

Relationships Between Trip Motivations and Selected Variables Among Allegheny National Forest Visitors

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Abstract—To meet visitors' needs, managers must understand the motivations driving visitors to wilderness areas. This paper compares the motivations of different segments of Allegheny National Forest users. Factor analysis identified 5 motivation factors (social, escape, fun, nature and learning), with two items retained as single item dimensions (close to home and challenge). Findings highlight that wilderness and campground users were motivated to visit by the need for escape. Overnight visitors were more apt than day-users to indicate escape, fun and challenge as motivational factors for their trip. Repeat visitors were more likely than first time visitors to mention escape and close proximity to home as their motivations to visit.

Participation in outdoor recreation activities has increased dramatically over the past few decades, and the current growth rate has been projected to increase further. Traditional outdoor recreational activities, such as day-hiking and backpacking, are expected to show substantial increases (Ewert 1995). To meet visitors' needs and optimize their satisfaction, managers must be able to identify the motivations driving visitors to wilderness areas.

Researchers have attempted to study the underlying motivations for participation in various outdoor recreation activities. Early motivational studies generally employed open-ended questions to explore potential motivations. The open-ended responses were instrumental in the formulation of motivational constructs (Manning 1999). However, the majority of empirical research has built on Driver and his colleagues' conceptual and empirical work dealing with Recreation Experience Preference (REP) Scales. This work is based on the concept that recreation is more than participation in an activity, and should be viewed as an experience providing various rewards or outcomes to participants (Driver and Brown 1975). Understanding what people seek through recreation can provide useful guidance

to a variety of planning and management tasks, such as measuring supply and demand for recreation, developing management objectives, and preventing and managing conflicts between users. Practical application of this approach has been labeled "experience based management" and is part of the framework underlying the Recreation Opportunity Spectrum (Driver and Brown 1978).

Much research has been directed towards the development and testing of psychometric scales measuring the dimensions of recreation experience/motivation. Manfredi and others (1996) summarized the results of 36 different studies that have used REP scales. Their analysis generally supported the prevailing structure of motive domains (representing broad goal constructs) and scales (within-domain groupings representing dimensions of the broader goal construct). The analysis examined 108 of Driver's original 328 items (Driver 1983), representing 19 motivational domains. Crandall (1980) likewise assimilated 17 dimensions representing different types of motivations.

Individual studies have typically used smaller lists of items focused on domains hypothesized to be important for the particular activity and/or setting in question. Some of the more common motivational elements include escape, solitude, being close to nature, and social interaction. However, other elements have also been noted, including to relieve stress/reduce tension, recognition from others, to enjoy/learn about nature and family relations. Rosenthal and others (1982) examined the following eight motive domains for outdoor recreation: exploration, escape role overload, general natural experience, introspection, exercise, being with similar people, seeking exhilaration, and escaping physical stressors.

Participants have wide sets of motives and the range of motive importance varies across individuals and is dependent upon their goals (Mannell and Kleiber 1997). Empirical research has consistently shown that motivation dimensions differ for participants engaged in various activities. Motivations can also vary for participants in the same or similar activities. Graefe and others (1981) found that river users in two different areas responded similarly to factors related to learning/experiencing nature and stress release/solitude, but differed in their ratings of other motivational factors. Similarly, Knopf and Lime (1984) found that peace and calm and viewing scenery were ranked relatively highly among users of two rivers; however, the users differed on the importance of other motivational dimensions.

After studying rock climbers, Csikszentmihalyi (1977) concluded that they participated to experience the "flow"

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experience and to feel competent and in control (Levenson 1990). Another study of rock climbers also revealed motivations such as perceived competence and enhanced self-esteem (Iso-Ahola and others 1986). In an attempt to identify various motivations of mountain climbers at Mount Rainier in Washington state, Ewert (1985), indicated that climbers were motivated by challenge, catharsis, recognition, creative opportunities, locus of control and the physical setting. In a subsequent study of mountaineers at Mount McKinley, Alaska, Ewert (1993) identified only five factors: exhilaration/excitement, social aspects, image, aspects of climbing and catharsis/escape. McIntyre (1992) employed 16 items from Ewert's research to analyze the motivations of rock climbers and found six factors: recognition, creativity, physical setting, challenge, escape and control. In the case of mountain bikers, exercise was the most important reason for participating, followed by nature/solitude/scenery, which was ranked slightly higher than challenge/excitement (Vilter and others 1995).

Based upon a review of 17 motivation studies involving anglers, Fedler and Dittion (1994) deduced the following dimensions: general psychological and physiological, natural environment, social, fishery resource and fishing skill and equipment (Dawson 1996). However, among Delaware State Park visitors, escape/solitude, nature/harmony, nature/learning, fun/recreation and social/interaction were identified as key motive dimensions (Confer and others 1996).

