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YOUNGER MILLENNIALS AND OUTDOOR RECREATION: UNDERSTANDING
OUTDOOR RECREATIONAL PURSUITS OF MILLENNIAL COLLEGE STUDENTS

BY

JASON MEHLHAF

A thesis submitted in partial fulfillment of the requirements for the

Master of Science

Major in Sport and Recreation Administration

South Dakota State University

2019

YOUNGER MILLENNIALS AND OUTDOOR RECREATION: UNDERSTANDING
OUTDOOR RECREATIONAL PURSUITS OF MILLENNIAL COLLEGE STUDENTS

JASON MEHLHAF

This thesis is approved as a creditable and independent investigation by a candidate for the Master of Science Degree in Sport and Recreation Administration and is acceptable for meeting the thesis requirements for this degree. Acceptance of this does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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I would like to dedicate this project to my family, for encouraging me to continue my education and supporting me as I did so. Words cannot express how humbled and grateful I am to have them support me.

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ABSTRACT

YOUNGER MILLENNIALS AND OUTDOOR RECREATION: UNDERSTANDING
OUTDOOR RECREATIONAL PURSUITS OF MILLENNIAL COLLEGE STUDENTS

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Outdoor recreation has been shown through past research to provide numerous benefits to the participant when utilized, but for younger millennials, life's expectations are pulling them away from participating. If there is a decrease in recreation participation, what will motivate this demographic toward participation in the future? The purpose of this study is to identify younger millennial perceptions, habits, and trends, so that in the future, recreation professionals are able to cater for specifically toward this demographic. Two universities in South Dakota, one public and one private, were surveyed through an online software program, QuestionPro, to a convenience sample from both schools. Younger millennials were specifically targeted by focusing on college students, who are between the ages of 19-24, to narrow the sample down to those on the younger end of the generation. The results of descriptive analysis found that the respondents like to recreate with others and prefer leisure recreation (walking, recreation with pets, lawn games) to active recreation. The study also found a positive correlation between length of time recreating and respondent comfort levels, as well as a positive correlation between structural constraints and respondents desire to enjoy nature. The respondents are more interested in programs that cater toward their interests instead of programs focused on history or culture. Future recreation professionals could use the information found in this study to create recreation programs that encourage group participation, cater toward

millennial interests, and are more leisure orientated. By understanding motivations and constraints in this specific demographic, future professionals could draw new participants toward recreation and create lifelong users of outdoor recreation.

YOUNGER MILLENNIALS AND OUTDOOR RECREATION: UNDERSTANDING OUTDOOR RECREATIONAL PURSUITS OF MILLENNIAL COLLEGE STUDENTS

Introduction

Throughout history, recreation has been thought of as any voluntary participation in leisure activities that are meaningful and enjoyable to the person participating (Cordes & Ibrahim, 1999), which include both indoor and outdoor recreation habits, and active and passive interests. More specifically, outdoor recreation can be defined as leisure activities, or recreation, within the natural environment, and the interaction (or appreciation) between the participants and the natural environment (Jensen & Guthrie, 2006).

As children mature into adults, they discover the activities and habits they enjoy, which are then molded and shaped by their beliefs, perceptions, and ideals. These activities and habits stem from what the user is passionate about and when the passion is focused on outdoor recreation, those outdoor recreation pursuits provide the participant with benefits that have the possibility of becoming noticeable. These benefits include increasing physical well-being through physical activity (Bedimo-Rung, Mowen, & Cohen, 2005; Cohen et al., 2007), or include increasing mental well-being, boosting mental health, and decreasing stress (Whiting, Larson, Green, & Kralowec, 2017).

Even though physical and mental benefits are often noticeable, outdoor recreation is unique, where the benefits received from participation are secondary to the emotional and motivational states that occur during participation within recreation (Ellis & Rossman, 2008). The experience, which the participant receives through active involvement, includes the feelings of joy or excitement, memories that are being made,

and the sense of autonomy and independence that is developed and grown. These feelings are what are often on the forefront of user's minds during participation, instead of thoughts of reducing health problems and increasing one's well-being (Ellis & Rossman, 2008). When these emotional needs are met and satisfied, the motivational states behind participation have the possibility of heightening, thus encouraging participation in the future (Gage III & Thapa, 2012; Mannell & Kleiber, 1997). Discovering the reasons why participation occurs could help researchers understand the driving factors that motivate or un-motivate potential users within a demographic.

One demographic that has the possibility of providing researchers with new and interesting breakthroughs are millennials, and due to the ambiguity of the term "millennial", for the duration of this research, "millennial" will encompass those born between 1980 and 2000, ranging in age from 39 to 19 (Barton, 2012; Howe & Strauss, 2009; Stein, 2013). More specifically, "younger millennials" will be defined as those between the ages of 19 and 27. This age range was chosen to target those who are caring for themselves now that they are starting the next portion of their lives living away from their parents or guardians (Dane, 2017; Hosie, 2017). This range will incorporate not only incoming and current college-aged students, but also include those starting their first professional job post-graduation, as well as those that are starting families (Dane, 2017; Hosie, 2017; Stein, 2013). This age range was selected because of the aspects previously listed, as well as because they are the first generation of "digital natives" (Prensky, 2001). The term "digital native" refers to those born or raised during the age of digital technology, and as a result, are familiar with computers and the Internet from an early age (Calk & Patrick, 2017; Dane, 2017; Hosie, 2017). Being a "digital native", which is

neither positive nor negative, has led to a phenomenon called Videophilia: the human tendency to focus on sedentary activities involving electronic media (Barton, 2012; Pergams & Zaradic, 2006). Videophilia is the antithesis of Biophilia: the phenomenon that describes people's innate need or desire to create connections with natural areas or other forms of life (Pergams & Zaradic, 2006; Wilson, 1984).

Now that younger millennials are finding ways to take care of themselves through stress management practices, they have the opportunity to increase participation rates in outdoor recreation activities; however, they also run the risk of unknowingly creating leisure constraints toward outdoor recreation if they are not actively recognizing those constraints (Jackson, Crawford, & Godbey, 1993; White, 2008). The failure to recognize leisure constraints could inevitably lead to future physical and mental health issues, as well as a lack of knowledge in environmental issues. If these millennials do not understand how to overcome their constraints, they might not even be given the option to participate (White, 2008).

There is a dearth of knowledge on how to effectively motivate specific demographics towards recreational pursuits. This dearth arises from current research that shows there has been a decline in outdoor participation over the last 12 years, most significantly with those that would be classified as millennials (Outdoor Foundation, 2017). Despite the benefits of outdoor recreation that have been discussed in literature, children within society have now been taught to avoid direct contact with the outdoors and to either watch nature from a distance or completely ignore nature (Louv, 2005). In the future, continuing research could be catered toward this specific generation, their

outdoor recreation habits, and their motivation to participate in those behaviors in order to promote an outdoor recreation centered lifestyle.

The focus of this study aims to see if millennials follow current research trends previously understood about outdoor recreation participation. Understanding the focus behind this research has the ability to aid future researchers interested in this demographic by attempting to expand research focused on millennial perceptions and motivations that occur during their leisure times (Barton, 2012). The research would assist in understanding younger millennials' motivation and constraints toward outdoor recreation to discover the most effective and efficient process for millennials to overcome leisure constraints. This could aid in determining an effective approach to motivate this specific generation and generate an interest in recreation pursuits.

