (1.46)	3.02 (1.37)	3.34 (1.27)	F (2, 564) = 2.849, p = .059	No
GEH_T3[2)]	3.02 (1.39)	3.07 (1.35)	3.41 (1.22)	F (2, 564) = 2.524, p = .081	No

Table I - 2 Non-response check for Day 2 sample

	GROUP 1[1)] N=297, 56.0%	GROUP 2[1)] N=161 30.4%	GROUP 3[1)] N=71, 13.6%	Potential non-Response Bias
Age: F (2, 518) = 8.05, $p < .001$				Yes
Mean (S.D.)	43.78 (14.90)	39.64 (13.44)	47.24 (12.82)	
Gender: χ^2 = (2, N = 525) = 12.25, $p < .01$				Yes
Male	57.8%	50.0%	35.2%	
Female	42.2%	50.0%	64.8%	
Affiliation: χ^2 = (4, N = 530) = 0.81, p = .937				No
MSU Employee	2.7%	1.9%	2.8%	
MSU Student	7.7%	8.1%	5.6%	
Not MSU Employee or Student	89.6%	90.1%	91.7%	
MSU Alumni: χ^2 = (2, N = 530) = 1.33, p = .515				No
Yes	46.5%	51.6%	52.4%	
No	53.5%	48.4%	48.6%	
Attending Game: χ^2 = (2, N = 530) = 0.07, p = .965				No
Yes	91.2%	90.7%	91.7%	
No	8.8%	9.3%	8.3%	
Leader of Tailgating: χ^2 = (2, N = 530) = 2.89, p = .236				No
Yes	30.0%	31.1%	40.3%	
No	70.0%	68.9%	59.7%	
Travel Miles: χ^2 = (8, N = 530) = 5.30, p = .725				No
0-49 miles	33.3%	29.2%	26.4%	
50-99 miles	44.8%	54.0%	54.2%	
100-149 miles	9.4%	8.1%	11.1%	
150-199 miles	2.7%	1.2%	4.2%	
200 or more	5.7%	7.5%	4.2%	
Adult Group Size: χ^2 = (4, N = 529) = 3.94, p = .414				No
1-5 adults	70.3%	65.2%	65.3%	
6-10 adults	20.3%	23.0%	18.1%	
11 or more	9.5%	11.8%	16.7%	
Having Child in Group: χ^2 = (2, N = 529) = 0.34, p = .843				No
Yes	23.6%	26.1%	25.0%	
No	76.4%	73.9%	75.0%	
Tailgating Group Type: χ^2 = (10, N = 529) = 16.68, p = .082				No
By myself	2.4%	3.7%	4.2%	
Family only	17.2%	23.0%	20.8%	
Friends only	20.9%	11.8%	15.3%	
Family and Friends	58.1%	60.9%	55.6%	
Club/Organization	0.7%	0.0%	0.0%	
Other	0.7%	0.6%	4.2%	

Table I - 2 (Cont'd)

	GROUP 1[1)] N=297, 56.0%	GROUP 2[1)] N=161 30.4%	GROUP 3[1)] N=71, 13.6%	Difference Test Statistics	Potential non-Response Bias
Awareness of Recycling Program: $\chi^2 = (2, N = 528) = 8.88$ $p < .05$					Yes
Yes	51.9%	58.5%	70.8%		
No	48.1%	41.5%	29.2%		
Awareness of Recycling Location: $\chi^2 = (2, N = 527) = 1.34$, $p = .511$					No
Yes	38.4%	39.9%	45.8%		
No	61.6%	60.1%	54.2%		
Destination Environmental Responsibility (mean, S.D.)					
DER1[2)]	3.15 (1.21)	3.24 (1.17)	3.38 (1.27)	F (2, 516) = 1.064, p = .346	No
DER2[2)]	3.04 (1.19)	3.12 (1.18)	3.32 (1.27)	F (2, 514) = 1.610, p = .201	No
DER3[2)]	2.87 (1.16)	2.96 (1.16)	3.10 (1.20)	F (2, 514) 1.181, p = .308	No
General Environmental Behavior at Home (mean, S.D.)					
GEB_H1[2)]	3.98 (1.25)	4.13 (1.10)	4.46 (0.95)	F (2, 522) = 5.039, p < .01	Yes
GEB_H2[2)]	3.79 (1.16)	4.02 (1.00)	4.21 (0.99)	F (2, 522) = 5.261, p < .01	Yes
GEB_H3[2)]	3.81 (1.11)	3.97 (1.10)	4.32 (0.92)	F (2, 522) = 6.615, p < .01	Yes
General Environmental Behavior at Tailgating (mean, S.D.)					
GEB_T1[2)]	3.02 (1.32)	3.21 (1.31)	3.43 (1.43)	F (2, 522) = 3.032, p = .05	No
GEB_T2[2)]	2.80 (1.30)	3.06 (1.26)	3.32 (1.33)	F (2, 522) = 5.21, p < .01	Yes
GEB_T3[2)]	2.97 (1.33)	3.16 (1.31)	3.36 (1.34)	F (2, 522) = 2.975, p = .053	No

Appendix J On-site Survey Used at the Second Phase Survey

(Fit into two pages, print both-sided)

MSU Game Day Survey

Dear Tail Gate Participant:

Researchers from the Department of Community Sustainability at MSU are working to better understand the relationship between one's attitudes regarding recycling in daily life and when one attends a major sporting event. This research is funded in part by the MSU Office of Campus Sustainability. It will be used to help guide future recycling efforts on campus for major events.

