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BENEFITS OF HIKING: A MEANS-END APPROACH ON THE APPALACHIAN TRAIL

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The purpose of this research was to examine the outcomes prompting hiking along the Appalachian Trail (AT). By using means-end theory, linkages between attributes, consequences, and values of the AT hiking experience were made. The researchers conducted forty-three interviews of AT hikers. Self-fulfillment, self-reliance, fun and enjoyment of life, and warm relationships with others were some of the values that emerged. Specifically, strong links existed between hiking and exercise, exercise and health, health and fun and enjoyment of life. While this area of research on the AT is new, results of this study can be used by recreational professionals that work with the AT or other hiking trails to promote appropriate use of natural resources.

Escalation of sedentary lifestyle health issues in the United States create a need to encourage and promote physical activity; and research suggests that participation in exercise and recreation may help to mitigate many of these health issues (Kern, 2007). Outdoor recreation, such as hiking, is a growing segment of the U.S. physical activity market with almost 70 million people participating during 1999-2003 (National Survey of Recreation and the Environment [NRSE], 2003). During those same years, nearly 57 million people camped in a national forest, national park, or state park (NRSE). Secretary of the Interior Dirk Kempthorne (2007) suggested, "National parks will be part of the solution to reduce obesity, chronic illness, and adult-onset diabetes" (p. 12).

America's first National Scenic Trail, the Appalachian Trail, is a component of the National Park Service that affords millions of Americans the opportunity to engage in a variety of physical activities; these activities range from a short walk or run to a complete "thru" hike of the entire trail (Appalachian Trail Conservancy [ATC], n.d.; Nisbett & Hinton, 2005). The Appalachian Trail, colloquially referred to as the AT, consists of approximately 2,175 miles of continuous footpath spanning 14 eastern

states (National Park Service [NPS], 2007). The AT is also known as the People's Path because nearly two-thirds of the American population is within a day's drive of it (NPS, 2007).

In 2006, the U.S. Census Bureau estimated over 299 million people were living in the United States (U.S. Census Bureau, 2006). Despite the fact that 200 million people reside reasonably near the AT, the National Park Service (NPS) estimates that only four million people, or two percent of the population within a day's drive, visit the trail each year (NPS, 2007). Society is plagued with health issues directly correlated with sedentary lifestyles, and local and national trails (e.g., AT) could be used to endorse physical activity. Thus, it is important to realize the potential use for these resources. Research geared toward helping this diverse group of natural resource managers decide how best to market, maintain, and develop the trail is sparse.

In addition to affording the opportunity to be physically active, the AT offers the opportunity to directly experience nature; direct experiences with nature may offer additional benefits. The Benefits Movement, within the recreation profession, was launched in the 1990s and included three components: management, programming,

and awareness (Allen & Cooper, 2003). The movement assisted in the advocacy of evidence-based research among recreation professionals in areas such as environmental benefits. As highlighted in *Last Child in the Woods: Saving our Children from Nature-Deficit Disorder* by Richard Louv (2007):

A widening circle of researchers believes that the loss of natural habitat, or the disconnection from nature even when it is available, has enormous implications for human health and child development. They say the quality of exposure to nature affects our health at an almost cellular level...many studies credit exposure to plants or nature with speeding up recovery time from injury. (p. 43-46)

Direct experiences with nature, such as hiking on the AT, are also beneficial in that participation in outdoor activity may lead to a connection with the environment. This connection may be useful in promotion of environmental stewardship. As Louv asserts, "The protection of nature depends on more than the organizational strength of stewardship organizations; it also depends on the quality of the relationship between the young and nature – on how, or if, the young attach to nature" (p. 154). Thus, for this reason too, it is important to realize the potential use for resources such as the AT.

LITERATURE REVIEW

THE APPALACHIAN TRAIL

The Appalachian National Scenic Trail was designed, structured, and marked by a conglomeration of volunteer hiking clubs brought together by the Appalachian Trail Conference (Manning et al., 2001). The first section of the AT was planned in 1921. The trail was completed in 1937 and designated as our nation's first official National Scenic Trail in 1968 by the National Trails System Act (ATC, n.d.; Manning et al.). Within the path's borders are eight national forests, six national parks, numerous state and local forests, many state and local parks, and more than 2,000 plant and animal species that are deemed rare, threatened, endangered, or sensitive (ATC, n.d.). Consisting of approximately 2,175 continuous miles of footpath, stretching from Georgia to Maine (ATC, n.d.; NPS, 2007), the AT is considered to be a natural crown jewel (Sinclair, 2000).