Literature Review

Perceived Benefits of Outdoor Recreation

Participating in outdoor recreation plays an important role in encouraging physical activity, because utilizing outdoor areas such as parks provide places for participants to walk, jog, or engage in any other form of outdoor recreation. These outdoor areas also give participants a location to receive the benefits that are associated with outdoor recreation (Cohen et al., 2007). Benefits that come from visiting and using parks for outdoor recreation include, but are not limited to, having a lower risk of obesity, heart disease, and diabetes (Bedimo-Rung, Mowen, & Cohen, 2005). Research notes that physical activity and recreation, both indoors and outdoors, boosts mental health, decreases stress, and promotes a higher level of well-being. By providing opportunities for physical activity, such as paved paths, sport fields, courts and play grounds (Cohen et

al. 2007; Whiting et al. 2017), parks can assist in improving physical and psychological health benefits. These health benefits, which are categorized as physiological, emotional, and mental, stem from closeness to natural environments, including parks or wilderness, and can even be received by having a view of nature through a window. Research has also found that even the idea of having a green area to go to can improve mental and emotional health. Those who spend time engaging with natural environments report better health and overall well-being. While those who lived in areas with limited green spaces reported greater feelings of loneliness, lack of social support, and perceived poor mental health (Cohen et al. 2007; Whiting et al., 2017).

Outdoor recreation can also provide benefits to the environment when the participants practice environmental stewardship and sustainability. Natural resources, such as parks and green areas are important because they affect the balance of nature and the livelihood of the local populous (Alemu, 2015). Environmental stewardship, which includes responsible usage and protection of the environment, plays an important role when observing natural resources and their effect on the public; however, as individuals become progressively more physically disconnected from real-world environmental issues, conservation efforts become harder to visualize in the real world (Barton, 2012). Protecting those areas provides an opportunity to experience nature in a world where areas of nature are decreasing and urban areas are growing. When users are provided opportunities to participate in natural experiences, those participants have the possibility of developing positive environmental attitudes, and with the growth of positive attitudes, those users are more inclined to develop pro-environmental management practices (Kil, 2016).

Although numerous research articles focus on the generic benefits that participants receive through outdoor recreation, for millennials specifically, outdoor recreation has the possibility to increase well-being and expand interest in staying fit and healthy. Through previous research, it has been reported that roughly 70% of 12 year old children report vigorous activity, but the percentage drops to 35% by the time those children reach the age of 21 (HHS Office & Council on Sports, 2017; Omar-Fauzee, Yusof, & Zizzi, 2009; U.S. Department of Health and Human Services, 2000). For college-aged millennials, those who participate in recreational opportunities could have increased retention rates while also improving their health and wellness, and those who participate often benefit even more from participation (Forrester, 2014; Henchy, 2011, 2013). Millennials have noted that the stresses of life keep them awake at night and 19% of United States Millennials reported suffering from depression and anxiety (HealthStatus, 2018). Outdoor recreation has the possibility to provide an outlet for millennials to increase well-being and decrease the stresses of everyday life.

The physical and mental benefits are not specific towards any generation or age but are contingent on participation and usage. Park usage has seen a decline worldwide, where outdoor recreation in countries like Japan, Spain, and Canada have fallen by up to 25 percent (Pergams and Zaradic, 2006), and within the last 30 years, per capita visits to United States National Parks has declined (Pergams & Zaradic, 2006).

Motivation for Participation in Outdoor Recreation

Motivation is used to understand any factor that has the ability to drive someone toward action, and stems from the recognition of an incongruity in the participant's life and the actions and activities that correct the incongruity (Gage III & Thapa, 2012). The

concept of motivation has been discussed as three components: intrinsic motivation, extrinsic motivation, and amotivation (Deci & Ryan, 1985; Halbrook et al., 2012). Intrinsic motivation is considered participation without external contingencies; extrinsic motivation is considered participating to receive rewards or to avoid punishment; and amotivation occurs when the participant can no longer determine a motive for their participation (Halbrook et al., 2012; Kowal & Fortier, 1999; Turman, 2003). The idea that participation in outdoor recreation can provide benefits once barriers are overcome seems simple, but facilitating actual participation requires dedication and hard work from both the provider and the participant.

Over half of the United States' population uses outdoor recreation as a way to spend time with family and friends, and the idea of utilizing outdoor recreation to keep themselves and their loved ones healthy is a way to motivate possible participants toward activities related to outdoor recreation (Mowen et al., 2009). Individual and social determinants, such as ideals of community and individuality, have been shown to outweigh environmental characteristics during participation in outdoor recreation (Mowen et al., 2007). Social involvement and belief in community has been shown to relate positively to the amount of pride that is shown within the community. By providing an opportunity for social interaction through outdoor recreation, facilities have the possibility of increasing the visitation rates in areas where outdoor recreation and social connectedness occur (Baker & Palmer, 2004; Bedimo-Rung et al. 2005).

Current research trends have noted that millennials are motivated through concepts including achievement of a goal or development of a skill (Gage III & Thapa, 2012; White, 2008), and to enjoy nature or observe scenic beauty (Ramsay et al., 2017;

White, 2008). They are also motivated to escape and get away from the usual demands of life (Ramsay et al. 2017; White, 2008) and to be social or be with people who have common goals and viewpoints (Gage III & Thapa, 2012; Ramsay et al., 2017; Stankowski, Trauntvein, & Hall, 2017; White, 2008).

Studies have shown that younger millennials might be more interested in the social aspect of outdoor recreation and are less interested in passive recreational activities (Mowen et al. 2007; Skinner, Sarpong, & White, 2018; Whitting et al., 2015). These millennials are more likely to participate in outdoor recreation if they have someone to participate with them when they are recreating outdoors (Ooi, et al., 2017; Outdoor Foundation, 2017; Perry, Xiao, & Manning, 2015; Ramsay et al., 2017). Younger millennials are also interested in being able to express their individualism and have the ability for personal expression when they recreate. They also need to be engaged when they are participating and have the need to look toward new social and experiential activities (Ramsay et al., 2017). These millennials are willing to leave the safety and comfort of a job in search of a new challenge or a leisure pursuit, as long as their basic needs, such as independence, aptitude, and connectivity, are met (Calk & Patrick, 2017; Deci & Ryan, 1985; Josiam et al., 2009; Twenge, Campbell, Hoffman, & Lance, 2010). Younger millennials have also noted that along with getting exercise, they participate in outdoor recreation to be with family or friends (Mowen et al. 2007; Skinner et al., 2018), be close to nature (Cohen et al. 2007; Whiting et al., 2017), and experience excitement and adventure (Outdoor Foundation, 2017).

Constraints toward Participation

Leisure constraints, which are defined in this study as any barrier toward participation that requires successful negotiation to overcome (Jackson et al., 1993; Scott, 1991; White, 2008), are related to both intrapersonal and interpersonal aspects of participation. This relationship has aided in creating a model that explains the process that is used when describing participation versus non-participation (Crawford & Godbey, 1987; White, 2008).

The three subcategories of leisure constraints, which are intrapersonal, interpersonal, and structural, are focused on both internal and external stimuli (Crawford & Godbey, 1987; Trail, 2015; White, 2008). Firstly, intrapersonal constraints have the possibility of affecting the preferences of the participant themselves, and derive from the participant's beliefs, perceptions, and ideals. Secondly, interpersonal constraints occur after the participant has discovered their leisure preferences, and are derived from the social interactions that lead up to participation. Finally, structural constraints are the outside factors, including time, facilities, and opportunities, that occur when participants are provided with the option to decide if they want to participate or not (Crawford & Godbey, 1987; Larkin, Fink, & Trail, 2015; White, 2008). If participants can overcome these constraints, then participation has the possibility of occurring (Hudson, 2000; Nyaupane & Andereck, 2008). Essentially, participants need to overcome each constraint consecutively in order for participation to occur.

