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Appalachian and Pacific Crest Trail Hikers: A Comparison of Benefits and Motivations

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The Appalachian Trail (AT) and Pacific Crest Trail (PCT) are two scenic trails named in the National Trails System Act of 1968. Recently, trails and footpaths have been used to promote such benefits as healthy lifestyles, sense of community, and an increased quality of life. The purpose of this study was to compare the motivations and benefits from hikers of the AT and the PCT. Grounded in Driver's benefits model and means-end theory, and using an Internet questionnaire, 766 usable questionnaires were collected. Significant differences were found between AT and PCT users who: hike to prevent a worse health condition; seek motivational attributes (e.g. scenic beauty); pursue motivational consequences (e.g. physical activity); and perceive motivational values (e.g. increasing self-esteem).

The Appalachian Trail (AT) and the Pacific Crest Trail (PCT) are two of eight designated National Scenic Trails. The AT and the PCT were the first of these eight scenic trails named in the National Trails System Act of 1968. Recently, trails, greenways, and paths have been used to promote healthy lifestyles (Hill, Swain, & Hill, 2008); however, literature on the motivations and benefits of hiking is less prevalent. An understanding of the motivations and benefits perceived from hiking on the AT and PCT were explored using Driver's benefits model and means-end theory. A better understanding of the motivations and benefits associated with hiking may encourage new and current users to explore trails, greenways, and walking paths to achieve desired benefits within Driver's (1997) categories (i.e., prevention of a worse condition, improved conditions, and awareness of psychological experiences).

American society is currently plagued with health issues directly correlated with lack of physical activity, many of which are preventable. Heart disease, diabetes, and other chronic conditions are posing a serious threat to public health (U.S. Department of Health and Human Services [DHHS], 2000). Obesity has increased 50% over the last two decades (DHHS, 2000), and 25% of adults engage in no leisure time physical activity (CDC, 2008). Physical activity has been shown to lead to improved health and, thus, the reduction of health risks such as heart disease and obesity (Allen & Cooper, 2003). The AT, PCT, and other trails are resources that could be useful in championing increased physical activity. For example, of the 14 states through which the Appalachian Trail traverses, only Vermont had over 55% of its population meet the physical activity recommendations in both 2005 and 2007 (CDC, 2010). The purpose of this study was to use the Benefits of Hiking Scale [BHS] (Freidt, Hill, Gómez, & Goldenberg, 2010) to determine the differences, if any, in motivations and benefits among AT and PCT hikers. The BHS is based upon Driver's benefits model (Driver, 1997), as well as means-end research gathered from AT hikers (Hill, Goldenberg, & Freidt, 2009).

Literature Review

Trends show that National Park Service visitations have increased in the last half century. According to the National Parks Service, in 2010, there were 281.3 million recreation visits to parks in the United States (Street, 2011). This was an increase of three million visits to national parks since 2006 (Smith, n.d.). Of these visitors, 49 million people visited national recreation areas (Street, 2011), some of which included visits to the Appalachian Trail (AT) and the Pacific Crest Trail (PCT). Understanding why recreationists visited and utilized the AT and PCT are important in order to assess values, motivations, and benefits for hiking.

In 1968, Congress passed the National Trails System Act to "promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Nation" (National Park Service [NPS], 2009, p. 1). The act authorized three types of trails: (a) the National Scenic Trails, (b) National Recreation Trails, and (c) connecting-and-side trails. The creation of the first two scenic trails (Appalachian and Pacific Crest Trails) established the foundation for the National Trail System.

The Appalachian Trail

An assembly of volunteer hiking clubs joined together at the Appalachian Trail Conference in the 1920s and 1930s and designed, structured, and marked the Appalachian National Scenic Trail (AT) (Manning et al., 2000). Begun in 1921 and completed in 1937, the AT was designated as the nation's first official National Scenic Trail in 1968 by the National Trails System Act (Appalachian Trail Conservancy [ATC], n.d.; Manning et al., 2000). Eight national forests, six national parks, several state and local forests, numerous state and local parks, and more than 2,000 incidences of animal and plant species regarded as rare, threatened, endangered, or sensitive are within the path's borders (ATC, n.d.). The AT is well-known for its diversity and length, and is regarded as a

one-of-a-kind park (ATC, n.d.; Manning et al., 2000; NPS, 2007). The trail consists of approximately 2,175 continuous miles of footpath, which span fourteen eastern states stretching from Georgia to Maine (ATC, n.d.). Each year, nearly 2,000 individuals attempt to thru hike (complete a continuous journey of the 2,175 mile trail) the AT.

The 2010 U.S. Census reported 308.7 million people in the United States (Mackun & Wilson, 2011). Almost two-thirds of all Americans reside within a day's drive of the AT (NPS, 2007). Of the approximate 200 million people living within a day's drive of the AT, the NPS (2007) approximated that four million people visit the trail yearly. Although the AT is known as the "People's Path," only two percent of the population, living within a day's drive of the trail, utilizes the trail. Arguably, the potential for this trail has yet to be realized. Because the AT is a resource offering a variety of activities of varying durations (ATC, n.d.), lengthy and accessible (ATC, n.d.; NPS, 2007), and perceived as safe (Manning et al., 2000), the AT is a good candidate for modeling the use of parks to advocate increased physical activity.