The AT is a component of the NPS (ATC, n.d.; Nisbett & Hinton, 2005). While the NPS is the official administrator of the trail's protection, the NPS does not manage all of the properties within the trail's domain. Routine management of the footpath is mostly entrusted to the Appalachian Trail Conservancy, formerly known as the Appalachian Trail Conference (Nisbett & Hinton). Management of the AT is rather unique in that several public and private sectors, such as the NPS, USDA Forest Service, several state agencies, ATC, and thirty trail maintaining clubs work collaboratively to manage the footpath (ATC, n.d.). However, research geared toward helping this diverse group of managers decide how best to market, maintain, and develop the trail is sparse.

After reviewing the literature on the AT, very few evidence-based studies were found. In fact, the most significant study was from data less than ten years old. In this study, Manning et al. (2001) explored use and users of the trail. After surveying nearly 2,000 hikers, Manning and colleagues found that nearly 37% of those that visit the AT were day users, approximately 32% were overnight users, slightly more than 15% were section hikers (users hiking a substantial portion of the trail), and roughly 16% of users were thru-hikers. These groups averaged 7.2 hiking days and 71 miles of hiking. The vast majority of users were male (69%); nearly 97% of users were White; users averaged the mid-to-upper thirties in age; and nearly 70% of all typologies of hikers had completed college.

Yearly visitation by those who live reasonably near the AT equals two percent, but usage of the People's Path has increased dramatically since its inception. In particular, thru-hiking – hiking the entire length of the approximately 2,175 mile trail – increased twenty fold from the 1960s to the 1970s, doubled from the 1970s to the 1980s, and more than doubled again from the 1980s to the 1990s (ATC, n.d.). While thru-hiking has increased, thru-hikers compose a small percentage of trail users in most areas along a National Scenic Trail, as primary use of the AT is for short hikes (Sinclair, 2000). Understanding outcomes or benefits of all those who do choose to utilize the trail may be instrumental in marketing to the AT user population and encouraging trail use by a more diverse population.

Regardless of the amount of use throughout its eighty-year history, research on the AT is limited. Much of the research on the AT focused on place attachment (Kyle, Graefe, & Manning, 2004; Kyle, Graefe, Manning, & Bacon, 2004) and safety (Burns,

Lee, & Graefe, 1999; Manning et al., 2001). Although Kyle and colleagues (2003, 2004) extended the investigation of place attachment in order to include an examination of how AT hiking trip motivation and setting motivation correlated to place attachment, the only motivation focused study found was Nisbett and Hinton's (2005) study which explored the motivations for AT hikers with disabilities. This exploratory research uncovered five motivational themes: knowing one's self, importance of people as support, determination, viewing the AT as a challenge, and adaptations. However, it should be noted that this study only interviewed seven individuals.

Given the current lack of literature and contemporary challenges of leisure behavior on trails, a need for further research was evident. Use of means-end theory as a theoretical framework for this research aligned well with both the need to increase the amount of theory-based research on the AT and the need to encourage physical activity, stewardship, and usage of trails by diverse populations.

MEANS-END THEORY

Gutman (1982) linked research findings concerning marketing, values, benefits, and means-end in order to produce a viable, theory-based methodology for approaching marketing of a product. Gutman founded his theory on Rokeach's (1973) principles associated with values. Gutman's theory makes a connection between Rokeach's value systems and consumer choice of products. A company would be better able to market a product after understanding the connection between the customer's value system and a product's physical attributes because the company could relate the product to a desired consumer benefit and/or consumer's goal orientation, also known as desired end-state (Gutman).

Thus, Gutman (1982) developed means-end theory as a method of analyzing factors driving a consumer's purchasing behavior. Means-end theory links physical objects or services and means with outcomes and personal values of the individual (Klenosky, Frauman, Norman, & Gengler, 1998). The theory focuses on interrelationship among attributes, consequences, and values as three levels of abstraction (Goldenberg, Klenosky, O'Leary, & Templin, 2000). It views consumers as goal-oriented decision makers who are motivated to choose behaviors that will lead to specific desirable outcomes (Costa & Dekker, 2004). This is not unlike expectancy-value theory; expectancy-value theory states that consumer actions produce consequences and

learn to associate specific consequences with particular aspects of a product (Gutman & Miaoulis, 2003). Both theories examine the process of how consumers develop an opinion about a product or service and how that process leads to the intended outcome. Yet, means-end theory looks beyond direct consequences and continues to more abstract values associated with those consequences.