Please take the 10 minutes or so needed to complete this survey. You indicate your voluntary agreement to participate by completing and returning this survey. You will be asked to participate in a follow-up survey by providing your email or mailing address. However, if you choose not to complete all or part of the questions, you will not suffer any penalty. You are free to discontinue your participation at any time. Your responses will be kept confidential and your privacy will be protected to the maximum extent allowable by law. Thanks! Ju Hyoung Han, Doctoral Candidate and Dr. Chuck Nelson, Associate Professor, Department of Community Sustainability, 131 Natural Resources Building, MSU. For further information contact hanju@msu.edu or nelsonc@msu.edu.

1. Are you best described currently as (check one)

❒ An MSU Employee
❒ An MSU Student
❒ Not MSU Student or Employee

***1a. If you are not a current MSU student or employee*, check those that apply. Are you**

❒ An MSU Alumnus
❒ A family member of an MSU student
❒ A family member of an MSU employee

2. What is your five-digit zip code? _____

3. In what year were you born? _____

4. What is your gender? ❒ Male ❒ Female

5. Are you here as a fan of (check one) ❒ MSU team ❒ Visiting team ❒ Other: _____

6. Are you attending the game today? ❒ Yes ❒ No

7. Are you the leader of the tailgate at this site? ❒ Yes ❒ No

8. How many miles did you travel from your principal home <u>to East Lansing</u> for this experience? _____# MILES (One-way)

9. How many people came with you to this tailgate?

#_____ adults 18 and older (incl. you) & #_____ children under 18

10. Which one best describes those who came with you to this tailgate? (please check one)

❒ By myself ❒ Family only ❒ Friends only
❒ Family and Friends ❒ Club/Organization
❒ Other _____

11. Have you tailgated before today? ❒ YES ❒ NO

If yes,

11a. What was the first year you tailgated at MSU? _____

11b. What was the first year you tailgated at other universities/colleges? _____

11c. How many times did you tailgate at MSU during the years 2010, 2011 and 2012? _____ # TOTAL TIMES

11d. How many times did you tailgate at other universities/colleges during the years 2010, 2011 and 2012

_____ # TOTAL TIMES

12. For each statement, please circle the one number that best describes you in regard to the statement about tailgating, whether at MSU or elsewhere.

	Strongly Disagree ⟷ *Strongly Agree*				
Tailgating is one of the most enjoyable things I do.	1	2	3	4	5
I find a lot of my life is organized around Tailgating.	1	2	3	4	5
I enjoy discussing Tailgating with my friends.	1	2	3	4	5
When I participate in Tailgating, I can really be myself.	1	2	3	4	5
I can tell a lot about a person by seeing them Tailgating.	1	2	3	4	5

13. I was aware that MSU is operating recycling programs in tailgating areas today before receiving this questionnaire. ❒ Yes ❒ No

14. I know where to recycle near my tailgating location today. ❒ Yes ❒ No

15. Please circle the one response that best describes your perceptions of MSU's recycling activity at football tailgating.

	Strongly Disagree ⟷ *Strongly Agree*				
MSU has visible communications about its green practices at tailgating.	1	2	3	4	5
MSU has established active recycling programs where I am tailgating.	1	2	3	4	5
MSU has established systems to reduce food/material waste during tailgating.	1	2	3	4	5

16. Please circle the response that best describes your behaviors at your home and at MSU football tailgating.

0	1 2 3 4 5
Don't Use	Never ⟷ Always

AT HOME							**AT TAILGATING**						
NA	1	2	3	4	5	I recycle materials.	NA	1	2	3	4	5
NA	1	2	3	4	5	I look for ways to reuse things.	NA	1	2	3	4	5
NA	1	2	3	4	5	I look for ways to reduce food/material waste.	NA	1	2	3	4	5
0	1	2	3	4	5	I recycle non-deposit glass containers.	0	1	2	3	4	5
0	1	2	3	4	5	I recycle non-deposit aluminum cans.	0	1	2	3	4	5
0	1	2	3	4	5	I recycle plastic (e.g., bottle, cup, grocery bags)	0	1	2	3	4	5
0	1	2	3	4	5	I recycle paper (e.g., mixed paper, boxboard).	0	1	2	3	4	5

NA: Not Applicable

17. Please circle the one response that best describes your perceived level of difficulty concerning recycling at home and at MSU football tailgating.