The Pacific Crest Trail

The PCT is comprised of 2,650 miles of trail from Mexico to Canada. The PCT was designated a National Scenic Trail officially in 1993, though the concept was developed in the early 1900s. Clinton Clarke, trail pioneer, envisioned "Trails for America" in the early 1920s. This dream became a reality in the Depression-era with the creation of the California Conservation Corps (CCC) (Great Outdoor Recreation Pages [GORP], n.d.). The CCC, coupled with significant contributions from the U.S. Forest Service, linked individual trail sections into one unified multiuse trail. The trail was dedicated to foot travel, thereby protecting scenic corridors for outdoor recreation (GORP, n.d.).

Once a trail of this magnitude was deemed feasible, supporters for the border-to-border trail lobbied the federal government to secure the trail corridor. Clarke and fellow trail pioneer, Warren Rogers, settled for several disconnected trails at the crest of each involved state. With its formal establishment granted, the PCT was able to receive money from the government for upkeep, as well as provide structured access and use of the area. For the millions of people every year who step foot onto the PCT, this provided recreation opportunities ranging from one day to multiple months on the trail. The PCT was not completed and dedicated until 1993, 25 years after its formal establishment (Pacific Crest Trail Association [PCTA], n.d.).

The PCT consists of five sections: Southern California, Central California, Northern California, Oregon, and Washington. The trail passes through 24 national forests, seven national parks, and 33 wilderness areas (GORP, n.d.). Each year, approximately 300 thru hikers attempt to complete the 2,650-mile stretch (PCTA, n.d.). The PCT is a multiuse trail that is accessible to equestrians and mountain bikers. These population groups join the myriad of hiker types (e.g., day and thru hikers) that utilize the trail.

Means-end Theory

The data in this study were collected using the means-end theoretical framework. This framework was utilized to create the Benefits of Hiking Scale (BHS). Means-end theory, developed by Gutman (1982), "links physical objects or services and means with outcomes and personal values of the individual" (Klenosky et al., 1998, p. 13). The theory uses a qualitative approach through a laddering process (Reynolds & Gutman, 1988). Means-end theory looks beyond the benefit a participant gains from an outdoor experience and "views consumers as goal-oriented decision-makers who choose to perform behaviors that seem most likely to lead to desired outcomes" (Costa, Dekker, & Jongen, 2004, p. 405). The link between attributes, consequences, and values (ACV) constitutes means-end theory. ACVs were used in creating a Hierarchical Value Map, which is a pictorial depiction of means-end analysis. *Attributes* referred to the characteristics of the products or services, or in the case of outdoor recreation, an attribute could be a trail, the outdoors, or scenic beauty (Goldenberg, Hill, & Freidt, 2008). *Consequences* referred to benefits (desired outcomes) and also costs/risks (undesirable outcomes); examples could be exercise, environmental awareness, or camaraderie. *Values* refer to "highly abstract consequences that summarize desired end-states of being" (Goldenberg et al., 2000, p. 212). Such values in a hiking experience could include enjoyment of life, self-reliance, or an increase in self-esteem (Goldenberg et al., 2000).

Rather than approaching ACVs independently, means-end theory looks at the interrelatedness of the three. Product/service attributes equated to the "means" the consumers use in order to obtain their desired consequences/ benefits. From this, a consumer achieves personal values or "ends" (Gutman, 1982). Means-end theory typically is used to understand consumer decision-making, and has been previously used in tourism research (Klenosky, 2002; McDonald, Thyne, & McMorland, 2007).

Goldenberg et al. (2008) utilized means-end theory to examine the motivations of AT hikers. Forty-three AT hikers were asked questions that focused on identifying the components of the most important experiences on the AT and how these components related to the outcomes desired. A hierarchical value map was used to depict the strength of connections between ACVs that the hikers held. Hill et al. (2007) identified that hikers of the AT reported that consequences (benefits) such as health, physical challenge, exercise, and relaxation were determined by attributes such as location, length of experience, activities completed in the wilderness, and number of participants in the group. The aforementioned consequences were linked to values. These values included self-fulfillment, self-reliance, fun and enjoyment of life, and warm relationships with others (Goldenberg et al., 2008; Hill et al., 2007). Means-end theory was used to indicate that the use of the AT trails "was motivated by physical challenge, exercise, and health" (Hill, Goldenberg, & Freidt, 2009, p. 19). Means-end theory was ideal for this study because of the "importance hierarchy" that was established as well as the linkage between ACVs. Through these findings, usage and stewardship of the AT was emphasized.

The Benefits Movement

Recreational professionals need to continue to provide quality services through evidence-based research in all aspects of recreation including trails. The need for tangible evidence in order to justify the utility of public services receiving tax funds has been an ever-growing demand of communities (Allen & Cooper, 2003; Moore & Driver, 2005). This need to justify these experiences led to the benefits movement (Allen & Cooper, 2003). The benefits movement refers to the "ongoing process of leisure service providers to identify desirable individual, social, economic and environmental benefits derived from recreational experiences" (Allen & Cooper, 2003, p. 30). The process includes: delegation of resources, promotion of benefits, documentation of outcomes, and promotion of success (Allen & Cooper, 2003).