Previous studies have noted that constraints to outdoor recreation participation have been prevalent for multiple different demographic factors, and each factor has reasons for participating or not participating in outdoor recreation. Studies have focused

on racial or gender differences, as well as income, education, age, and location (Floyd et al., 2006; Ghimire et al., 2014; Green et al., 2012). It has been shown that for non-White participants, personal safety was a defining factor for participation (Ghimire et al., 2014; Johnson, Bowker, & Cordell, 2001; Scott, 2013), and rural dwellers noted fear of wildlife, threats to personal safety, time, and money (Allison, 1999; Ghimire et al., 2014; Johnson et al., 2001; Scott, 2013). Older participants listed personal health and disability as barriers (Floyd et al., 2006; Ghimire et al., 2014), and females noted personal safety, lack of people to accompany, and discomfort being in natural settings (Ghimire et al., 2014; Henderson, 1991).

Research shows that for millennials, leisure constraints for participation include lack of interest or awareness (Ramsay et al., 2017), distance (Barton, 2012; Ooi et al., 2017), lack of time, cost (Outdoor Foundation, 2017), and most significantly, lack of anyone to participate with (Outdoor Foundation, 2017; Ooi et al., 2017; Perry et al., 2014; Ramsay et al., 2017). When millennials are faced with leisure constraints that they might not understand how to overcome or negotiate through, they can become discouraged and refuse to participate (Jackson et al., 1993; White, 2008).

A fairly new leisure constraint that has become prevalent for this demographic is technology. It has been noted that the time spent outside is inversely related to time spent using personal electronic devices (Barton, 2012). To combat this constraint and to increase participation rates, organizations, such as geocaching companies and augmented reality (AR) companies, have started to specifically target those interested in technology to try to merge the natural and the digital world together (Skinner, Sarpong & White, 2018). This includes programs where the participants document their experiences within

nature using mobile technology to help them identify flora and fauna, while also collecting data for researchers (Barton, 2012; Chicago Botanic Garden, 2018; Networked Organisms, 2013).

Millennials, for the most part, have always had access to personal digital technology, and with the ubiquity of this technology, view it as an integral part of their lives (Calk & Patrick, 2017). These technological based activities, which include geocaching and augmented reality games, incorporate aspects of the natural world, such as walking, climbing, and searching through nature, with aspects of the digital world, such as utilizing smart phones to spur outdoor recreation usage (Battista & West, 2017; Skinner et al., 2018). Geocaching is defined as a real-world, outdoor treasure hunting game using GPS-enabled devices, where participants use coordinates to find hidden treasures (Groundspeak Inc., 2018; Recreational Equipment Inc., 2018). Augmented Reality is defined as adding graphics, sounds, and touch feedback into the natural world to create an enhanced user experience and to alter the participant's perception of reality (Abraham & Annunziata, 2017; RealityTechnologies, 2018). In locations where there is a lack of green spaces and opportunities for outdoor recreation, professionals have to approach outdoor recreation in new and unique ways. The marriage of these two uniquely different fields has the possibility of increasing the millennial and future generation's rate of participating, however this idea is still relatively new.

Methods

The purpose of this study was to understand millennial perceptions of outdoor recreation, current participation trends in outdoor recreation, and outdoor recreation constraints that may or may not be prevalent.

Sample and Data Collection

For this study, younger millennials are college-aged millennials between the ages of 18 and 27 that attend two upper mid-western universities in the United States; one a public, land-grant university with an enrolment of 12,100 undergraduates, and the other a private, Christian university with an enrolment of under 1,000 undergraduates. The survey, which was created through the on-line survey provider QuestionPro, took approximately 15-20 minutes to complete.

The purpose of this study was to understand younger millennial's outdoor recreation habits, and so, the data was collected through a convenience sample from those two universities. The researcher sought assistance with disseminating the survey from acquaintances, advisors, and associates. The researcher then provided the survey to those professionals who were willing to share the survey with undergraduate students. Data was collected during the Spring Semester of 2019. All responses were kept, even if respondents failed to complete the survey. Identical paper copies were available to those who wanted to take the survey by hand, but the paper copies were not offered unless requested.

Institutional Review Board (IRB) approval from both schools was obtained prior to any information or E-mails being dispersed to the participants of the study.

Instrumentation

The survey was developed based on research that is currently present. Questions that focus on participation rates, activities, reasons for and against participating, and what benefits are the most important to the respondents were asked to understand respondent's behaviors and habits. Utilizing previous research articles provided this questionnaire with

a more specific and narrow set of questions that more specifically targeted younger millennials.

There were three major components of the survey: (1) recreation participation experiences, (2) motivation for outdoor recreation, and (3) leisure constraints. These components focus on creating a baseline understanding of the participant's usage habits, understanding the participant's goals and passions, and discovering what barriers are prevalent in the participant's lives. Each section ends with an additional open-ended question, which provides the respondents with a platform to share any other perspectives related to the questions asked previously.

Recreation participation. This section of research aimed at understanding outdoor recreation experiences, how those experiences affect participation rates, and the strategies for promoting outdoor recreation participation. Asking questions related to participation rates also allowed the researcher to collect and evaluate data in order to see what could be done to increase retention rates in less than popular activities. Further, by asking questions regarding childhood passions for outdoor recreation activities, this section might help the researcher in understanding how participants view outdoor recreation nostalgically (Bai et al., 2013; Barton, 2012).

Previous outdoor recreation participation studies were reviewed in order to create four investigative questions focused on frequency of participation throughout the year, the companions (or lack of) that accompany the survey respondent during their activities, if participation occurs on the university's campus, and the location where most recreation occurs (Burns & Robinson, 2017). In addition, research participants were asked to report at what age they first participated in outdoor recreation. The next three questions utilized

a series of Likert scales that focused on the outdoor recreation experiences of the respondent. These Likert scales include the amount of comfort they experienced when participating (1=extremely uncomfortable to 5=extremely comfortable), and how much time the respondents spend outside during specific seasons (1=0 hours to 4=more than 5 hours). A Likert scale was also used to ask what generic outdoor recreation activities the respondents participated in during the last year (1=never to 3=often) (Metcalf, Metcalf, & Nickerson, 2013).

Motivation for outdoor recreation. As previously stated, motivations are defined as what drive participants toward their desired goals (Maslow, 1989), and as such are what guide the participants toward the activity or opportunity that will provide them with what they believe are the best benefits allotted to them by their motivational preferences.

Questions geared towards motivation were used to understand the motivators driving younger millennials towards participation in outdoor recreation (Calk & Patrick, 2017; Whiting et al., 2017; Gage III & Thapa, 2012). This section utilized a 5-point Likert scale (1=Entirely Disagree to 5=Entirely Agree) to ask respondents the 13 reasons why they participate. The Likert scale was created based on intrinsic and extrinsic motivational themes split into four categories: six responses for achieving a goal, three responses for enjoyment of nature, two responses for escaping demands of life, and two responses for socialization with others (White, 2008). These reasons might assist in identifying and categorizing motivational themes already understood by researchers, but also help in identifying if the younger millennial demographics' reasons for participation

draw a parallel with what previous research has shown. An open-ended question was used at the end of the section to gather additional motivational reasons for participating.

Leisure constraints. Leisure constraints are factors that prevent or restrict a person from participating in any activity they might be interested in experiencing. This study proposes the idea that millennials may possibly face multiple leisure constraints when deciding to participate in recreation; however, those who understand how to overcome those leisure constraints, and have the tools, knowledge, skills, and abilities to overcome the constraints, will be more inclined to participate (White, 2008).