Attributes within means-end theory are physical objects, services, or experiences of the individual and are viewed as being relatively concrete (Goldenberg, Klenosky, McAvoy, & Holman, 2002). Goldenberg and colleagues examined Outward Bound courses to understand outcomes associated with participating in a wilderness experience. Attributes, consequences, and values emerged from the study that could be similar to a study associated with hikers on the AT. Attributes of an outdoor education experience could include length of time, methods of transportation, group size, or activities such as hiking or backpacking. An attribute such as hiking could be a concrete example of why one would be interested in the activity of backpacking.

Consequences, either positive or negative, are the direct result of attributes. Negative consequences are referred to as costs or risks; whereas, positive consequences are frequently referred to as benefits. Some examples of an outdoor experience's positive consequences may include developing technical skills, learning leave no trace principles, or developing interpersonal skills. Some possible negative consequences of the same experience may include injury, loss of social connection, or physical exhaustion.

In means-end theory, values are defined as the participants' desired end-state. In other words, values are the participants' end destination as they travel up the means-end ladder of abstraction from more concrete attributes to highly abstract value-states (Klenosky, Gengler, & Mulvey, 1993). Klenosky et al. explored attributes, consequences, and values for ski destination choice. Strong links were made of the attributes hills and trails, to the consequences of ski variety and challenge, resulting in the values of fun and excitement and achievement. Ski resorts could use these values as they design promotional materials. In addition, knowledge of such values could assist leisure professionals in gaining insight of a participant's perspective and how that may or may not differ from the organization's mission or vision, eventually leading to more effective leisure services.

Linkages between attributes,

consequences, and values are described as means-end chains. Each link in the means-end chain describes how a participant's thoughts have progressed from either attribute to consequence or consequence to value. In this way, the thought process of the individual can be followed from start to finish. For example, a means-end chain for an AT experience may include the attribute *trail*. This attribute may then be linked to the consequence *awareness*, which may be linked to the value *self-fulfillment*. These elements would form the means-end chain, which illustrates that this participant's ladder response has indicated that the trail experience itself increased their awareness and was personally fulfilling.

Means-end chains are constructed by a data collection technique known as laddering. Laddering was first conceived by Olson and Reynolds (1983) and further developed in theory and application by Reynolds and Gutman (1988). The application by Reynolds and Gutman assisted means-end researchers with a variety of information including two main problems with laddering. One such problem occurs when participants do not know the answer. In other words, they may not have given prior conscious thought to their response, resulting in the inability to provide an answer. This could, at times, be problematic for the interviewer, especially if the participant is not skilled at the laddering technique of interviewing. One technique that can be used is to rephrase the question in a specific context. The second potential problem with laddering is when information becomes too sensitive, resulting in a participant stating, "I just don't know." One common approach, identified by Reynolds and Gutman, is to make a note of concern and revisit that question later in the interview.

Laddering builds means-end chains by asking a participant why an attribute is important; the response will either be another attribute or a consequence. The researcher then repeatedly asks the participant why each subsequent response is important until the participant eventually gives an answer reflecting a value state or can no longer give a response. In this method, each response is similar to a rung on a ladder. Each rung leads the researcher to the top level of the participants' thinking, the end states (i.e., values). This technique facilitates the arguably redundant process of having participants reflect in order to respond to the underlying value associated with the experience.

While means-end theory has been used repeatedly and with much success in the field of marketing (e.g., Klenosky et

al., 1993; Mulvey, Olson, Celsi, & Walker, 1994; Walker & Olson, 1991), the theory has other pragmatic applications not yet fully explored including a practical framework for researching outcomes produced in outdoor adventure experiences. Understanding the relationship between program attributes, consequences, and values can help programs or hiking clubs to better market an experience (Goldenberg et al., 2002). Therefore, the purpose of this study was to determine answers to the following research questions:

1. What are the attributes, consequences, and values associated with AT hikers?
2. What is the strength of the relationship between attributes, consequences, and values associated with AT hikers?