Within the benefits movement, recreation professionals were asked to identify and measure the benefits (beneficial consequences) of recreation rather than simply assuming that recreation was inherently rewarding (Allen

& Cooper, 2003; Driver, Brown, & Peterson, 1991). The "magnitude, pervasiveness, and social significance of particular types of benefits" should be advanced and communicated to the public, other public agencies, related social service professionals, and those responsible for the provision of leisure services in the private sector (Driver, 1998, p. 26). In order to accomplish this, leisure professionals must recognize what the benefits are for their constituents. Recreational benefit research and statistics are increasingly needed to offer valid and reliable information regarding the benefits of recreation. This is essential to decision makers who allocate resources (Driver et al., 1991). The research support for the identified benefits from hiking trails is needed, and as Jordan (1991), a former member of the President's Commission on Americans Outdoors, noted, without statistical support, "…our arsenal still lacks essential weapons—proof that we are who we say we are, and proof that we do what we say we do!" (p. 366).

To further promote evidenced-based knowledge about the benefits of leisure, Driver operationalized the word "benefit," with respect to the leisure setting, as having one of three characteristics: (a) an outcome causing a change resulting in a more desirable condition than previously existed, (b) the persistence of a desired condition in order to avoid an undesirable condition from occurring, or (c) the realization of a fulfilling psychological experience with regards to recreation (Driver, 1997; Driver et al., 1991). Driver's first category of leisure benefits is the improved condition (a change in condition to a more desirable one); this type of benefit may include improvements to human, natural, or economic factors (Moore & Driver, 2005; O'Sullivan, 2013). Examples of the improved condition may include improved muscular strength, increased flexibility, and increased problem-solving ability. Prevention of a worse condition is categorized as a leisure benefit, which avoids deterioration in a human, natural, or economic condition (Moore & Driver, 2005; O'Sullivan, 2013). Prevention of a worse condition includes benefits such as prevention of depression, prevention of anxiety, maintenance of cardiovascular fitness, and weight maintenance. Realization of a psychological experience, Driver's final typology of leisure benefits, is defined as selection of a recreational activity due to the intrinsic value of the experience (Moore & Driver 2005; O'Sullivan 2013). Psychological benefits include items such as flow, spirituality, or a sense of freedom. Through an understanding of the benefits derived from a recreational experience, professionals may better manage, program, and promote the experience, thereby affording the recreationists an experience more likely to provide said benefits.

Targeting Healthy Lifestyles

Physical inactivity contributes to many of these life threatening chronic diseases (CDC, 2008). Inadequate physical inactivity is a cause of being overweight or obese (U.S. Department of Health and Human Services [DHHS], 2000; 2001). Being overweight or obese is associated with conditions such as arthritis, heart disease, stroke, certain cancer types, type 2 diabetes, certain breathing problems, and psychological disorders like depression (DHHS, 2001). Not only does being overweight or obese increase the risk of the aforementioned health conditions, but the risk of death also rises with increasing weight (DHHS, 2001). In fact, in comparison to individuals of a healthy weight, the risk of premature death can increase 50 to 100% in obese individuals (DHHS, 2001). An estimated 300,000 deaths each year may be attributed to obesity alone (DHHS, 2001).

Physical activity, such as hiking, may be used to contest the conditions of being overweight or obese as physical activity helps control weight (President's Council on Fitness, Sports & Nutrition, n.d.). In 2005, only seven states had populations of which more than 55% met the physical activity recommendations (CDC, 2010). Because physical activity helps control weight and excessive weight is linked to premature death, disability, and decreased quality of life, physical activity tops the list of Leading Health Indicators in *Healthy People 2010*, (DHHS, 2000) which presents a nationwide health and disease prevention agenda. Increasing "the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day" (DHHS, 2000, p. 26) is an objective requiring Americans to begin choosing more active leisure time activities. The National Recreation and Park Association (NRPA) and U.S. Department of Health and Human Services (DHHS) have joined forces to address this health objective; in 2002, Dr. Eve Slater—the Assistant Secretary for Health (DHHS, 2002) said:

> Today the NRPA and [DHHS] affirm that our parks will also be a place of health, where community members can come to not only exercise but to learn about and participate in other ways to make a difference in their well-being. (p. 1)

Secretary of the Interior, Dirk Kempthorne, acknowledged the role National Parks should play in health and fitness. In *The Future of America's National Parks,* it was noted "[national] parks restore minds, hearts, and souls. Many Americans, especially children, are increasingly disconnected from the great outdoors. National parks will be part of the solution to reduce obesity, chronic illness, and adult-onset diabetes" (Kempthorne, 2007, p. 12).

Research Questions

This study addressed the following research questions:

1. Is there a significant difference between AT and PCT hikers' perceived benefits (defined as perceived improved condition benefits, prevention of a worse condition, and awareness of psychological experiences)?
2. Is there a significant difference between AT and PCT hikers' attributes, consequences, and values?
3. Is there a relationship between attributes, consequences, and values of users of the AT and PCT?

Methods

The purpose of this study was to use the benefits of hiking scale (BHS) to determine the differences, if any, of motivations and benefits among Appalachian and Pacific Crest Trail hikers. These individuals were chosen based on the criteria that they had hiked a portion of the AT or PCT and were affiliated with a club and/or an organization that supports the recreational use of the trails. The participants' involvement in clubs and groups provided the assumption that the individuals were interested in the AT or PCT. The AT users were primarily contacted via AT Clubs and AT websites. Most PCT participants were contacted through the Pacific Crest Trail Association's e-mail forum, the PCT-L. The data were collected between 2007 and 2009.