Furthermore, this section was designed to ask the respondents about the barriers that prevent them from participating more fully in outdoor recreation which are prevalent in their lives (Outdoor Foundation, 2017; Ooi et al., 2017; Perry et al., 2014; Ramsay et al., 2017). This section used a 5-point Likert scale (1=Entirely Disagree to 5=Entirely Agree) to list 19 common barriers, broken down into seven intrapersonal, three interpersonal, and nine structural groupings, to help identify if those reasons listed agree to current trends. The respondents were given the opportunity to select between 4 options (0=Not Applicable, 1= No, 2=Maybe, 3=Yes) to ask if the respondents would be more willing to participate in outdoor recreation if agencies offered eight specific options, ranging from programs catered toward college students to agencies providing transportation to and from the recreation areas. To see how to engage the respondents in outdoor recreation and what other factors prevent them from participating, two open-ended questions were utilized to gather their preferences.

Research Analysis

Descriptive analysis was used to identify respondent's demographic data, participation habits, and behaviors related to outdoor recreation. One-way analysis of variance (ANOVA) was used to examine both the relationship between comfort levels and respondent's motivations and constraints, and the relationship between motivators and constraints and the companions that accompanied the respondents. The dependent variable in ANOVA was the motivations and constraints, and the independent variables were comfort levels and companionship. The Pearson correlation coefficient was used to examine the relationship between motivators and constraints. The Spearman correlation coefficient was used to measure the relationship between current comfort levels and the length of respondent recreation. Statistical significance was accepted at an alpha level of $p < .05$.

Previous studies utilized Cronbach's α to test reliability for responses related to leisure identities (between 0.65 to 0.77) and motivators (between 0.47 and 0.88). They also used baseline comparison measures (CFI), goodness of fit (GFI), and parsimony adjusted goodness of fit (AGFI) to test reliability for responses related to leisure constraints (CFI at 0.87; GFI at 0.87; AGFI at 0.84) (Liu, Bradley, and Burk, 2016; Whiting et al., 2017; White, 2008). For this study, only Cronbach's α was used to check reliability, to simplify and more accurately report internal consistency.

Open-ended questions were used to explain demographic data (academic focus; current age), as well as outdoor recreation behaviors (age at which recreation started; the best ways to be engaged in outdoor recreation participation). Respondents were also provided options to clarify or explain answers they had given, including other factors

related to motivation and constraints, other activities they had participated in, and their normal location for outdoor recreation.

Results

Demographics

A total of 143 respondents participated in the survey with 126 respondents completing the survey (completion rate: 88%). The results show that females are slightly over half of respondents (54%) and males slightly under (45%). Almost three-fourths of the respondents (72%) are between the ages of 18 and 21; 80% of the respondents are from the Mid-West, with 56% from South Dakota; and 84% of the respondents identify themselves as White. Slightly over half (60%) of respondents perceived themselves as part of the millennial generation (Table 1).

Almost all respondents were full-time students (98%); 56% of the respondents were employed part-time and 28.7% were unemployed, a number of respondents noted that they were employed seasonally or were employed as an aspect of their education. Academic disciplines had a wide range of fields and majors, including Sport, Recreation, and Parks Management, Wildlife/Natural Resource Management, Nonprofit Administration/Christian Leadership, Business, and Education, with multiple students reporting in each field.

Table 1. Research Participant's Demographics

	Frequency	Percent
Gender		
Male	57	45.2%
Female	68	54.0%
Prefer not to specify	1	.7%
Age		
18	15	10.5%
19	29	20.3%
20	33	23.1%

21	26	18.2%
22	8	5.6%
23	7	4.9%
24	5	3.5%
25	2	1.4%
27	1	.7%
Prefer not to specify	17	11.9%
Student Status		
Full-Time Student	122	98.4%
Part-Time Student	2	1.6%
Employment Status		
Full-Time On Campus	2	1.4%
Part-Time On Campus	29	20.3%
Full-Time Off Campus	8	5.6%
Part-Time Off Campus	51	35.7%
Unemployed	41	28.7%
Perception of Millennial Status		
Yes	75	59.5%
No	51	40.5%
Where is Home?		
South Dakota	80	55.9%
Other (Midwestern)	34	23.8%
Other (Non-Midwestern)	10	7.0%
Prefer not to specify	19	13.3%
Race		
White	120	83.9%
Black/African American	3	2.1%
Hispanic/Latino/Etc.	5	3.5%
Native America	1	.7%
Asian	1	.7%
Pacific Islander	1	.7%
Two or More Races	1	.7%
Prefer not to specify	11	7.7%

Recreation Participation

Three-fourths (76%) of respondents participated in outdoor recreation once or twice a week to several times a month. Eighty five percent of respondents participated with friends and family, versus the 10.5% who participated by themselves. Others reported that they participated in outdoor recreation through athletics and extracurricular activities (Table 2).

Approximately 46% of respondents utilized local or municipal parks and trails, while 34% utilized state parks, recreation areas, and public land or hunting areas. Roughly 35% of respondents stated that they participated in outdoor recreation on a college campus and 23% said they had not, but that they were interested in participating in the future. Respondents also listed areas involved in sports, extracurricular activities, and bodies of water for where they participate when asked to explain further.

Respondents were asked what level of comfort they felt while participating in outdoor recreation and 67% of respondents noted that they were somewhat or extremely comfortable being in outdoor recreation settings and 25% noted that they were somewhat or extremely uncomfortable. Respondents were asked at what age they started recreating and approximately 89% of respondents chose an age between birth and 10 years old, with 5 years old being the largest choice at 30% of respondents.

With respect to seasons and amount of time spent recreating during those seasons in general, Summer had the largest amount of time spent recreating outdoors (88%); Winter had the least (78%); Spring had more respondents spending time outdoors than Fall (49% versus 40%).

Table 2. Respondent's Outdoor Recreation Participation Behaviors

	Frequency	Percent
How Often Participation Occurred		
About once or twice a week	70	49%
Several times a month	39	27.3%
Several times a year	24	16.8%
I have participated in the past	7	4.9%
I never participated	3	2.1%
Who Accompanied		
By Myself	15	10.5%
Friends	97	67.8%
Family	25	17.5%
Other	6	4.2%
On-Campus usage of outdoor recreation		

Yes	49	34.3%
No	61	42.7%
I have not, but I am interested	33	23.1%
Location		
Local/municipal	65	45.5%
State	49	34.3%
Federal-managed	9	6.3%
Privately owned	16	11.2%
Other	4	2.8%
Comfort Levels While Participating		
Extremely uncomfortable	27	18.9%
Somewhat uncomfortable	8	5.6%
Neutral	13	9.1%
Somewhat comfortable	31	21.7%
Extremely comfortable	64	44.8%
Season-Spring		
0 Hours per week	0	0%
1 or 2 Hours per week	16	11.2%
3 to 5 Hours per week	57	39.9%
5 or More Hours per week	70	49%
Season-Summer		
0 Hours per week	0	0%
1 or 2 Hours per week	2	1.4%
3 to 5 Hours per week	57	10.5%
5 or More Hours per week	70	49%
Season-Fall		
0 Hours per week	1	.7%
1 or 2 Hours per week	28	19.6%
3 to 5 Hours per week	57	39.9%
5 or More Hours per week	57	39.9%
Season-Winter		
0 Hours per week	29	20.3%
1 or 2 Hours per week	83	58%
3 to 5 Hours per week	18	12.6%
5 or More Hours per week	13	9.1%

The activities participated in most often were walking/jogging/running (67%), recreating with pets (50%), and lawn games (40%). The activities participated in the least were skateboarding (92%), Geocaching (90%), and snowshoeing (89%). Table 3 provides a complete breakdown of each activity and the frequency and percentage rates at which that activity was participated.