METHODOLOGY

DATA COLLECTION PROCEDURES

Data were collected using a convenience sampling method during fall 2006. Researchers presented the potential project at the Tidewater Appalachian Trail Club (TATC) officers' meeting. The meeting was used as a forum to determine if the TATC was interested in having their members participate. Officers were very supportive and set up a date and time for researchers to present at one of the general meetings. Immediately following the researchers' presentation at the general meeting, interested participants were asked to sign up with a preferred day of the week. Approximately 65 TATC members attended the meeting, of which 50 agreed to participate in the study. Afterwards, contacts were made in order to set up specific dates and times for interviews with all interested members. Most interviews took about 5-10 minutes and were conducted over the telephone. Interviews were conducted with five levels of AT hikers: day hikers, weekenders, multi-use hikers, section-hikers, and thru-hikers.

For the purposes of this study, the aforementioned terms were operationalized by the researchers based on a review of literature and discussions with hikers.

- A day hiker is a hiker who does not spend the night on the trail.
- A weekenders is a hiker who spends at least one night on the trail but does not hike more than 50 miles of the trail per trip.
- A multi-use hiker hikes in two or more different formats (e.g., section and thru-hiker) equally and spends more than one night on the trail.
- A section hiker is a hiker who spends

the night on the trail and hikes more than 50 miles per trip but does not hike the entire length of the trail.

- A thru-hiker is an individual who hikes the entire length of the trail as one continuous journey.

After collection of initial demographical data, the researcher asked each participant to identify motives of their AT experience that they felt were most meaningful. Most participants listed between one and three components. The researcher then selected the first component mentioned and asked the participant, "Why was that important to you?" Once the participant gave a response, the researcher would ask again, "Why was that important to you?" repeatedly until the participant essentially exhausted his or her reasons. Through this interview method, the researcher was able to discern and record the participants' thought process associated with the component mentioned. Typically a respondent would start with an attribute or consequence and by answering "Why is that important to you?" would eventually provide another consequence and/or a value. If participants started with a consequence, they were asked "What part of the AT led you to this?" to try to understand the attribute. See Appendix A for the interview script.

DATA ANALYSIS

Data were entered into LadderMap, a software program that creates a value map of the attributes, consequences, and values (Gengler & Reynolds, 1995). As data were entered into LadderMap by the researcher, each comment from the participants was given a content code by reviewing and grouping all responses. Once coding was completed and a complete list of codes compiled, 50% of the data was stripped of its codes and given to another researcher to blindly code. After the second coding was completed, the two coded-versions were compared to determine intercoder reliability. Once initial intercoder reliability was determined (88.82%), researchers worked together to resolve differences in coding of the data.

The next step in data analysis was to utilize LadderMap in the creation of an implication matrix. The implication matrix is an extensive matrix that shows every association made by participants between different attributes, consequences, and values of the study. The implication matrix is an extremely useful tool for showing frequency of certain associations. In order to simplify results and provide a visual that is easy to follow, a hierarchical value map (HVM) was produced. The HVM can convey an

understanding of the thought processes of participants, for a HVM provides a graphical summary of linkages that emerge across participants' ladders. This tool could be used for programming within related fields. In this case, managers of the AT could view a HVM to determine what people gain from their participation on the AT, or they could view the HVM to discover what it takes to obtain certain values from the AT. HVMs provide a clear understanding of both the thought processes of participants and what the experience ultimately means to them.

RESULTS

A total of 43 participants were interviewed. Seven interested participants were unable to be reached during the course of the study. Descriptive statistics were run to determine demographics of the sample. The sample consisted of 41% (n = 17) weekenders, 27% (n = 12) day hikers, 16% (n = 7) thru-hikers, 12% (n = 5) section hikers, and 4% (n = 2) who classified themselves multi-use hikers. Atypical of many hiker studies, females represented the majority of this sample (65%, n = 28). Participants were 98% (n = 42) Caucasian, with only one African American participant. Occupations held were diverse; however, the largest single group was retired individuals (23%, n = 8). Ages ranged from 21-75 years.

HVMs can be thought of as a road-map of participants' thoughts on any given attribute. HVMs visually depict means-end chains by linking attributes of focus to consequences and values associated with each. Chains are formed utilizing lines of varying thickness representing frequency of linkages between two items connected via the line. In this structure, linkages appearing more frequently are represented by thicker lines; conversely, thinner lines join less frequently occurring linkages. To aid in differentiation, attributes, consequences, and values on the HVM appear in different colors. Attributes are white circles, consequences are light gray circles, and values appear in black circles. Thickness of lines and coloration help to clearly distinguish between different components and understand frequency of the component's associations.