Description of Instrument

The 32-item BHS was developed to understand the values and perceived benefits associated with hiking trails (Freidt et al., 2010). The BHS was administered via an online survey using Inquisite. The BHS has been tested for psychometric properties, with reliabilities ranging from .75-.91 across six subscales: three from Driver's areas of benefits and three from the areas of means-end theory (Freidt et al., 2010; Hill et al., 2010). Internal and external validity checks were

performed on the six factors/constructs; all were well defined with factor loadings of 0.60 or higher (Freidt et al., 2010; Gómez et al., 2010; Hill et al., 2010). The BHS variables were rated on a Likert-type scale from 1 (never/not applicable) to 7 (very much like me).

The BHS contains 16-items that examined hiking grounded in the three categories of Driver's (1998) benefits for recreating: prevention (PREV), improved condition (IMP), and recognition of psychological experiences (PSYC). Example items from the benefits dimension of the BHS are: I hike because I feel hiking reduces my number of illnesses (PREV); I hike because I feel that hiking improves my overall fitness (IMP); and I hike because I recognize that hiking gives me a sense of self-reliance (PSYC). The BHS also contains 16-items theoretically grounded in means-end theory measuring attributes (ATTRIB), consequences (CONSEQ), and values (VALS) of hikers. Example items from the means-end dimension of the BHS are: One of the main reasons I hike the AT is simply because I enjoy the act of hiking (ATTRIB); I hike the AT because hiking is good for my health (CONSEQ); and Overall, I feel that hiking the AT improves self-fulfillment (VALS).

Description on Analyses

In order to assess the three research questions in this study, several analyses were performed. Research questions 1 and 2 consider differences between AT and PCT users on means-end and benefits constructs. These questions were assessed using independent samples *t*-tests. Analysis for question 3 (testing for a relationship between the constructs of means-end theory) utilized a correlation analysis, which allowed for the assessment of the conceptualized traditional relationship (attributes → consequences → values), as well as the exploration of other possible relationships if significant correlations were found in the analysis.

Results

Descriptive Statistics on Respondents

Subjects for this study were hikers of the AT (n = 577) or PCT (n = 311) for a total N of 766. Subjects consisted of male and female hikers over the age of 18. Table 1 indicates that AT and PCT users were predominantly section hikers; however, the second largest group of users of the AT was day hikers (over twice as many as the PCT), whereas the PCT had multi-use users as its second largest user group. Additionally, PCT had nearly 22% of users as thru-hikers, as compared to the AT's 13%. In terms of hiking mileage, 50% of hikers on the AT hiked between 1-10 miles per day, whereas 50.5% of hikers on the PCT traveled between 11-20 miles per day. The vast majority in both groups were White/ Caucasian users. Lastly, AT users tended to be younger than PCT users. In summary, typical AT users were young, White, day users or section hikers, who hike shorter distances, and typical PCT users were older, White, thru, multi-use, and section hikers, who hike longer distances.

Research Questions 1 and 2

The next step was to ascertain whether or not there were differences between these six subscales and users of both the AT and the PCT. An independent samples t-test was used to test the statistical significance in mean differences between AT and PCT recreational users and values and benefits. There were significant differences between AT and PCT users according to the following:

- AT users demonstrated a **higher** likelihood of hiking because it may prevent a worse health condition (M = *5.46, SD* = 1.44) than did PCT users (M = 5.28, SD = 1.56), $t(747) = 3.35$, $p = 0.001$;
- AT users demonstrated a **lower** likelihood toward the attributes as concrete reasons for hiking (M = *6.34, SD* = 0.72) than did PCT users (M = 6.46, SD = 0.79), $t(733) = -2.12$, $p = 0.04$;
- AT users demonstrated a **higher** likelihood toward the identified consequences (M = *5.35, SD* = 1.08) than did PCT users (M = 4.96, SD = 1.33), $t(734) = 4.51$, $p = 0.0001$); and
- AT users demonstrated a **higher** likelihood toward the identified values (M = *5.99, SD* = 1.03) than did PCT users (M = 5.71, SD = 1.21), $t(723) = 3.35$, $p = 0.001$).

There were no significant differences between AT and PCT users and their likelihood toward using the trails for the purposes of an improved condition (e.g., hiking improves my overall fitness), nor for the purpose of realizing a psychological

Table 1. Respondent Characteristics on the AT & PCT

	AT n_1	PCT n_2	AT %	PCT %
Hiker Type				
Day	119	38	26.2	12.2
Overnight	44	29	9.7	9.3
Section	157	100	34.6	32.2
Thru	59	68	13.0	21.9
Multi-use	75	76	16.5	24.4
Miles per Day				
1-5 miles	48	23	10.6	7.4
6-10 miles	179	63	39.4	20.3
11-15 miles	165	77	36.3	24.8
16-20 miles	55	80	12.1	25.7
21-25 miles	5	25	1.1	16.7
26+ miles	2	16	0.4	5.1
Race/Ethnicity				
White	398	270	94.3	96.8
Non-White	24	9	5.7	3.2
Age Category				
18-25	29	13	6.9	4.4
26-30	26	24	3.2	8.1
31-35	36	12	8.5	4.1
36-40	35	14	8.3	4.7
41-45	41	16	9.7	5.4
46-50	64	33	15.2	11.2
51-55	69	45	16.4	15.3
56-60	49	57	11.6	19.3
61-65	40	41	9.5	13.9
66+	33	40	7.6	13.9

state (e.g., gives a sense of self-reliance). Thus, differences were found in all three means-end components but in only one of the three components of benefits (i.e., prevention of a worse condition).