Table 3. Frequency of Outdoor Recreation Activities

Activity	Frequency	Percent
Walking/Jogging/Running		
Never	2	1.4%
Seldom	45	31.9%
Often	94	66.7%
Backpacking		
Never	87	61.7%
Seldom	47	33.3%
Often	7	5%
Horseback Riding		
Never	117	83%
Seldom	17	12.1%
Often	7	5%
Biking		
Never	26	18.4%
Seldom	72	51.1%
Often	43	30.5%
Off-Road Vehicles		
Never	77	54.6%
Seldom	72	27.7%
Often	43	17.7%
Swimming		
Never	15	10.6%
Seldom	72	51.1%
Often	54	38.3%
Boating		
Never	40	28.4%
Seldom	61	43.3%
Often	40	28.4%
Canoeing/Kayaking		
Never	52	36.9%
Seldom	54	38.3%
Often	35	24.8%
Paddle Boarding		
Never	86	61%
Seldom	42	29.8%
Often	13	9.2%
Skiing		
Never	108	76.6%
Seldom	25	17.7%
Often	8	5.7%
Sledding		
Never	70	49.6%
Seldom	60	42.6%

Often	11	7.8%
Snowshoeing		
Never	126	89.4%
Seldom	14	9.9%
Often	1	.7%
Ice Skating		
Never	82	58.2%
Seldom	57	40.4%
Often	2	1.4%
Fishing		
Never	54	38.3%
Seldom	45	31.9%
Often	42	29.8%
Hunting		
Never	82	58.2%
Seldom	35	24.8%
Often	24	17%
Trapping		
Never	119	84.4%
Seldom	20	14.2%
Often	2	1.4%
Birdwatching/Wild game viewing		
Never	114	80.9%
Seldom	23	14.2%
Often	4	1.4%
Golf		
Never	74	52.5%
Seldom	40	28.4%
Often	27	19.1%
Hockey		
Never	125	88.7%
Seldom	16	11.3%
Often	0	0%
Skateboarding		
Never	130	92.2%
Seldom	7	5%
Often	4	2.8%
Rock Climbing		
Never	110	78%
Seldom	30	21.3%
Often	1	.7%
Camping		
Never	38	27%
Seldom	62	44%
Often	41	29.1%
Picnicking		

Never	61	43.3%
Seldom	57	40.4%
Often	23	16.3%
Visiting Historic Sites/Etc.		
Never	34	24.1%
Seldom	81	57.4%
Often	26	18.4%
Participating in Educational Programs		
Never	96	68.1%
Seldom	39	27.7%
Often	6	4.3%
Photography		
Never	76	53.9%
Seldom	46	32.6%
Often	19	13.5%
Geocaching		
Never	127	90.1%
Seldom	11	7.8%
Often	3	2.1%
Lawn Games		
Never	29	20.6%
Seldom	56	39.7%
Often	56	39.7%
Recreating with pets		
Never	26	18.4%
Seldom	45	31.9%
Often	70	49.6%

When provided an opportunity at the end of this section to add activities that they have participated in but that were not listed, a majority of the respondents noted hiking specifically, leisure activities (being at the beach, hammocking, campfires, studying, and watching sports), and previously unlisted sports (regular or sand volleyball, baseball, softball, soccer, basketball, rowing, and tennis).

Relationship between Motivation and Constraints

Of the four dimensions of motivation, *escaping the demands of life* ($M = 4.08$; $SD = .65$) had the highest mean, followed by *achieving a goal* ($M = 3.95$; $SD = .66$), *socialization with others* ($M = 3.74$; $SD = .72$), and *enjoying nature* ($M = 3.4$; $SD = .85$).

The Cronbach's α for motivation as a whole was 0.82, and for each sub-dimension was: *achieving a goal* at 0.80 with six items, *enjoying nature* at 0.80 with three items, *escaping the demands of life* at 0.45 with two items, and *socializing with others* at 0.55 with two items. The sub-dimension alpha values with less than three items were not as high as those sub-dimensions with more than three items. Other motivation factors the respondents noted include to enjoy the weather, have fun, witness astrological events, leave the house, and because they love South Dakota's natural areas.

Of the three dimensions of constraints, the highest mean was *interpersonal* ($M = 2.96$; $SD = .91$), followed by *structural* ($M = 2.94$; $SD = .73$), and *intrapersonal* ($M = 2.67$; $SD = .77$). The Cronbach's α for constraints as a whole was 0.90, and for each sub-dimension was: *intrapersonal* at 0.78 with seven items, *interpersonal* at 0.68 with three items, and *structural* at 0.82 with nine items. The sub-dimension alpha values with less than five items were not as high as those sub-dimensions with more than five items.

Other barriers include specific facilities that do not exist, family issues, insects, the effort involved, and lack of accessibility that prevents those with disabilities from participating.

Table 4 provides a complete breakdown of the mean scores and standard deviation of each dimension and the items within those dimensions.

Table 4. Motivations and Constraints

	Mean	Standard Deviation
Motivations		
Achieving a Goal	3.95	0.66
To enjoy favorite activity	4.32	0.82
To challenge self	3.54	1.03
To keep physically fit	4.08	0.99
To gain sense of accomplishment	3.86	0.96
To experience excitement	4.18	0.77
To gain self-confidence	3.68	0.98
Enjoying Nature	3.40	0.85
To be close to nature	3.54	0.96

	To learn about the environment	2.99	1.07
	To observe wildlife	3.67	0.99
	Escaping the Demands of Life	4.10	0.65
	To relax	4.43	0.70
	To experience solitude	3.73	0.92
	Socialization with Others	3.74	0.72
	To meet people	3.08	0.94
	To be with family/friends	4.40	0.78
Constraints			
	Intrapersonal	2.67	0.77
	Lack of interest	2.69	1.15
	Extracurricular Activities	3.29	1.14
	Fear of injury	2.31	1.13
	Don't feel welcome	2.21	1.12
	Lack of information	2.61	1.20
	Lack skills	2.46	1.21
	Work too much to participate	3.13	1.23
	Interpersonal	2.96	0.91
	Don't have anyone to go with	3.04	1.23
	Friends do other things	3.20	1.07
	Don't live near friends/family	2.62	1.20
	Structural	2.94	0.73
	Lack of time	3.81	1.06
	Lack of transportation	2.22	1.14
	Don't have equipment	2.84	1.25
	Schoolwork	3.62	1.11
	Admission fees are too high	2.54	1.08
	Equipment fees are too high	2.66	1.19
	Areas are too crowded	2.57	1.10
	Weather	3.39	1.13
	Preferable facilities are not near	2.84	1.23

Research participants indicated the best way to engage them as: incentives (money; free food; free admission), to utilize social media for more targeted advertisements, to inform the public, and to make recreation a more social event (hosting tournaments; classes; community events). The respondents also noted that providing a variety of activities and facilities to challenge and test them, and most significantly, to provide a way for the respondents to recreate with friends and family were the best way to engage them in outdoor recreation. Respondents noted that companions (friends;

family) make recreating enjoyable, regardless of the activities provided or the factors that affect the experience (weather; time).

Respondents noted out of the eight specific ideas that future outdoor recreation professionals could use to increase participation, the most effective idea was programs catered toward interests as a college student (64%), the least effective ideas was programs focused on culture or history (39%). Respondents also noted that programs focused on culture or history (17%) was the most inapplicable idea for them. Table 5 lists what the respondents believe were the most and least important ideas for them.