An HVM was created for all 43 participants' responses and indicated what components of the AT experience were the most meaningful and why those components were important (Figure 1). Attributes that emerged from the data included being outdoors, hiking, the trail, and survival. Consequences that emerged included

environmental awareness, physical challenge, camaraderie, and exercise. Self-fulfillment, self-reliance, fun and enjoyment of life, and warm relationships with others are some of the values that emerged. Specifically, strong links existed between hiking and exercise, exercise and health, and health and fun and enjoyment of life. Other strong links existed between outdoors and environmental awareness, and outdoors and self-awareness. Interactions were strongly linked with camaraderie, and camaraderie was linked with fun and enjoyment of life. Generally, data indicate that people hike the AT for fun and enjoyment of life and to develop warm relationships with others. Predominant attributes mentioned by individuals were hiking, the outdoors, and the trail in general. The most referred consequences were environmental awareness and camaraderie followed by health, exercise, and overall awareness. This means that these attributes and consequence were most often identified regardless of their relationship to certain values. Although not a link to any other attribute, consequence, or value in the HVM, survival was found to lead to self-reliance.

One last interesting finding was revealed in the HVM. Four attributes were linked directly to a value, thereby skipping the mediating variable of a consequence. These were scenic beauty linked to fun and enjoyment of life, outdoors linked to self-awareness, hiking linked to satisfaction, and survival linked to self-reliance. This is consistent with means-end literature. Some individuals are able to identify their underlying motive or value without being taken through the second step of a consequence. As an illustration, when a participant was asked to identify a list of outcomes received from hiking on the AT she responded with scenic beauty. When she was asked "Why is scenic beauty important to you?" she responded with "It provides me fun and enjoyment of life." Her response was a value; therefore, that ladder was complete.

DISCUSSION

The recreation profession has been criticized for lacking empirical evidence and ineffectively communicating intended benefits to constituents (Driver & Moore, 2005). The need to justify, in terms of tangible outcomes, utility of public services receiving tax funds has been an ever-growing demand of the general populace (Allen & Cooper, 2003; Moore & Driver). This need to justify recreation and leisure experiences led to the Benefits Movement, an "ongoing

process of leisure service providers to identify desirable individual, social, economic and environmental benefits derived from recreational experiences" (Allen & Cooper, p. 30).

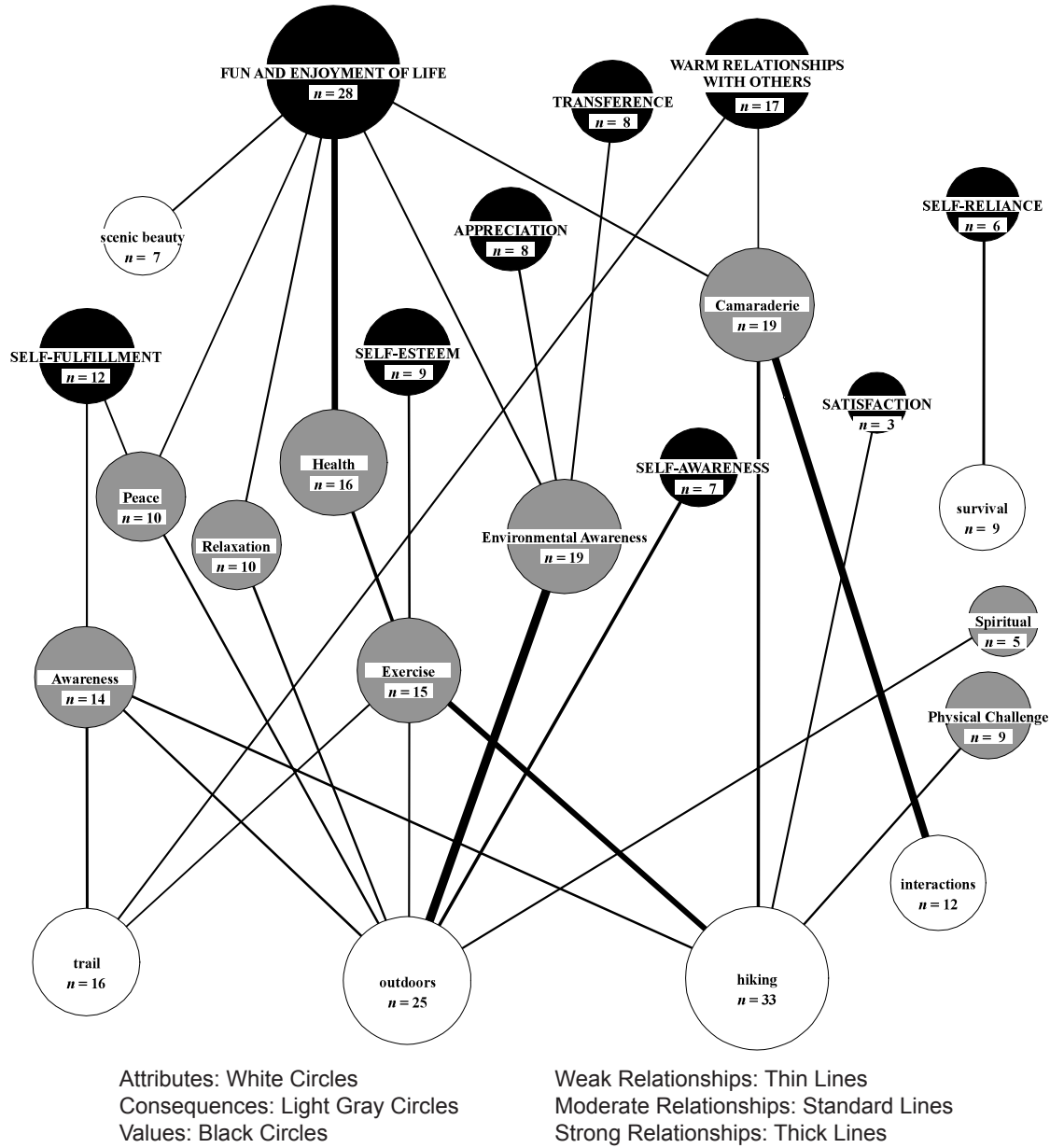
This current study addresses the need to identify specific benefits gained from hiking. Information gathered about specific benefits hikers perceive to gain by hiking the AT may be useful in benefits-based marketing, programming, and management. Further research in regards to the motivation for and benefits of hiking the AT is necessary so that trail managers, natural resource managers, and recreation professionals associated with the trail can disseminate evidence of the benefits.