0	1 2 3 4 5
Don't Use	*Not Difficult At All* ⟷ *Very Difficult*

AT HOME							AT TAILGATING					
0	1	2	3	4	5	Recycling non-deposit glass containers.	0	1	2	3	4	5
0	1	2	3	4	5	Recycling non-deposit aluminum cans.	0	1	2	3	4	5
0	1	2	3	4	5	Recycling plastic (e.g., bottle, cup, grocery bags).	0	1	2	3	4	5
0	1	2	3	4	5	Recycling paper (e.g., mixed paper, boxboard).	0	1	2	3	4	5

NA: Not Applicable

18. Please share your general perceptions of recycling practices in regards to non-deposit glass and cans, as well as plastic and paper.

	Strongly Disagree ⟷ *Strongly Agree*				
I feel morally obligated to engage in recycling.	1	2	3	4	5
I should do anything I can do to recycle.	1	2	3	4	5
I feel guilty when I waste recyclable materials.	1	2	3	4	5
Most people who are important to me think that I should engage in recycling.	1	2	3	4	5
I think that a majority of people in the United States engage in recycling.	1	2	3	4	5
I think that a majority of people at tailgating areas at MSU engage in recycling.	1	2	3	4	5
I think that a majority of people in my community engage in recycling.	1	2	3	4	5
A majority of people in the United States should engage in recycling.	1	2	3	4	5
A majority of people at tailgating areas at MSU should engage in recycling.	1	2	3	4	5
A majority of people in my residential community should engage in recycling.	1	2	3	4	5
I recycle because of the enjoyment that I feel.	1	2	3	4	5
I take satisfaction in recycling.	1	2	3	4	5
I recycle because I enjoy learning new skills/techniques.	1	2	3	4	5
One of the best things about recycling is that it helps lower costs to society.	1	2	3	4	5
We should recycle materials and protect the environment to benefit people.	1	2	3	4	5
My health and the health of my family may improve because of recycling.	1	2	3	4	5

Thank you very much for your help today!

Appendix K Skewness and Kurtosis of Measurement Items

Table K - 1 Skewness and kurtosis of measurement items

Measurement Items	Skewness	Kurtosis
(PMN1) I feel morally obligated to engage in recycling.	2.18	-4.85
(PMN2) I should do anything I can do to recycle.	1.91	-4.78
(PMN3) I feel guilty when I waste recyclable materials.	1.23	-5.33
(DSN1) I think that a majority of people in the United States engage in recycling.	2.80	-1.37
(DSN2) I think that a majority of people at tailgating areas at MSU engage in recycling.	3.06	-1.47
(DSN3) I think that a majority of people in my community engage in recycling.	-2.14	-2.14
(ISN1) A majority of people in the United States should engage in recycling.	-3.13	-6.68
(ISN2) A majority of people at tailgating areas at MSU should engage in recycling.	-1.81	-7.00
(ISN3) A majority of people in my residential community should engage in recycling.	-2.92	-6.71
(HG1) I recycle because of the enjoyment that I feel.	-2.62	-3.34
(HG2) I take satisfaction in recycling.	1.38	-5.18
(HG3) I recycle because I enjoy learning new skills/techniques.	1.23	-3.82
(GG1) One of the best things about recycling is that it helps lower costs to society.	-0.35	-5.20
(GG2) We should recycle materials and protect the environment to benefit people.	-2.89	-6.37
(GG3) My health and the health of my family may improve because of recycling.	1.35	-5.15

Note: PMN=personal moral norms; DSN=descriptive social norms; ISN=injunctive social norms; HG=hedonic goals; GG=gain goals

Appendix K: Skewness and Kurtosis of Measurement Items (Cont'd)

Table K - 1 (Cont'd)

Measurement Items	Skewness	Kurtosis
(PBD_H1) Recycling non-deposit glass containers at home.	2.16	-6.88
(PBD_H2) Recycling non-deposit aluminum cans at home.	3.02	-6.66
(PBD_H3) Recycling plastic (e.g., bottle, cup, grocery bags) at home.	2.66	-6.58
(PBD_H4) Recycling paper (e.g., mixed paper, boxboard) at home.	1.86	-6.66
(PBD_T1) Recycling non-deposit glass containers at tailgating.	-1.01	-4.21
(PBD_T2) Recycling non-deposit aluminum cans at tailgating.	-0.83	-4.33
(PBD_T3) Recycling plastic (e.g., bottle, cup, grocery bags) at tailgating.	-0.42	-3.89
(PBD_T4) Recycling paper (e.g., mixed paper, boxboard) at tailgating.	-1.19	-4.27
(PEB_H1) I recycle non-deposit glass containers at home.	-3.12	-7.24
(PEB_H2) I recycle non-deposit aluminum cans at home.	-3.49	-5.71
(PEB_H3) I recycle plastic (e.g., bottle, cup, grocery bags) at home.	-3.03	-6.74
(PEB_H4) I recycle paper (e.g., mixed paper, boxboard) at home.	-3.39	-7.11
(PEB_T1) I recycle non-deposit glass containers at tailgating.	-1.74	-5.37
(PEB_T2) I recycle non-deposit aluminum cans at tailgating.	-1.80	-5.43
(PEB_T3) I recycle plastic (e.g., bottle, cup, grocery bags) at tailgating.	-0.68	-5.06
(PEB_T4) I recycle paper (e.g., mixed paper, boxboard) at tailgating.	1.33	-5.21
(HABIT_H1) I look for ways to reuse things at home.	-0.98	-7.15
(HABIT_H2) I look for ways to reduce food/material waste at home.	0.97	-7.07
(HABIT_T1) I look for ways to reuse things at tailgating.	-0.65	-4.59
(HABIT_T2) I look for ways to reduce food/material waste at tailgating.	-1.00	-3.98
AGE	1.14	-4.23