Research Question 3

The next set of correlation analyses was performed to determine the existence of relationships among the means-end model constructs for AT and PCT hikers (i.e., laddering from attributes, to consequences, to values). It was also useful to determine variance explained if researchers knew only the attributes (i.e., to what extent would this help explain a participant's value for hiking). The following one and two-predictor models reflect the percentage explained (beta weight) for AT users (top number, above arrows) and for PCT users (lower number, below arrows). Figure 1 illustrates the traditional view in the literature of attributes affecting consequences, which in turn affects values. Figure 1 illustrates that the impact in both the AT (top scores) and the PCT (bottom scores) are also comparable.

We found that in addition to the *indirect* impact of attributes on values via consequence (Figure 1), there was a significant *direct* impact from attributes to values (Figure 2). Figure 2 also illustrates that in both the AT and PCT studies the direct impact from attributes to values was also comparable. Lastly, Figure 3 considers direct impacts of both consequences and attributes on values (a typical regression model). The beta weights in the regression model clearly indicate that consequences would have a stronger direct impact than would attributes on values.

Figure 1. One Predictor Model (Traditional Model)

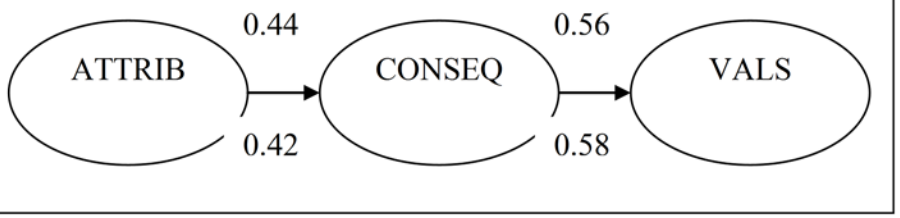


Figure 2. Two Predictor Model A

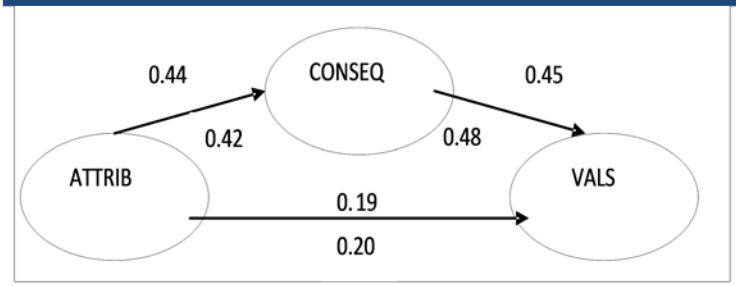
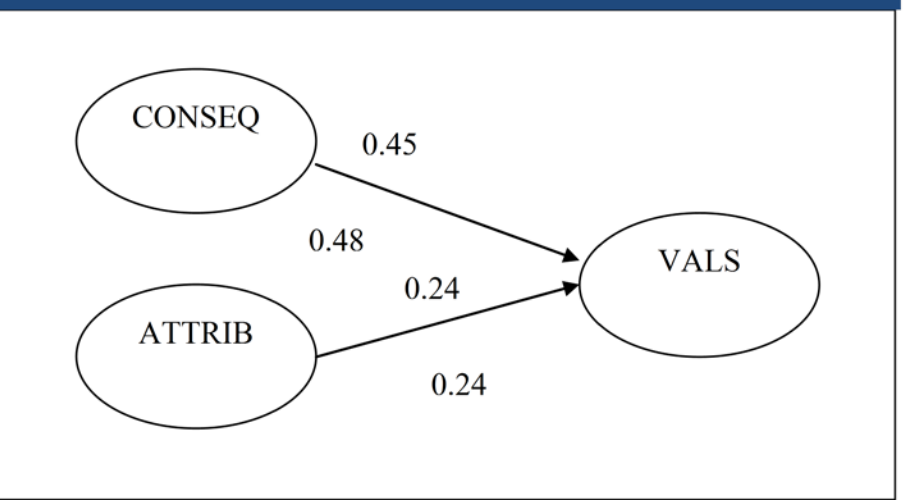


Figure 3. Two Predictor Model B



Discussion

The purpose of this study was to use the benefits of hiking scale (Freidt et al., 2010) to determine differences, if any, of motivations and benefits among AT and PCT hikers. Using Driver's (1998) framework for benefits, the first research question sought to determine if any differences existed between AT and PCT hikers with their respective scores on perceived benefits. Although these data show significant differences among AT and PCT hikers in prevention of a worse health condition, the results support that hiking is perceived to be beneficial by all users.