While recent research has explored the meaning of the trail (Kyle et al., 2004) and trail usage among people with disabilities (Nesbitt & Hinton, 2005), an even more recent study was conducted on energy expenditure while hiking on the AT (Hill, Swain, & Hill, 2008). Noting the trend of recent AT research, one could speculate that interest in the use, diversity, benefits, and impact of the trail usage is growing.

ATC, land managers, and other organizations attempt to promote and protect the AT as the trail is a living catalog of hundreds of rare, threatened, and endangered species and is internationally reputed as a recreational resource (ATC, n.d.). Thus, promotion and protection of this great national resource is appropriately timed. Protecting our limited natural resources will help ensure that future generations have the opportunity to enjoy them as well. One way to educate, and thereby protect, is by encouraging the first person experience. The successfulness of a promotional campaign for the first person experience of AT hiking may be improved by understanding motivations of past and current AT hikers.

Data from this study revealed a number of concrete attributes among hikers such as the trail, being outdoors, scenic beauty, and interactions. These basic motives are what initially attract hikers, as the means-end literature indicates. The hiker then hopes to gain by-products or consequences such as health, peace, physical challenge, and environmental awareness. Finally, data from this study explored values or underlying motives for one to hike on the AT such as self-fulfillment, appreciation, and self-esteem. An interesting and timely finding from this study was that participants strongly link the attribute of the outdoors to the consequence of environmental awareness. Further research is needed to provide additional empirical evidence of this finding. This portion of the data also

FIGURE 1. Hierarchical Value Map for Appalachian Trail Hikers (n = 43)



parallels Louv's (2007) notion of the need for a primary experience with the outdoors and environmental stewardship. Louv claimed:

For a new generation, nature is more abstraction than reality. Increasingly, nature is something to watch, to consume, to wear – to ignore Reducing that deficit – healing the broken bond between our young and nature – is in our self-interest, not only because aesthetics or justice demands it, but also because our mental, physical, and spiritual health depends upon it. The health of the earth is at stake as well. (p. 2-3)

Another way to educate, and thereby promote protection of the trail, is by advertising perceived benefits of trail usage. Data from this study supported that participants strongly associated hiking with social interactions, camaraderie and fun, and enjoyment of life. Further research should be conducted to validate these findings. By advertising benefits (i.e., Benefits-Based Awareness), we can better offer scientific knowledge on results of recreation participation. Potential trail users may be encouraged to hike because the hiking experience has been linked with an outcome found to be desirable, such as the development of self-reliance.