Note: PBD=perceived behavioral difficulty; PEB=pro-environmental behavior; HABIT=habitual environmental behavior

REFERENCES

REFERENCES

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuh and J. Beckmann (Eds.), *Action control: From cognition to behaviour* (pp. 11-39). Berlin: Springer-Verlag.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, *103*(3), 411.

Andersson, M., & von Borgstede, C. (2010). Differentiation of determinants of low-cost and high-cost recycling. *Journal of Environmental Psychology*, *30*(4), 402-408.

Babbie E. 2010. *The Practice of Social Research* (12th ed.). Thomson Wadsworth.

Babiak, K., & Trendafilova, S. (2011). CSR and environmental responsibility: motives and pressures to adopt green management practices. *Corporate Social Responsibility and Environmental Management*, *18*(1), 11-24.

Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology, 27*(1), 14-25.

Barker, M., Page, S. J., & Meyer, D. (2002). Modeling tourism crime-the 2000 America's cup. *Annals of Tourism Research, 29*(3), 762–782.

Barr, S. (2007). Factors influencing environmental attitudes and behaviors: A U.K. case study of household waste management. *Environment and Behavior, 39*(4), 435-473.

Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Sociological Methods & Research*, *16*(1), 78-117.

Black, J. S., Stern, P. C., & Elworth, J. T. (1985). Personal and contextual influences on household energy adaptations. *Journal of Applied Psychology*, *70*(1), 3.

Boomsma, A., & Hoogland, J. J. (2001). The robustness of LISREL modeling revisited. *Structural equation models: Present and future. A Festschrift in honor of Karl Jöreskog*, 139-168.

Bos, H. (1994). The importance of mega-events in the development of tourism demand. *Festival Management and Event Tourism*, *2*(1), 55-58.

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, 39(5), 752–766.

Chalip, L., Green, C., & Hill, B. (2003). Effects of sport media on destination image and intentions to visit. *Journal of Sport Management, 17,* 214–234.

Cialdini, R. B., Demaine, L. J., Sagarin, B. J., Barrett, D. W., Rhoads, K., & Winter, P. L. (2006). Managing social norms for persuasive impact. *Social Influence*, 1(1), 3-15.

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology, 58*(6), 1015-1026.

Clark, C. F., Kotchen, M. J., & Moore, M. R. (2003). Internal and external influences on pro-environmental behavior: Participation in a green electricity program. *Journal of Environmental Psychology, 23*(3), 237-246.

Coakley, J. J., & Donnelly, P. (1998). *Sport in society: Issues and controversies*. Boston, MA: Irwin/McGraw-Hill.

Cohen, E. (1979). A Phenomenology of tourist experiences. *Sociology, 13*(2), 179-201.

Corraliza, J. A., & Berenguer, J. (2000). Environmental values, beliefs, and actions: A situational approach. *Environment and Behavior*, *32*(6), 832-848.

Corral-Verdugo, V. c. (1997). Dual 'realities' of conservation behavior: Self-reports vs observations of re-use and recycling behavior. *Journal of Environmental Psychology, 17*(2), 135-145.

Crompton, J., & McKay, S. (1994). Measuring the economic impact of festivals and events: Some myths, misapplications and ethical dilemmas. *Festival Management and Event Tourism, 2*(1), 33–43.

Crompton, J., & McKay, S. (1997). Motives of visitors attending festival events. *Annals of Tourism Research, 24*(2), 425–439.

Dawson, J., Havitz, M., & Scott, D. (2011). Behavioral Adaptation of Alpine Skiers to Climate Change: Examining Activity Involvement and Place Loyalty. *Journal of Travel & Tourism Marketing, 28*(4), 388-404.

De Young, R. (1986) Encouraging environmentally appropriate behavior: The role of intrinsic motivation. *Journal of Environmental Systems, 15*(4), 281-292.

Deci, E. L., & Ryan, R. M. (1985). *Self-determination*. John Wiley & Sons, Inc.