While there are many benefits derived from participation in outdoor recreation (Moore & Drive, 2005), the benefits of improved condition (IMP) and recognition of psychological experience states (PSYC) are perceived more equally among the AT and PCT users. Prevention (PREV) was higher in AT than in PCT users, which forces researchers to examine the reasons. One argument could be the majority of the population in urban areas felt that "fresh air and exercise" could lead to a better condition and an "escape" from the city. This is further reinforced by the knowledge that the majority (two-thirds) of the American population lives within a day's drive of the AT, also known as the "People's Path," (NPS, 2007). Additionally, parts of the Southeast have higher rates of obesity than the western states (CDC, 2008). From Virginia to Georgia there are nearly 1000 miles of the AT (almost half). Hikers of the AT in this part of the country might be motivated because of the higher rate of health concerns, thus attempting to prevent such outcomes by remaining physically active. Table 1 indicates that this proximity seems to facilitate more excursions to the AT (i.e., a higher frequency of shorter visits/day trips on the AT, but less time on the trail in terms of mileage). However, this did not seem to be the case for PCT users who had more extended trips. Recent trail studies exploring benefits can be a platform for

future research (Freidt et al., 2010; Hill et al., 2008) on trails found in closer proximity to urban areas. Local trails, greenways and other local footpaths are potential examples of resources for producing similar benefits attained from hiking one of our national scenic trails.

Grounded in means-end theory, the second research question sought to determine if differences existed between ACV among AT and PCT hikers. Gutman's (1982) original means-end theoretical framework based the values portion on Rokeach's (1973) seminal work. The basic notion was that a company could better market a product if they knew the consumer's linkages between attributes and values with any given product. Thus, a consumer benefit or the lack of an undesirable consequence could be effectively communicated to the public.

In this study, values and benefits were different among AT and PCT hikers, providing a need to further explore national views on the motives and benefits of hiking. The significant difference between AT and PCT users (e.g., values) presents a challenge for outdoor recreation managers. Does the AT "culture" offer a different level of value as compared to the PCT? Are the values truly different, or are they different interpretations of the same value? Questions of this nature should be further explored to determine the true motives of hikers in both nationally recognized and local trails. Although we are still left with some questions, by using Gutman's means-end theory we have placed the consumer (i.e., hiker) and the values (e.g., enjoyment of life) in a model that should help us further market trail usage to potential consumers. Certainly the AT and PCT are not accessible by all, nor do either have the carrying capacity for all Americans, but by using "all trails," we can possibly market a beneficial product (i.e., hiking) to much of the population. Given that the majority of users in our study were White, the values in this study have a strong hegemonic perspective. More research is needed among non-mainstreamed user groups for the purposes of comparisons to explore whether benefits derived from trail use are universal, or whether more target-based marketing would be warranted.

The third and final research question targeted the relationships between ACV among AT and PCT users. The traditional model of the relationship between ACV held. However, additional models explaining the relationship between ACV were also found based on the data from the respective AT and PCT users. In each of the models found in Figures 1-3, the variance explained was comparable in magnitude between the AT and PCT sites. Figure 1 illustrated the traditional conceptualization. Figure 2 considered both direct and indirect impacts of attributes on values. Lastly, Figure 3 considered a regression model, whereby the direct impact of consequences on values is somewhat attenuated due to the fact that it shares some variance with attributes – this is innately captured in Figure 2 via the indirect and direct impact of attributes on values.

Limitations

This study cannot be generalized to all hiking trails. Data were collected on two national scenic trails, thus values and benefits from users of non-national scenic trails is still needed. Data collection relied on partnerships with trail maintaining clubs and other organizations. Not all clubs or organizations were willing to assist in the study, thus not all views (i.e., values and benefits) of users are included. In some instances, survey information may not have been passed on to all club and organization members. Another limitation is the concern that many hikers that would have completed the survey could have been on the trail during the time in which the survey was available. Also, the survey was distributed online; individuals without Internet access, or who did not provide an e-mail as part of their membership, were not able to respond. Lastly, more research is needed on non-White groups given changing demographics in the U.S.

Conclusion and Future Recommendations

Practical Applications

Hikers of these trails could use this information to encourage others to hike on local trails or footpaths. For example, individuals could share information with prospective hikers that have an interest in any of the identified benefits (e.g., weight loss, socializing, healthy lifestyles, etc.). Hiking group leaders could use the information in the programming and promotion of trips. An example of this would be to increase awareness of values of hiking, such as meeting individuals with similar healthy lifestyles. Fatpacking, for example, is an organization that promotes the use of hiking trails, such as the AT, for weight loss (Fatpacking, n.d). Other researchers have used local trails for hiking among youth groups, targeting specified heart rate zones (Freidt, Hill, & Hill, 2007). Trail maintaining clubs may use the data to acquire new funding for footpath conservation and preservation. As an example, evidence-based research can assist in deciding how best to allocate funding in a manner supporting conservation and preservation while also supporting the provision of benefits desired by users. Benefits similar to those attained while hiking on our national scenic trails (e.g., healthy lifestyle, meeting others with similar interest, environmental awareness and appreciation of our natural resources) may be gained from hiking other trails such as local greenways and footpaths. Recently, many areas have identified the need to build local trails and footpaths to enhance sense of community. The BHS has demonstrated adequate reliability and validity and may be useful to planners, managers and others needing information about the motivations and perceived benefits of more commonly walked/hiked settings, such as local footpaths.