Yet another method of educating and, thus, promoting protection of this natural resource is by intentionally programming for desired benefits and outcomes. One educational program exemplifying outdoor education's use in promoting both conservation values and healthy lifestyles is "A Trail to Every Classroom," which brings together teachers, trail managers, and children in order to engage in physical exercise, explore nature, and learn about the AT as a natural and cultural resource (A Trail to Every Classroom, n.d.). Programs and partnerships such as the one aforementioned are critical in allowing for future generations' usage and enjoyment of trails.

IMPLICATIONS

As society is concerned with leisure behavior and sedentary lifestyles, hiking on city, state, and national trails can be more beneficial than may be realized by both current users and potential users. This data supports hiking as an activity leading to perceptions of a healthier lifestyle. Physical activity, such as day hiking, is not only physically healthy but psychologically beneficial as well. New research is being conducted to further investigate physical benefits of exercise through hiking (Hill et al., 2008). Hill and colleagues found that backpacking might allow an individual to use an excess of 5000 k/cal per day. Moreover, participants in this study did not maintain body mass. This research may be useful in motivating individuals seeking activities for weight loss or weight management with promotional material geared towards increasing new users and frequency of use by current hikers and addressing community health concerns. Thus, this research line needs to continue.

Not everyone is motivated to hike for the same reasons. As hypothesized by means-end theory, persuading an individual to buy into the value of the recreation experience will be more successful if the recreation experience can be correlated to outcomes valued by the potential participant. Therefore, efforts by recreation professionals to encourage hiking may be more successful if researchers collaboratively address psychological benefits as well as physiological benefits. Results of the current study indicated self-fulfillment, self-reliance, fun and enjoyment of life, and warm relationships were several of the psychological values, or underlying motives for hiking. This is also an ideal opportunity to use tactics such as Benefits-Based Awareness. According to means-end theory, consumer-purchasing behavior (or in this case consumption of a recreational experience) may be increased by linking the product or experience with consumer's values. This marketing approach is used to effectively deliver potential benefits to constituents. The process of promoting intended or potential benefits can be used by administration, programmers, and other professionals within recreation to address U.S. society's current concern with health related illnesses and disability associated with lack of physical activity. This study provides evidence of numerous health benefits achieved from hiking. For example, strong linkages exist between peace, relaxation, and health, with health being the dominant benefit. Marketing materials should use results from this study to communicate with

potential users.

Results of this study suggest that hikers of the AT are motivated largely by fun and enjoyment of life and warm relationships with others. This suggests that the social component of the experience is meaningful, and hiking is not purely sought after as an individual experience. Other individual values were significantly present, such as self-fulfillment and self-esteem. An examination of the extent to which hikers are motivated by social factors may provide for interesting comparisons with other long distance hikes such as the Pacific Crest Trail (PCT), which receive far fewer visitors and travels through mostly isolated wilderness. An expansion of the current study, along with research on the PCT, could provide recreational professionals with another perspective on benefits for using trails and information helpful in management of those trails. Knowing the differences and values associated with differences may allow for better advertising and promotion geared toward attracting a more diverse population of users.

Finally, supporters of rail-to-trails and greenways movements could benefit from this study. More counties, towns, and cities are seeking funding and communities in support of building such trail systems. Results from this current study indicate that fun and enjoyment of life and warm relationship with others are potential outcomes from hiking. Using these results as evidence could be helpful in securing recreation additions such as rail-to-trails. Leisure professionals can use knowledge of attributes, consequences, and values from this study to move forward with evidence-based practices within their community. Knowledge that hiking on a city trail or path can offer such values of fun and enjoyment of life could, in fact, be motivation for a recreation participant to modify his or her lifestyle. This scientific knowledge can assist leisure professionals as we continue to offer experiences that positively impact quality of life.

LIMITATIONS AND FUTURE STUDIES

One of the most significant limitations of the study was the sample size. With only 43 participants, it becomes difficult to generalize. In addition, the majority of this sample was limited to members of one trail club (i.e., TATC). Using a larger sample size would assist in the development of key values or outcomes for hiking. Future researchers should also use various methodologies of data collection. The personal interviews approach (i.e., why is that important to you) is time consuming and can create frustration among participants. During the course of

the interviews, at least two participants were observed becoming frustrated. At that point, the interview was terminated and resulting data were not used. This limitation could be even more problematic if a large sample was used. One potential solution would be to create a quantitative scale. Although slightly biased, using a predetermined set of attributes, consequences, and values (based on previous research) could afford a quasi-qualitative scale. A scale of this type could also be used as an online option. Finally, the last limitation is that of skewed distribution of females in the study. The majority of this sample was female, which is atypical of many AT hikers studies and users of the AT.