An important factor to consider in the study of motivations is the effect of nonmotivational factors on motivations. Variables traditionally used as independent variables (i.e. those that might influence motivations) include past experience (in general and site specific), skill level, group type and demographics. For example, as indicated earlier, Knopf and Lime (1984) found that first-time and repeat users of two rivers differed on the importance of several motivational dimensions. Similarly, Schreyer and others (1984) concluded that motives for river running vary with level of experience and frequency of participation.

In the sample of Mount McKinley mountaineers, those who reported a high level of experience indicated intrinsic elements such as using the mind, expressing creativity, self-expression and helping others (Ewert 1993). Mountaineers with low levels of experience sought competition, skill development and escape from normal life.

Group composition variables such as group size and type also influence motivations to participate in outdoor recreation activities. Participants with low levels of experience and skill are more likely to be part of a structured group or use a commercial outfitter (Ewert and Hollenhorst 1989). The size of the group and whether the group consists of friends, family or strangers affect motivation and satisfaction with the chosen recreation activity (Schuett 1994). When comparing participants who belonged to a guided group and solo mountain climbers, Ewert (1993) found that guided group members associated high levels of motivation with exhilaration and accomplishment, while solo climbers preferred to indicate that their motivation was due to the risks involved. Overall, solo climbers were more concerned with catharsis/escape than any other motivational factors.

In sum, the literature indicates that motivations for participation vary among individuals involved in outdoor recreation

activities, and they are also influenced by the effects of nonmotivational factors. This paper examines the effects of selected variables on motivations among Allegheny National Forest users, notably users of the Hickory Creek Wilderness (HCW) and the adjacent buffer zones known as the Heart's Content Recreation and Scenic Areas.

Methods

The Hickory Creek Wilderness, located in northwestern Pennsylvania, encompasses 8,663 acres and features a secluded 11.2-mile loop trail. The buffer region (recreation and scenic areas) is coterminous to the HCW and is furnished with a campground (moderately developed), a day-use/picnic area and an old-growth forest with a short interpretive trail.

A combination of survey methods was used to collect the necessary data. A stratified sampling plan was developed to represent the major user groups of the national forest. Users of the Hearts Content Campground, Hearts Content Scenic Area and Hickory Creek Wilderness Area were contacted through an on-site survey during the 1997 summer season. Subjects completed a two-page personal interview and were asked to participate in a follow-up mail survey. The on-site survey response rate approached 99% ($n = 269$), with 94% of the respondents ($n = 253$) providing usable mailing addresses.

Adjacent landowners, equestrians, and other stakeholders that might have been missed in the on-site survey were sampled with a mail survey methodology. These additional groups were identified as follows:

1. Adjacent landowners were selected from tax rolls acquired from the tax assessor's office in the two counties adjacent to the study area (Warren and Forest).
2. Equestrian users were identified from a list of attendees to an equestrian management meeting held by the Forest the previous year.
3. Additional Wilderness users were identified through a trail register at the entrance to the Hickory Creek Wilderness.

Both mail surveys utilized a modified Dillman approach including three first-class mailings. The initial packet included a letter describing the study, an 8-page survey and a self-addressed, stamped return envelope. For visitors in the on-site sample, this initial mailing was sent approximately one to two weeks after the on-site interview. The second contact, a thank you/reminder postcard, was sent approximately two weeks after the initial mailing. A third and final contact composed of a complete survey package (letter, survey & return envelope) was sent about two weeks after the postcard reminder to those individuals who had not responded to the first two contacts.

Response rates for the mail surveys ranged from 61% for the follow-up to the onsite survey ($n = 155$) to 41% for the horse users ($n = 99$). About half of the adjacent landowners (47%, $n = 178$) and wilderness users sampled from the trailhead register (52%, $n = 88$) returned their questionnaires. No further attempt was made to contact nonrespondents.

Motivation was operationalized using 15 items measured on a 5-point Likert-type scale, ranging from 1 = not at all

important to 5 = extremely important. The items employed were based on the motivations literature, except for one item, "it is close to my home and easy to get to," which was included on the basis of local managers' perceptions of area use patterns. Nonmotivational variables included the type of user; first/repeat visit; trip type; and group type. To explore the potential motivation dimensions, a principal axis factor analysis with varimax rotation was employed. Reliability analysis was conducted to assist in interpreting the factor structure. Composite indices were developed for the motivation factors (computed as the mean values for those items assigned to each factor as discussed below).