Theoretical Applications

From a theoretical perspective, this study supports well-documented research in means-end literature, as well as the benefits literature. Although these different benefits and means-end constructs were confirmed in previous studies, the current study found both differences and similarities between AT and PCT users among means-end and benefit concepts. As such, more research is warranted to explore both means-end outcomes and benefits with respect to hikers, as well as an application of the BHS to other recreationists.

Given the current fiscal uncertainty, the threat to close state parks (e.g., New York, California, etc.) is in the forefront, and recreation professionals need to act in a number of ways. Researchers can address this dilemma as they continue the promotion of our national, state, and local trails, and increase the amount of evidence related to beneficial outcomes of using local trails. Much of our population turns toward parks and trails to cope and alleviate with the struggles of society. At this time, we need to reassure the public, government agencies, and funding organizations that trails and parks are needed. Conducting evidence-based research identifying and providing data for promoting the benefits of trail usage is the most effective way to secure and protect trails for future generations.

From its inception, both the AT and PCT were created to provide benefits such as enjoying nature, scenery, and outdoor recreation opportunities. Additionally, the intent behind the designation was for the provision of enjoyment by all residents of the United States. The AT and PCT are thought of as providing the benefit for a healthy lifestyle – one such outlet is simply walking either of these foot paths, and

thereby leading to beneficial outcomes such as a prevention of a worse condition (e.g., obesity) or simple "fun." However, little research had been conducted specifically on the various motivations and benefits of hiking either of these national trails. As such, this paper intended to fill a gap in the paucity of literature regarding the perceived motivations and benefits, and advocate for more research of users of our national and local trails.

The societal need to promote physical activity still exists. To challenge sedentary lifestyle choices and promote more active ones, an understanding of the motivations and benefits in choosing physical activities is needed. Motivation is a topic of central concern to leisure researchers because it helps determine why people participate by understanding the consequences associated with the leisure activity (Goldenberg et al., 2008; Hill, Ridinger, Shapiro, & Gómez, 2012; Hill et al., 2007). Understanding the relationship between psychological and physical outcomes may help managers, programmers, and other stakeholders "clarify" the product in terms of what the recreationists is seeking (Manfredo & Driver, 1996). Our study supports the continued use of parks and trails to increase physical activity, thus addressing some of our society's preventable health concerns.

References

Allen, L. R., & Cooper, N. L. (2003). *Benefits based programming curriculum manual*. Ashburn, VA: National Recreation and Park Association.

Appalachian Trail Conservancy. (n.d.b) *Trail years: A history of the Appalachian Trail Conference*. Retrieved October 22, 2007 from http://www.appalachiantrail.org/site/c.jkLXJ8MQKtH/b.786749/k.D5F9/History.htm

Centers for Disease Control and Prevention [CDC]. (2010). U.S. Physical Activity Statistics. Retrieved October 8, 2013, from http://apps.nccd.cdc.gov/PASurveillance/StateSumResultV.asp?CI=&Year=2005&State=0#data

Centers for Disease Control and Prevention [CDC]. (2008). Physical activity and good nutrition: Essential elements to prevent chronic diseases and obesity 2008. Retrieved October 8, 2013, from http://stacks.cdc.gov/view/cdc/7044/#

Costa, A., & Dekker, M., & Jongen W. (2004). An overview of means-end theory: potential application in consumer-oriented food product design. *Trends in Food Science and Technology, 15*(2004), 403-415.

Driver, B.L. (1997, December). The defining moment of benefits. [Electronic version] *Parks & Recreation, 32*(12), 3-6.

Driver, B. L. (1998, February). The benefits are endless…but why? [Electronic version]. *Parks and Recreation, 33*(2), 26-30.

Driver, B. L., Brown, P. J., & Peterson, G. L. (Eds.) (1991). *Benefits of Leisure*. State College, PA: Venture Publishing.

Fatpacking (n.d.) Retrieved February 28, 2010, from http://www.fatpacking.com

Freidt, B., Hill, E., Gómez, E., & Goldenberg, M. (2010). A benefits-based study of Appalachian Trail users: Validation and application of the benefits of hiking scale. *Physical Health Education Nex (us)/ (phén) ix Éducation Physique et à la Santé Journal, 2*(1), 1-22.

Freidt, B, Hill, E. & Hill, L., (September, 2007). *Resiliency through Recreation: A Boys & Girls Club Partnership.* 53rd Virginia Recreation and Park Society Annual Conference (Research Symposium), Williamsburg, VA.

Goldenberg, M., Hill, E., & Freidt, B. (2008). Why individuals hike the Appalachian Trail: A qualitative approach to benefits (abstract). *Journal of Experiential Education, 30*(3), 277-281.

Goldenberg, M. A., Klenosky, D. B., O'Leary, J. T., & Templin, T. J. (2000). A means-end investigation of ropes course experiences. *Journal of Leisure Research, 32*(2), 208-224.

Gómez, E., Freidt, B., Hill, E., Goldenberg, M., & Hill, L. (2010). Appalachian Trail hiking motivations and means-end theory: Theory, management, and practice. *Journal of Outdoor Recreation, Education and Leadership, 2*(3), 260-284.

Great Outdoor Recreation Pages, GORP, (n.d.). Retrieved December 1, 2009 from http://www.gorp.com

Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing, 46*, 60-72.