Deery, M., Jago, L., & Fredline, E. (2004). Sport tourism or event tourism: Are they one and the same? *Journal of Sport Tourism, 9*(3), 235–246.

Diekmann, A., & Preisendörfer, P. (2003). Green and Greenback The Behavioral Effects of Environmental Attitudes in Low-Cost and High-Cost Situations. *Rationality and Society*, *15*(4), 441-472.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (Vol. 2). New York: Wiley.

Do Valle, P. O., Rebelo, E., Reis, E., & Menezes, J. (2005). Combining behavioral theories to predict recycling involvement. *Environment and behavior*, *37*(3), 364-396.

Dolnicar, S. (2010). Identifying tourists with smaller environmental footprints. *Journal of Sustainable Tourism*, 18(6), 717-734.

Dolnicar, S., & Leisch, F. (2008). Selective marketing for environmentally sustainable tourism. *Tourism Management, 29*(4), 672-680.

Drenten, J., Peters, C. O., Leigh, T., & Hollenbeck, C. R. (2009). Not just a party in the parking lot: An exploratory investigation of the motives underlying the ritual commitment of football tailgaters. *Sport Marketing Quarterly*, *18*(2). 92-106.

Dunlap, R. E., & Van Liere, K. (1978). The new environmental paradigm. *Journal of Environmental Education*, *9*, 10-19.

Environmental Protection Agency (EPA) (2012) 2011 *Game Day Challenge result*. Retrieved as of September 10, 2012 from http://www.epa.gov/wastes/conserve/smm/wastewise/challenge/gameday/results.htm

Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston: Row Peterson.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage

Font, X., & Harris, C. (2004). Rethinking standards from green to sustainable. *Annals of Tourism Research, 31*(4), 986–1007.

Ford, J. K., MacCallum, R. C., & Tait, M. (1986). The application of exploratory factor analysis in applied psychology: A critical review and analysis. *Personnel Psychology*, *39*(2), 291-314.

Gammon, S., & Robinson, T. (1997). Sport and tourism: a conceptual framework. *Journal of Sport Tourism*, *4*(3), 11-18.

Gartner, W. C., & Holecek, D. F. (1983). Economic impact of an annual tourism industry exposition. *Annals of Tourism Research*, *10*(2), 199-212.

Gelder, K. (2007). *Subcultures: Cultural histories and social practice*. Routledge.

Getz, D. (1989). Special events: Defining the product. *Tourism Management, 10*(2), 125-137.

Getz, D. (1991). *Festivals, special events, and tourism*. New York: Van Nostrand Rheinhold.

Getz, D. (2008). Event tourism: Definition, evolution, and research. *Tourism Management, 29*(3), 403-428.

Gibson, H. J. (1998). Sport tourism: A critical analysis of research. *Sport Management Review, 1*(1), 45-76.

Goldblatt, S. (2011). *The Complete Guide to Greener Meetings and Events* . John Wiley & Sons, Inc., Hoboken, New Jersey.

Goldstein, N. J., Cialdini, R. B., & Griskevicius, V. (2008). A Room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research*, 35(3), 472-482.

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Gramann, J. H., Christensen, H. H., & Vander Stoep, G. A. (1992). Indirect management to protect natural resources: Research, ethics, and social policy. In H. Christen, D. Johnson, and M. Brookes (Eds.), *Vandalism: Research, prevention and social policy* (pp.251-264). General Technical Report PNW-GTR-293. Portland, OR: USDA Forest Service Pacific Northwest Research Station.

Green-Demers, I., Pelletier, L. G., & Ménard, S. (1997). The impact of behavioural difficulty on the saliency of the association between self-determined motivation and environmental behaviours. *Canadian Journal of Behavioural Science, 29*(3), 157-166.

Gross, M.J., & Brown, G. (2006). Tourism experiences in a lifestyle destination setting: The roles of involvement and place attachment. *Journal of Business Research, 59*, 696–700.

Gruneau, R. S. (1980). Freedom and constraint: The paradoxes of play, games, and sports. *Journal of Sport History*, *7*(3), 68-86.

Guadagnoli, E., & Velicer, W. F. (1988). Relation to sample size to the stability of component patterns. *Psychological Bulletin*, *103*(2), 265.

Guagnano, G. A., Stern, P. C., & Dietz, T. (1995). Influences on attitude-behavior relationships a natural experiment with curbside recycling. *Environment and behavior*, *27*(5), 699-718.

Gunn, C.A. (1979). *Tourism planning* (1st ed.). New York: Crane Russak and Company.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. L. (2006). *Multivariate data analysis.* (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Hall, C. M. (1989). The definition and analysis of hallmark tourist events. *GeoJournal*, *19*(3), 263-268.

Hall, C. M. (1992). *Hallmark tourist events: Impacts, management and planning*. London: Belhaven.