Suggestions for future research also include examination of specific sub-groups (e.g., youth and older adults). As leisure professionals address such trends as encouraging youth to become re-active in nature (e.g., Richard Louv's *Last Child in the Woods*) and other trends are targeting older adult participation in non-traditional activities (e.g., hiking), this study provides a platform for current recommendations. In addition, The Leave No Trace (LNT): Center for Outdoor Ethics has pursued more urban environmental stewardship programming and evaluation. This is another avenue that could provide potential for partnerships in future research. Current research (e.g., Hill, Hill, & Freidt, 2007) has demonstrated effective partnerships between State Parks, LNT, Boys & Girls Clubs, and universities when attempting to encourage inner-city youth to use urban trails for both physical activity and education.

Future studies should also begin to explore physical and psychological benefits of hiking associated with other trails. Although many people can access the AT, other local trails may be even more accessible and less intimidating to some. The researchers propose that benefits similar to those attained while hiking on the AT may be gained from hiking other trails such as local greenways and footpaths. This supposition should be explored.

CONCLUSION

This research demonstrates the potential use of means-end theory in the examination of outcomes of a hiking experience. Research should continue by expanding the knowledge of hiking experience outcomes and examining different subsets of AT hikers (such as day-hikers) and users of other trails and pathways. This should be accomplished to

assist large land management organizations at the national, state, and local level to understand their users and educate the public about both benefits of their work and services they provide (e.g., fun and enjoyment of life as a value).

Positive values that individuals obtained (e.g., self-fulfillment, fun and enjoyment of life) parallel much of the recreation benefits movement. Many would argue that these outcomes are highly valuable and would benefit users that have not yet experienced hiking on the AT. Information from this study can add to the body of recreation literature as recreation professionals continually strive to increase awareness of benefits of outdoor recreation while implementing programs that specifically target development of those benefits. Finally, this type of research can serve as a partnership model between recreation agencies and academia to foster evidence-based practices such as promoting healthy lifestyles through physical activity.

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Means-end Approach of an Appalachian Trail Hiker

Participation Number: _____ 1. Male or Female

Introduction: Good morning/afternoon/evening. I'm XXXX, talking to you on behalf of XXXX. I am interested in understanding what you got from your participating hiking on the AT trail. Would you be willing to participate in a 10-minute interview?

As you know the purpose of this interview is to find out what your outcomes are from hiking on the AT trail. There are no right or wrong answers to these questions. I want you to feel comfortable talking with me and answering my questions. Please be assured that all of your responses will remain completely confidential. Also, when answering a question please refer only to your most recent AT trail experience rather than any other previous outdoor experiences you might have had. Any questions for me? OK, let's begin?

SECTION 1 – General Questions

2. How old are you? _____
3. Which of the following best describes you? (please circle one)
 White or Caucasian Black or African American Asian or Pacific Islander
 American Indian/Native American Hispanic or Latino Other: _____
4. What is your hiker type? (please "X" one) Student Self-employed
 weekender ____ day hiker ____ thru-hiker ____ section hiker ____ multi-use hiker ____
5. How many miles have you hiked on the AT trail?
 a. _____ miles/this trip
 b. _____ miles/per year
 c. _____ miles (total miles)
6. I am interested in what you feel you have gotten from hiking the AT trail. That is, I would like you to think about the things you learned and the outcomes you received from hiking on the trail. Please tell me some of the outcomes that you received. Any others? (TRY TO GET AT LEAST 3-4... BUT ALLOW FOR MORE)

List of Outcomes: _____ Ranking: _____

7. Now, I want you to think about the importance of each of these outcomes. Which of the outcomes you mentioned would you say is the most important to you? Which is the next most important? (REPEAT TILL ALL ARE RANKED)

SECTION 2 – Laddering the Outcomes

Now, I am going to ask you about some outcomes that you mentioned. You should know that some of my questions will seem obvious or repetitive to you. It is not that I don't understand the obvious, it's just that I need to hear things in your own words to know exactly what you mean. Are you ready to begin?

OUTCOME #1:

Now you mentioned that (outcome #1) _____ was something that you got out of your AT experience. Why is _____ important to you? ...And why is that important to you?



THANK YOU FOR YOUR TIME!!