Table 5. Strategies to Promote Outdoor Recreation Participation

	Frequency	Percent
Programs Catered toward Interests		
No	5	4%
Maybe	36	28.6%
Yes	80	63.5%
Not Applicable	5	4%
More Information from Social Media		
No	13	10.3%
Maybe	45	35.7%
Yes	59	46.8%
Not Applicable	9	7.1%
A Safer Environment		
No	17	13.5%
Maybe	59	46.8%
Yes	33	26.2%
Not Applicable	17	13.5%
Recreation Locations Closer		
No	9	7.1%
Maybe	37	29.4%
Yes	71	56.3%
Not Applicable	9	7.1%
Programs focused on Culture/History		
No	49	38.9%
Maybe	39	31%
Yes	17	13.5%
Not Applicable	21	16.7%
Education on Sustainability/Conservation		
No	42	33.3%
Maybe	46	36.5%

Yes	24	19%
Not Applicable	14	11.1%
Programs that Challenge or Improve Skills		
No	14	11.1%
Maybe	39	31%
Yes	65	51.6%
Not Applicable	8	6.3%
Transportation To and From Areas		
No	32	25.4%
Maybe	39	31%
Yes	40	31.7%
Not Applicable	15	11.9%

Significant Relationships Related to Motivation and Constraint Factors

The Pearson correlation coefficient was used to show statistically significant relationships between motivations and constraints. The results of the Pearson correlation (Table 6) showed that the sub-dimensions of constraints related to intra- and interpersonal barriers are most often negatively correlated to sub-dimensions of motivations related to those same qualities. The table also shows that, as expected, motivational sub-dimensions are significantly correlated to other motivational sub-dimensions, and constraint sub-dimensions are significantly correlated to other constraint sub-dimensions. The most significant positive correlation between motivation and constraint factors was Motivation's Enjoyment of Nature with Structural Constraints ($r = .21, p < .01$).

Table 6. Correlation Coefficients of Motivations and Constraints

Variables	1	2	3	4	5	6	7
1. M-Achievement of a Goal	--	.28**	.56**	.43**	-.09	-.07	-.01
2. M-Enjoyment of Nature		--	.40**	.08	.03	.15	.21*
3. M-Escaping the Demands of Life			--	.15	-.06	.11	.10
4. M-Socialize with Others				--	-.17	-.24**	-.10
5. C-Intrapersonal					--	.67**	.74**
6. C-Interpersonal						--	.70**
7. C-Structural							--

* $p < .05$.

** $p < .01$.

The Spearman correlation coefficient was used to show the relationship between comfort levels and amount of years between the respondent's first time recreating and the respondent's current age. Based on the results of the study, there is a positive correlation between those respondents that have been recreating longer and their feelings of comfort ($\rho = .21, p < .05$).

The results of ANOVA (Table 7) show there was a significant effect on comfort levels with motivations at the $p < .05$ level, specifically *achievement of a goal*, for the conditions [$F(4, 131) = 3.19, p = .016$]. There was no significant effect on comfort levels for any constraint sub-dimensions. Post hoc comparison using the Tukey HSD test indicated that the mean score for extremely comfortable within *escaping the demands of life* ($M = 4.13; SD = .64$) and *achieving a goal* ($M = 4.08; SD = .63$) was significantly higher than extremely comfortable the other five sub-dimensions ($M = 2.58$ to $3.88; SD = .76$ to $.98$). Post hoc comparison using the Tukey HSD test indicated that the mean score for extremely uncomfortable within *escaping the demands of life* ($M = 4.21; SD = .64$) and *achieving a goal* ($M = 4.02; SD = .75$) was significantly higher than extremely uncomfortable the other five sub-dimensions ($M = 2.42$ to $3.71; SD = .64$ to $.93$).

Among motivations, research participants who recreated with or without others show a statistical difference, at the $p < .05$ level, on the sub-dimension *socialization with others* [$F(2, 128) = 9.70, p < .01$] (Table 7). There was no significant effect on companionship with any of the constraint sub-dimensions. Post hoc comparison using the Tukey HSD test indicated that the mean score for *socializing with others*, both friends ($M = 3.83$) and family ($M = 3.83$) was higher than recreating by themselves ($M = 2.96$).

There was no significant difference between recreating with friends or family, but respondents noted higher scores in those items versus recreating by themselves.

Table 7. Comparison of Comfort Level and Companionship in relation to Motivation and Constraints

	Comfort Levels ¹	Companions ²
M-Achievement of a Goal	$F(4, 131) = 3.19, p = .02^*$	$F(2, 128) = 2.84, p = .06$
M-Enjoyment of Nature	$F(4, 131) = 0.96, p = .43$	$F(2, 128) = 1.07, p = .35$
M-Escaping the Demands of Life	$F(4, 131) = 1.41, p = .24$	$F(2, 128) = 1.41, p = .25$
M-Socialize with Others	$F(4, 131) = 1.19, p = .32$	$F(2, 128) = 9.70, p < .01^{**}$
C-Intrapersonal	$F(4, 129) = 2.07, p = .09$	$F(2, 126) = 0.25, p = .78$
C-Interpersonal	$F(4, 129) = 0.56, p = .69$	$F(2, 126) = 1.80, p = .17$
C-Structural	$F(4, 129) = 1.27, p = .28$	$F(2, 126) = 0.04, p = .96$

* $p < .05$, ** $p < .01$.

1. How comfortable or uncomfortable are you when outdoors? Extremely uncomfortable, slightly uncomfortable, neutral, slightly comfortable, extremely comfortable

2. Which of the following best describes how you participated in outdoor recreation?
Myself, with friends, with family

Discussion

The purpose of this study was to understand millennial perceptions of outdoor recreation, current participation trends in outdoor recreation, and outdoor recreation constraints. To more fully understand the purpose of the study and the sample that was surveyed, the researcher first sought to understand if the respondents believe they are a part of the millennial generation. The term “younger millennial” was used to specifically identify the respondents as those between the ages of 19 and 27, which encompasses those respondents that are involved in colleges and universities (Dane, 2017; Hosie, 2017). Forty percent of the respondents do not perceive themselves as millennials, which could be attributed to the vague nature of the term and the lack of a singular definition. Current research has not clearly defined the range for millennials, and have been defined as one born between 1981 and 1996 (Dimock, 2019), or 1982 to 2004 (Howe & Strauss, 2009). The 40% of respondents that stated they did not identify as a millennial could

possibly be unsure of the range and do not feel as if they belong in the millennial generation.

The results of the study show that the respondents prefer to participate with others, including family and friends, which agrees with other studies (Mowen et al. 2007; Outdoor Foundation, 2017; Parks, 2017; Perry et al., 2014; Ramsay et al., 2017; Skinner et al., 2018). The respondents are looking toward recreating with others to achieve a goal (Gage III & Thapa, 2012; White, 2008), such as to keep physically fit and experience adventure, or to socialize with others (Gage III & Thapa, 2012; Ramsay et al., 2017; Stankowski et al., 2017; White, 2008), such as meeting new people and being with family and friends.

Even though the results show that respondents might be highly motivated toward recreating, they might also be uncomfortable stepping outside of their comfort zones. They might not know how to recreate, are unaware, do not know what they can or cannot do when recreating outdoors, or are unsure of the facilities that are available to them. The respondents noted that interpersonal constraints were the most significant to them, as they were less likely to go if they went alone; lack of time and schoolwork were also noted as significant barriers to recreating (Jackson et al., 1993; White, 2008). With respect to facilities, approximately 65% of the respondents did not utilize the outdoor recreation opportunities that are provided to them on their college campus, even if recreating on a college campus provides benefits to the student (Forrester et al., 2006). Even if respondents desire to be within nature, they still need to recognize and understand the structural constraints (being unaware of the facilities available to them) that could prevent them from recreating.