Hammitt, W. E., & McDonald, C. D. (1983). Past on-site experience and its relationship to managing river recreation resources. *Forest Science* 29:262–266.

Hammitt, W. E., Backlund, E. A., & Bixler, R. D. (2004). Experience use history, place bonding and resource substitution of trout anglers during recreation engagements. *Journal of Leisure Research, 36*(3), 356-378.

Hartmann, P., & Apaolaza-Ibáñez, V. (2008). Virtual nature experiences as emotional benefits in green product consumption. *Environment and Behavior, 40*(6), 818-842.

Hede, A. M. (2008). Managing special events in the new era of the triple bottom line. *Event Management, 11* (1–2), 13–22

Higham, J. (1999). Commentary - Sport as an Avenue of Tourism Development: An Analysis of the Positive and Negative Impacts of Sport Tourism. *Current Issues in Tourism, 2*(1), 82-90.

Holcomb, J. L., Upchurch, R. S., & Okumus, F. (2007). Corporate social responsibility: What are top hotel companies reporting?. *International Journal of Contemporary Hospitality Management*, *19*(6), 461-475.

Ibitayo, O. O., & Virden, R. J. (1996). Visitor and manager perceptions of depreciative behaviors in urban park settings. *Journal of Park and Recreation Administration, 14*, 36–51

Jafari, J. (1987). Tourism models: The sociocultural aspects. *Tourism Management*, *8*(2), 151-159.

James, J., Breezeel, G. S., & Ross, S. (2001). A two-stage study of the reasons to begin and continue tailgating. *Sport Marketing Quarterly, 10*(4), 212-222.

Jutla, R. S. (2000). Visual image of the city: tourists' versus residents' perception of Simla, a hill station in northern India. *Tourism geographies*, *2*(4), 404-420.

Kaiser, F. G. (2006). A moral extension of the theory of planned behavior: Norms and anticipated feelings of regret in conservationism. *Personality and Individual Differences, 41*(1), 71-81.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*, 141-151.

Kaltenborn, B. P., & Williams, D. R. (2002). The meaning of place: attachments to Femundsmarka National Park, Norway, among tourists and locals. *Norsk Geografisk Tidsskrift*, *56*(3), 189-198.

Kline, R. B. (1998). *Principles and practice of structural equation modeling*. *Guilford, New York.*

Klöckner, C. A., & Oppedal, I. O. (2011). General vs. domain specific recycling behaviour—Applying a multilevel comprehensive action determination model to recycling in Norwegian student homes. *Resources, Conservation and Recycling, 55*(4), 463-471.

Knussen, C., & Yule, F. (2008). "I'm not in the habit of recycling": The role of habitual behavior in the disposal of household waste. *Environment and Behavior, 40*(5), 683-702.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, *8*(3), 239-260.

Kyle, G. T., Absher, J. D., Hammitt, W. E., & Cavin, J. (2006). An Examination of the Motivation—Involvement Relationship. *Leisure Sciences, 28*(5), 467-485.

Kyle, G. T., Graefe, A. R., Manning, R. E., & Bacon, J. (2003). An examination of the relationship between leisure activity involvement and place attachment among hikers along the Appalachian Trail. *Journal of Leisure Research*, 35, 249–273.

Kyle, G., Absher, J., Norman, W., Hammitt, W., & Jodice, L. (2007). A modified involvement scale. *Leisure Studies*, *26*(4), 399-427.

Laing, J., & Frost, W. (2010). How green was my festival: Exploring challenges and opportunities associated with staging green events. *International Journal of Hospitality Management*, *29*(2), 261-267.

Lee, C.-K., & Taylor, T. (2005). Critical reflections on the economic impact assessment of a mega-event: the case of 2002 FIFA World Cup. *Tourism Management, 26*(4), 595-603.

Lee, T. H. (2011). How recreation involvement, place attachment and conservation commitment affect environmentally responsible behavior. *Journal of Sustainable Tourism, 19*(7), 895-915.

Leiper, N. (1979). The framework of tourism: towards a definition of tourism, tourist, and the tourist industry. *Annals of Tourism Research*, *6*(4), 390-407.

Lindenberg, S., & Steg, L. (2007). Normative, gain and hedonic goal frames guiding environmental behavior. *Journal of Social Issues*, 63(1), 117-137.

Mair, J., & Laing, J. H. (2013). Encouraging pro-environmental behaviour: the role of sustainability-focused events. *Journal of Sustainable Tourism*, *21*(8), 1113-1128.

Masberg, B. A. (1998). Defining the Tourist: Is It Possible? A View from the Convention and Visitors Bureau. *Journal of Travel Research, 37*(1), 67-70.

McIntosh, R. W., Goeldner, C. R., & Ritchie, J. B. (1995). *Tourism: principles, practices, philosophies*. John Wiley And Sons.

McIntyre, N. & Pigram, J. J. (1992). Recreation specialization reexamined: The case of vehicle-based campers. *Leisure Sciences, 14*, 3–15.