Hill, E., Goldenberg, M., & Freidt, B. (2009). Motivations for Hiking the Appalachian Trail: Using a means-end approach. *Journal of Unconventional Parks, Tourism, & Recreation Research, 2*(1), 19-27.

Hill, E., Goldenberg, M., Gómez, E., Fellows, S., Freidt, B., & Hill, L. (2010, January). Comparison of Appalachian Trail and Pacific Crest Trail hikers: Motivations and benefits [Abstract]. *Coalition for Education in the Outdoors*, 52-54. Abstract received from http://www2.cortland.edu/dotAsset/12f4edef-17dd-4966-be77-3606fefc69f0.pdf

Hill, E., Ridinger, L., Shapiro, S., & Gómez, E. (2012). An examination of motives for running in a charity event [Abstract]. *Leisure Research Symposium*. Ashburn, VA: National Recreation & Park Association.

Hill, L., Swain, D., & Hill, E. (2008). Energy balance during backpacking. *International Journal of Sports Medicine*, *29,* 883-887.

Jordan, C. R. (1991). Parks and recreation: More than fun and games. In B.L. Driver, P.J. Brown, & G.L. Peterson (Eds.), *Benefits of leisure* (pp. 365-368). State College, PA: Venture Publishing, Inc.

Kempthorne, D. (2007, May). The future of America's national parks. Retrieved from: http://www.friendslittlebighorn.com/FutureofAmericaNationalParks.pdf

Klenosky, D. (2002). The "pull" of tourism destinations. *Journal of Travel Research, 40*, 385-395.

Klenosky, D. B., Frauman, E., Norman, W., & Gengler, C. (1998). Nature-based tourists' use of interpretive services: A means-end investigation. *The Journal of Tourism Studies, 9*(2), 26-36.

Mackun, P., & Wilson, S. (2011, March). *Population Distribution and Change: 2000 to 2010*. [2010 Census Briefs]. U.S. Census Bureau. Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-01.pdf

Manfredo, M. J., & Driver, B. L. (1996). Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. *Journal of Leisure Research, 28*(3), 188-213.

Manning, R., Bacon, J., Graefe, A., Kyle, G., Lee, R., & Burns, R. (2001). "I never hike alone": Security on the Appalachian Trail [Electronic version]. *Parks & Recreation, 36*(7), 50-56.

Manning, R. E., Valliere, W., Bacon, J., Graefe, A., Kyle, G., & Hennessy, R. (2000). Use and users of the Appalachian Trail: A geographic study. In G. Kyle (Ed.), *Northeastern Recreation Research Symposium. Characteristics of outdoor recreationists* (pp. 115-120). Bolton Landing, NY: SUNY Syracuse.

McDonald, S., Thyne, M., & McMorland, L. (2007). Means-end theory in tourism research. *Annals of Tourism Research*, *35*(2), 595-599.

Moore, R. L., & Driver, B. L. (2005). *Introduction to outdoor recreation: Providing and managing natural resource based opportunities*. State College, PA: Venture Publishing, Inc.

National Park Service. (2007). *Appalachian National Scenic Trail*. Retrieved

July 23, 2007, from http://www.nps.gov/appa/
National Park Service. (2009). *The national trails system act* (P.L. 90-543). Retrieved April 16, 2009, from http://www.nps.gov/nts/legislation.html
O'Sullivan, E. (2013). Power, promise, and possibilities of parks, recreation, and leisure. In Human Kinetics' (Ed.) *Introduction to Recreation and Leisure, 2nd ed.* (pp. 3-20). Champaign, IL: Human Kinetics.
Pacific Crest Trail Association. (n.d.) Pacific Crest Trail. Retrieved January 11, 2008, from http://www.pcta.org/index.asp
President's Council on Fitness, Sports & Nutrition. (n.d.). Be active: Why is it important? Retrieved October 8, 2013, from http://www.fitness.gov/be-active/why-is-it-important/
Reynolds, T. J. & Gutman, J. (1988). Laddering theory, method, analysis, and interpretation. *Journal of Advertising Research, 28*, 11-34.
Rokeach, M. (1973). *The nature of human values*. New York, NY: Free Press.
Smith, D. (n.d.). *National parks visitation statistics*. Retrieved June 1, 2009, from http://usparks.about.com/od/natlparkbasics/a/Natlparkvisitor.htm
Street, B. (2011). Statistical abstract: 2010. Natural Resource Data Series. Retrieved October 20, 2013, from http://www.nature.nps.gov/socialscience/docs/PUSO_Abstract_2010.pdf
NPS/NRPC/SSD/NRDS—2011/147. National Park Service, Fort Collins, Colorado.
U.S. Department of Health and Human Services [DHHS]. *Healthy people 2010*: *Press Release*. (2002). National Recreation and Park Association and U.S. Department of Health and Human Services working for the nation's wellness. Retrieved February 21, 2008, from http://healthypeople.gov/Implementation/nrpa/
U.S. Department of Health and Human Services [DHHS]. (2000, November). *Healthy people 2010: Understanding and improving health*, 2nd ed. Washington, DC: U.S. Government Printing Office. Retrieved October 15, 2013, from http://www.healthypeople.gov/2010/Document/pdf/uih/2010uih.pdf
U.S. Department of Health and Human Services [DHHS]. (2001). *The Surgeon General's call to action to prevent and decrease overweight and obesity*. Washington, DC: U.S. Government Printing Office.