This study is also supported by previous outdoor recreation research, which shows that participation has numerous benefits and those who participate are shown to receive benefits as a secondary effect to the emotional and motivational states that are felt, including nostalgia, excitement and adventure, and individualism (Bai et al., 2013; Barton, 2012; Ellis & Rossman, 2008; Outdoor Foundation, 2017).

As expected, the results from the Spearman correlation show that the respondents that have been involved in outdoor recreation longer have greater feelings of comfort than those that have not been involved as long in outdoor recreation. Approximately 90% of the respondents started recreating before the age of 10, and 72% of the respondents were between 18 and 21, which implies that most of respondents started outdoor recreation a decade prior to the survey (Bai et al., 2013; Barton, 2012).

As expected, seasons that were more hospitable and had warmer temperatures had higher rates of participation, and when weather was more agreeable, respondents desired to recreate outside more often. The activities most commonly participated in were those that more often occur during warmer weather seasons (walking, spending time with pets, and lawn games), are casual, and are associated with social/leisure aspects of recreation (Mowen et al., 2007; Skinner et al., 2018).

Even though the use of technology has become ubiquitous and recreation professionals have started merging technology and recreation together, 90% of respondents had never used technology to go geocaching. The respondents may not be aware of this merger, may have never been introduced to this new activity, or are not interested in participating in this activity (Battista & West, 2017).

Respondents were also more willing to participate in outdoor recreation if they are introduced to programs that are catered toward their interests, are closer to outdoor recreation facilities, and are promoted on social media (Cohen et al., 2007; Mowen et al., 2007; Whitting et al., 2017). They were less interested in programs that incorporated culture and history or promoted education on conservation (Skinner et al., 2018). Recreation professionals could incorporate social media into their program development to discover what interests are prevalent in their target demographic and what programs to avoid.

Results from the Pearson correlation show that, as expected, sub-dimensions of the same type (motivation or constraint) are significantly correlated with sub-dimensions of the same type. The results also show that the most significant correlations between the two types of sub-dimensions are *enjoyment of nature* positively correlated with *structural constraints*, and *socializing with others* negatively correlated with *interpersonal constraints*. Respondents might enjoy being in nature but are unable to participate, either because they do not know where to go, what to do, or lack the equipment to recreate how they want. The respondents who understand and overcome interpersonal constraints might then be more willing to recreate because they are motivated to meet new people or spend time with family and friends (Ramsay et al., 2017; Stankowski et al., 2017; White, 2008).

The results of ANOVA suggest that the respondents that have higher levels of comfort are focused on achieving a goal. ANOVA also suggests that the respondents that have lower levels of comfort are highly motivated toward recreation but are not acting on that motivation. The results also suggest that the respondents are exceptionally motivated

toward recreating when they have someone else to go with (Gage III & Thapa, 2012; Mowen et al., 2007; Ramsay et al., 2017; Skinner et al., 2018; Stankowski et al., 2017; White, 2008).

Practical Implications

The study's results indicate that to possibly increase outdoor recreation participation in the younger millennial generation, professionals should provide recreation opportunities that incorporate participation with others, cater to millennial interests, and challenge the participant. Outdoor recreation professionals could host group events, such as group hikes or sports tournaments, which incorporate teamwork, comradery, and the use of skills to boost participation. They could also create programs that encourage involvement across generations, to encourage families to participate in outdoor recreation together.

For millennial college students, participating in outdoor recreation during college has been shown to be linked to continual participation in the future (Forrester et al., 2006). Unique and effective outdoor campus recreation programs could become the influencing factor a student uses when deciding what school to attend (Andre et al., 2017). Now that outdoor recreation programs are starting to become more common on college campuses, those recreation professionals should create and promote programs linked to their student's interests, to bring students to the program and so that students can enjoy outdoor recreation while away from their homes.

Limitations and Future Research Recommendations

Although this study revealed meaningful findings to support outdoor recreation, it is important to recognize limitations. The limitations for this study include, but are not

limited to, the sample, the data collection process, and the factors that were observed. This study was completed at both a public, land-grant university and a private, Christian university, both of which are located in the same state in the Midwestern United States. The universities utilized in this study are not as diverse as the mean or average of U.S. colleges. The overall student population at the public university is 87% White, student-athletes making up 4% of the student body, and with approximately 64% of undergraduates coming from the state in which the school resides. The overall student population at the private university is 81% White, student-athletes making up 53% of the student body, and with 74% of undergraduates coming from the state in which the school resides. In future, the researcher could either narrow the sample to one specific campus and survey a stratified sample or expand the survey to encompass each university within the state. This would allow representation from each school, to see if there are significant difference depending on size and location of the school within the state.

The survey was first disseminated to undergraduates to a stratified sample targeting an equal number of students (300) in each academic class (Freshmen to Senior). Due to a lack of responses during the first round of data collection, the researcher then gathered data through a convenience sample, where the survey was sent to as many colleagues that were willing to assist the researcher in disseminating the survey. Researchers in the future could either survey students in person or be more active on campus by utilizing high volume classes or classes designated for each academic class (going to senior specific classes or freshman level classes). As for the survey instrument, some of Cronbach α values were lower than the normally acceptable value of 0.60, which could be attributed to the low number of questions within each sub-dimension. In future,

the scale could be improved with an increased number of questions within each sub-dimension.

Due to the questionnaire being self-reported, responses have a high degree of uncertainty. In addition, there were respondents who failed to respond to each question, which caused the amount of total valid responses to be lower. In future, the researcher could promote the survey in high-traffic areas in order to increase both awareness of the survey and respondent numbers. The researcher could also specifically target students that represent a section of the university, such as major-specific stratified sampling based on the size of the academic field (comparing students in recreation fields to those who are not).

The researcher focused on factors related to motivations and constraints in relation to age, and as such, did not look at factors related to gender, employment status, ethnicity, or home identity. Utilizing research analyses based on differing demographic factors (for example: seeing if gender has a significant effect on motivation and constraints) would be beneficial for future studies to more fully understand the population surveyed. The project also did not look at differences between respondents who believe they are millennials and those that do not. Future surveys could compare those factors to see if perception of millennial status has an effect on recreation behaviors and habits. Future surveys could also focus on technology and its relationship to outdoor recreation, to observe if combining those two fields would have a significant influence on younger millennial participation habits.

Conclusion

This study was used to identify outdoor recreation habits and behaviors in the younger millennial generation, and as such, future researchers could expand on this research with this specific demographic, look at other generations or demographics, or see if the findings from this study could be implemented in their study. Recreation professionals could use the findings from this research to help specifically target this section of the millennial generation and possibly increase participation within this cohort. Understanding what motivations or constraints are prevalent in this generation could assist in identifying the best practices that recreation professionals can use. By identifying the best practices to increase participation, those professionals can, with any luck, entice new participants toward recreation. This could be achieved by offering programs that cater toward this generation's interest, promote group recreation, and help those participants develop and grow their skills.

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APPENDIX

Appendix A. IRB Approval Letter

**SOUTH DAKOTA STATE UNIVERSITY****Institutional Review Board**

Date: January 10, 2019

Investigator: Jason Mehlhaf

Project Title: Younger Millennials and Outdoor Recreation: Understanding outdoor recreational pursuits of Millennial College Students

Determination: Exempt, Category 2

Approval #: IRB-1901002-EXM

The project referenced above is exempt from further review by the Institutional Review Board of South Dakota State University. Exemption is claimed on number(s) 46.101 (b) (2) of the criteria for exemption outlined in 45 CFR 46, section 101.