McIntyre, N. (1989). The personal meaning of participation: Enduring involvement. Journal of *Leisure Research, 21*, 167–179.

Miao, L., & Wei, W. (2013). Consumers' pro-environmental behavior and the underlying motivations: A comparison between household and hotel settings. *International Journal of Hospitality Management, 32,* 102-112.

Michigan State Athletics Department (2013). *MSU reports record football season-ticket sales*. Retrieved as of February 24, 2012 from http://www.msuspartans.com/sports/m-footbl/spec-rel/083112aac.html.

Michigan State University Athletics News (2007). *Launches GO GREEN Expanded Recycling Initiative*. Retrieved as of April 18, 2013from http://www.msuspartans.com/genrel/082107aac.html.

Michigan State University Game Day (2013). *Tailgating on campus*. Retrieved as of April 18, 2013from http://www.gameday.msu.edu/Tailgating.html.

Michigan State University Office of Campus Sustainability (2013). *About sustainability*. Retried as of April 18, 2013 from http://sustainability.msu.edu.

Michigan State University Recycling (2013). *Game Day Challenge*. Retrieved as of April 18, 2013from http://recycle.msu.edu/events-3/game-day-challenge.

Michigan State University Surplus Store and Recycling Center (2013). *Rethinking Reduce, Reuse, Recycle.* Retried as of April 18, 2013 from http://recycle.msu.edu.

Mick, D.G. (1996). Are studies of dark side variables confounded by socially desirable responding? The case of materialism. *Journal of Consumer Research, 23,* 106–119.

Milfont, T. L. (2009). The effects of social desirability on self-reported environmental attitudes and ecological behaviour. *The Environmentalist, 29,* 263–269.

National Collegiate Athletic Association (NCAA) (2014). *2013 National college football attendance*. Retrieved as of April 2014. From http://fs.ncaa.org/Docs/stats/football_records/Attendance/2013.pdf.

National Tourism Resources Review Commission (1973). *Destination USA.* Washington, DC: U.S. Government Printing Office.

Nilsson, A., von Borgstede, C., & Biel, A. (2004). Willingness to accept climate change strategies: The effect of values and norms. *Journal of Environmental Psychology, 24*(3), 267-277.

Nolan, J. M., Schultz, P. W., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2008). Normative social influence is underdetected. *Personality and social psychology bulletin*, *34*(7), 913-923.

Nordlund, A. M., & Garvill, J. (2002). Value structures behind proenvironmental behavior. *Environment and Behavior, 34*(6), 740-756.

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

Ong, T. F., & Musa, G. (2012). Examining the influences of experience, personality and attitude on SCUBA divers' underwater behaviour: A structural equation model. *Tourism Management, 33*(6), 1521-1534.

Paddick, R. J. (1975). What makes physical activity physical?. *Journal of the Philosophy of Sport*, *2*, 12-22.

Park, H. S., & Smith, S. W. (2007). Distinctiveness and influence of subjective norms, personal descriptive and injunctive norms, and societal descriptive and injunctive norms on behavioral intent: A case of two behaviors critical to organ donation. *Human Communication Research, 33*(2), 194-218.

Pearce, P. L. (1982). *The social psychology of tourist behaviour,* Pergamon Press, Oxfordshire, New York.

Pelletier, L. G., Tuson, K. M., Green-Demers, I., Noels, K., & Beaton, A. M. (1998). Why are you doing things for the environment? The motivation toward the environment scale. *Journal of Applied Social Psychology, 28*(5), 437-468.

Perkins, H. W., & Berkowitz, A. D. (1986). Perceiving the community norms of alcohol use among students: Some research implications for campus alcohol education programming. *International Journal of The Addictions*, 21, 961–976.

Petty, E. R., & Cacioppo, T. J. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology*, *41*(5), 847–855.

Presbury, R., & Edwards, D. (2005). Incorporating sustainability in meetings and event management education. *International Journal of Event Management Research, 1*(1), 30–45.

Ramayah, T., Lee, J. W. C., & Lim, S. (2012). Sustaining the environment through recycling: An empirical study. *Journal of Environmental Management*, *102*, 141-147.

Ritchie, B., & Adair, D. (2002). The Growing Recognition of Sport Tourism. *Current Issues in Tourism, 5*(1), 1-6.

Ritchie, J.R.B. (1984). Assessing the impact of hallmark events: conceptual and research issues. *Journal of Travel research*, *23*(1), 2-11.

Ritchie, J.R.B., & Beliveau, D. (1974). Hallmark events: An evaluation of a strategic response to seasonality in the travel market. *Journal of Travel Research*, *13*(2), 14-20.

Robins, R. W., Fraley, R. C., & Krueger, R. F. (Eds.). (2009). *Handbook of research methods in personality psychology*. Guilford Press.

Schwartz, S. H. (1977). Normative influences on altruism. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp 221-279). New York: Academic Press.