Note: If the project is changed, it should be re-submitted to the IRB for a determination of whether it still satisfies exemption criteria.

A handwritten signature in black ink that reads "Dianne Nagy".

Dianne Nagy
Research Integrity and Compliance Officer

Appendix B. Survey Instrument

Hello:

You are invited to participate in a survey entitled: Younger Millennials and Outdoor Recreation. It will take approximately **15 minutes** to complete the questionnaire. This survey will assist in the researcher's pursuit of a Master's degree in Sport and Recreation Administration. Your participation in this study is completely voluntary, and continuing indicates that **you are at least 18 years old**.

The purpose of this survey is to discover what you believe about outdoor recreation, how you are currently participating, and the barriers that might present themselves. It is very important for the researcher to learn your opinions.

There is no penalty for refusal to participate, and if you feel uncomfortable answering any questions, you are free to withdraw your consent and participation in this project at any time.

There are no foreseeable risks associated with this project, and your response will remain anonymous. We value your privacy, and therefore, the information that you provide will be used solely to understand your specific generation's beliefs surrounding outdoor recreation.

Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. Nevertheless, your confidentiality is only as secure as the equipment that you are reporting on; no guarantees can be made regarding the interception of data sent via the Internet.

If you have questions at any time about the survey or the procedures, you may contact Jason Mehlhaf by email: jason.mehlhaf@jacks.sdstate.edu, or Graduate Advisor Dr. Hung-Ling (Stella) Liu by email: stella.liu@sdstate.edu, or at (605) 688-6163.

If you have questions regarding your rights as a participant, you can contact the South Dakota State University Research Compliance Coordinator at (605) 688-6975 or SDSU.IRB@sdstate.edu.

At the end of the survey, there is a question designated for email if you, as a responder, want to be placed in a drawing for a gift card. A raffle for twelve \$20 Amazon gift cards will be drawn from the pool of email addresses provided

Thank you very much for your time and support.

Section I: Outdoor Recreation Participation

The benefits of outdoor recreation are not exclusive towards any generation or age, but are actually related to participation and usage. Section I focuses on your participation experiences, which will help us understand what participation means to you.

1. During the past year, how often did you participate in outdoor recreation activities? Please select the statement that best describes your frequency.

About once or twice a week

Several times a month

Several times a year

I haven't participate this year, but I have participated in the past

I never participated in outdoor recreation

2. Which of the following best describes how you participated in outdoor recreation?

By myself

With friends

With family

Other (Please specify) _____

3. Do you participate in outdoor recreation on campus?

Yes

No

I haven't, but I am interested

4. Where do you normally participate in outdoor recreation?

___ Local/municipal parks, trails, or playgrounds

___ State parks, recreation areas, public land/hunting areas

___ Federal-managed outdoor areas (national parks, etc.)

___ Privately owned recreation areas (resorts, private golf courses, etc.)

___ Other (Please specify) _____

5. At what age did you start participating in outdoor recreation?

6. How comfortable or uncomfortable are you when outdoors?

Extremely Uncomfortable	Somewhat Uncomfortable	Neutral	Somewhat Comfortable	Extremely Comfortable
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6. On average, how many hours **per week** do you spend outside during each season?

	0 Hours	Between 1 and 2 Hours	Between 3 and 5	More than 5
Spring				
Summer				
Fall				
Winter				

7. Within the last year, what generic outdoor recreation activities did you participate in?

Activity	Never	Seldom	Often
Walking/Jogging/Running			
Backpacking			
Horseback Riding			
Biking			
Off-Road Vehicles			
Swimming			
Boating			
Canoeing/Kayaking			
Paddle Boarding			
Skiing			
Sledding			
Snowshoeing			
Ice Skating			
Fishing			
Hunting (Firearm or Bow)			
Trapping			
Birdwatching or Wild Game Viewing			
Golf			
Hockey			
Skateboarding			
Rock Climbing			
Camping			
Picnicing			
Visiting Historic Sites, Nature Centers, Festivals, Playground			
Participating in Educational Programs			
Photography			
Geocaching			
Lawn Games			
Recreating with Pets			
Other (Please specify)			

Section II: Motivation for Participation

Motivations drive participants toward their desired goals and help participants find their passions. This section is used to understand what you enjoy about outdoor recreation, and what does or doesn't motivate you.

8. Why do you participate in outdoor recreation? How strongly do you agree or disagree with each of the following reasons?

	Entirely Disagree	Disagree	Neutral	Agree	Entirely Agree
To enjoy my favorite activity					
For relaxation/get away from the demands of life					
To be close to and feel at one with nature					
To learn about the environment					
To observe wildlife and scenic beauty					
To meet new people					
To be with family and friends					
To challenge myself					
To keep physically fit					
Gain a sense of accomplishment					
Experience excitement or adventure					
Gain a sense of self-confidence					
Experience solitude					

9. What are any other factors, not listed, that motivate you to participate in outdoor recreation? Please be as specific as necessary.

Section III: Constraints to Participation

Constraints are factors that prevent a person from participating in any activity they might be interested in experiencing. This section is used to understand what barriers prevent you from participating in outdoor recreation.

10. What are your perceived barriers to participating? How strongly do you agree or disagree with each of the following reasons?

	Entirely Disagree	Disagree	Neutral	Agree	Entirely Agree
Lack of interest					
I'm too focused on extracurricular activities					
Fear of injury (from animals or others)					
Lack of Time					
Don't feel welcome					
Lack of information					
Don't have anyone to go with					
Lack of transportation					
Don't have equipment					
Don't have the skills or ability					
Friends prefer to do other things					

School work keeps me from participating					
People I know live or work too far away					
Admission fees are too high					
Equipment fees are too high					
Areas are too crowded					
I work too much to participate					
Weather					
Facilities I want don't exist near me					

11. What are any other factors, not listed, that you believe are barriers to participation in outdoor recreation? Please be as specific as necessary.

12. What is the best way to engage you to participate in outdoor recreation? Please be as specific as necessary.

Would you be more willing to participate in outdoor recreation if agencies offered...

Strategies:	No	Maybe	Yes	Don't Care
Programs catered toward my interests as a college student				
More information through social media				
A safer environment to recreate in				
Recreation locations closer to me				
Programs focused on culture or history				
Education on conservation and sustainability				
Programs that challenged me or improved my skills				
Transportation too and from the recreation areas				

Section V: Demographics

13. Are you...?

Male

Female

Prefer to not specify

Other

14. How old are you?

15. Do you consider yourself a Millennial?

Yes

No

16. What is your status as a student?

Full-Time Student

Part-Time Student

17. What is your Major(s)?

18. What is your employment status?

Full-Time Employed

On-Campus

Off-Campus

Part-Time Employed

On-Campus

Off-Campus

Unemployed

Other (Please specify)

19. Is South Dakota your home state?

Yes

No (Where do you consider home?)

20. What is your race?

White

Black/African American

Hispanic/Latino/Spanish Origin

American Indian/Native American/Alaskan Native

Asian

Pacific Islander

Two or more races

Other (Please specify)

Thank you for participating in this survey! If you are interested in being placed in a drawing for one of twelve \$20 Amazon gift cards, please provide your email address below.

Winners will be drawn 6 weeks after the survey is initially sent out, or between March 8th and March 15th, 2019. Email addresses will only be utilized for the drawing, and will be reviewed separately from any responses provided.