Sidique, S. F., Lupi, F., & Joshi, S. V. (2010). The effects of behavior and attitudes on drop-off recycling activities. *Resources, Conservation and Recycling*, *54*(3), 163-170.

Smith, M. F. (2005). Spotlight events, media relations, and place promotion: A case study. *Journal of Hospitality and Leisure Marketing, 12(*1–2), 115–134.

Smith, S. M., Haugtvedt, C. P., & Petty, R. E. (1994). Attitudes and recycling: Does the measurement of affect enhance behavioral prediction?. *Psychology & Marketing*, *11*(4), 359-374.

Smith, V. L. (1978*). Hosts and guests: The anthropology of tourism*: Oxford: Blackwells.

Snelgrove, R., Taks, M., Chalip, L., & Green, B. C. (2008). How visitors and locals at a sport event differ in motives and identity. *Journal of Sport & Tourism*, *13*(3), 165-180.

Snepenger, D. J., Murphy, L., O'Connell, R., & Gregg, E. (2003). Tourists and residents use of a shopping space. *Annals of Tourism Research*, *30*(3), 567-580.

Standeven, J., & DeKnop, P. (1999). *Sport tourism*. Champaign, IL: Human Kinetics.

Stebbins, R. A. (1982). Serious leisure: A conceptual statement. *Pacific Sociological Review*, 251-272.

Steg, L. (2008). Promoting household energy conservation. *Energy Policy, 36*(12), 4449-4453.

Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues, 56*(3), 407-424.

Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human Ecology Review, 6*(2), 81-95.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Upper Saddle River, NJ: Pearson Allyn & Bacon.

Thøgersen, J. (2004). A cognitive dissonance interpretation of consistencies and inconsistencies in environmentally responsible behavior. *Journal of Environmental Psychology, 24*(1), 93-103.

Thøgersen, J. (2006). Norms for environmentally responsible behaviour: An extended taxonomy. *Journal of Environmental Psychology, 26*(4), 247-261.

Thøgersen, J., & Ölander, F. (2006). To what degree are environmentally beneficial choices reflective of a general conservation stance? *Environment and Behavior, 38*(4), 550-569.

Trendafilova, S., Babiak, K., & Heinze, K. (2013). Corporate social responsibility and environmental sustainability: Why professional sport is greening the playing field. *Sport Management Review, 16*(3), 298-313.

Turaga, R. M. R., Howarth, R. B., & Borsuk, M. E. (2010). Pro-environmental behavior: Rational choice meets moral motivation. *Annals of the New York Academy of Sciences, 1185*(1), 211-224.

Turner, V. (1969). *The ritual process: Structure and anti-structure*. New York: Aldine de Gruyter.

United Nations Environment Programme (2014) *Sport and the Environment*, Retrieved as of February 15, 2014, from http://www.unep.org/sport_env/about.aspx.

Uysal, M., Gahan, L., & Martin, B. (1993). An examination of event motivations: A case study. *Festival Management and Event Tourism, 1*(1), 5–10.

Verdugo, V. C., Bernache, G., Encinas, L., & Garibaldi, L. C. (1994). A comparison of two measures of reuse and recycling behavior: Self-report and material culture. *Journal of Environmental Systems*, *23*(4), 313-327.

Vining, J., & Ebreo, A. (1990). What makes a recycler? A comparison of recyclers and nonrecyclers. *Environment and behavior*, *22*(1), 55-73.

Vining, J., & Ebreo, A. (1992). Predicting recycling behavior from global and specific environmental attitudes and changes in recycling opportunities. *Journal of Applied Social Psychology*, *22*(20), 1580-1607.

Virden, R. J. (1992). Integrating past experience into leisure marketing strategies. *Leisure Information Quarterly, 16(*1), 6-8.

Warriner, G. K., McDougall, G. H., & Claxton, J. D. (1984). Any data or none at all? Living with inaccuracies in self-reports of residential energy consumption. *Environment and Behavior*, *16*(4), 503-526.

Wheaton, B. (2000). "Just Do It": Consumption, commitment, and identity in the windsurfing subculture. *Sociology of Sport Journal*, *17*(3), 254-274.

White, D., Virden, R., & van Riper, C. (2008). Effects of Place Identity, Place Dependence, and Experience-Use History on Perceptions of Recreation Impacts in a Natural Setting. *Environmental Management, 42*(4), 647-657.

Whitmarsh, L., & O'Neill, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of Environmental Psychology, 30*(3), 305-314.

Wiley, C.G.E., Shaw, S.M., & Havitz, M.E. (2000). Men's and women's involvement in sports: An examination of gendered aspects of leisure involvement. *Leisure Sciences, 22*, 19–31.

Williams, D. R., Schreyer, R., & Knopf, R. C. (1990). The effect of the experience use history on the multidimensional structure of motivations to participate in leisure activities. *Journal of Leisure Research, 23*(1), 36-54.