For the purpose of analysis, the motivations were treated as dependent variables against four independent variables: user group; first/repeat visit; trip type; and group type. A series of one-way analyses of variance were conducted, with significance measured at the 0.05 level (2-tail significance). A Scheffe post-hoc test was used to determine significant differences in motivations across user groups. No post-hoc test was needed for the other independent variables showing significant differences in motivations because these variables were dichotomous.

Results

The sample was composed of five groups as follows: 29% of the respondents were wilderness users, 10% scenic area users, 17% campground users, 16% horse users and 28% adjacent landowners. About 41% indicated they were on their first visit to the area, while 59% were repeat visitors. Similarly, 74% were overnight visitors, while 26% were day-users. About 54% indicated they visited with their family members, 24% with friends, and 11% with friends and family, while 9% were alone. Table 1 summarizes the descriptive statistics and provides a general profile of the visitors.

The factor analysis of the motive items generated five factors explaining 57.5% of the total variance (Table 2).

Items loading highest on the first factor were related to social interaction or affiliation. These three items yielded a reliability coefficient of 0.80. Although this factor accounted for the most variance in the motivation items, it was actually the least important motive to the study respondents, with a mean importance value of only 2.49.

The second factor was dominated by items related to escape. Although two of these items ("to relieve tension" and "to get away from the everyday routine of life") showed weaker factor loadings, including these items in this factor produced the strongest scale reliability (alpha = 0.76) and seemed to make the most sense conceptually.

The strongest loadings for the third factor were for the items, "to have fun" and "to have a good time." The items, "to relieve tension" and "to get away from the everyday routine of life," also loaded moderately on this factor, suggesting that these are important elements of fun. However, the two fun-related items showed the strongest scale reliability by themselves (alpha = 0.80) and focused more clearly on the construct of having fun.

Items loading highest on the fourth factor were related to experiencing nature. The item, "to get away from the everyday routine of life," again loaded moderately on this factor, suggesting that nature provides a good escape from the routine. However, the maximum reliability (alpha = 0.81) was again found for the simpler factor based only on the two nature-related items. Experiencing nature was the most important motive to the respondents, as shown by a mean importance score of 4.56.

The final factor was dominated by two learning-related items, "to develop my knowledge" and "to learn about the countryside." These two items yielded a reliability coefficient of 0.74. One additional item, "opportunities to challenge myself," loaded moderately (0.401) on this factor. However, including this item in the factor lowered the scale reliability and complicated the interpretation of the factor.

In sum, most of the motivational items loaded cleanly on one factor, while four items failed to load clearly on any single factor. Two of these four items ("to relieve tension" and "to get away from the everyday routine of life") were assigned to factor 2 (Escape) based on their conceptual meaning and contribution to that factor's reliability. The remaining two items ("opportunities to challenge myself" and "it is close to my home and easy to get to") were used as single-item measures representing constructs different from those underlying the five motivation factors.

For the first independent variable, user group (wilderness, scenic area, campground, horse users and landowners), five of the seven motivational constructs showed significant differences at the 0.05 level (Table 3). Only the social and fun dimensions did not differ across user groups. Based on the mean values (a higher value indicates more importance of the motivation items), wilderness (mean = 4.67) and scenic area users (mean = 4.77) rated experiencing nature more important than landowners (mean = 4.39). The learning dimension was more important to scenic area users than to either adjacent landowners or wilderness users.

Campground users attributed the most importance to the escape dimension, followed by wilderness users, landowners, horse users, and scenic area users. Adjacent landowners indicated more importance than wilderness users for the motivation item, close to home. The final significant item,

Table 1—Profile of visitors.

Variables	Percentage (n)
User group	
Wilderness	29% (183)
Scenic area	10% (62)
Campground	17% (108)
Horse	16% (99)
Landowner	28% (178)
First Visit	
Yes	41% (111)
No	59% (157)
Trip Type	
Overnight	74% (175)
Day-user	26% (70)
Group Type	
Alone	9% (23)
Family	54% (143)
Friends	24% (65)
Family and friends	11% (29)
Other	3% (7)

Table 2—Factor loadings for motivations of Allegheny National Forest visitors.*

Questionnaire statement**	Factor 1 social	Factor 2 escape	Factor 3 fun	Factor 4 nature	Factor 5 learning
To be with people of similar interests	0.855				
To do things with other people	0.750				
To meet friendly people	0.634				
To get away from other people		0.857			
To be alone		0.742			
To relieve tension		0.429	0.455		
To get away from the everyday routine of life		0.356	0.364	0.350	
To have fun			0.793		
To have a good time			0.760		
To observe the beauty of nature				0.696	
To enjoy the sights, sounds and smells of nature				0.904	
To develop my knowledge					0.785
To learn about the countryside					0.666
Items not assigned to any factor					
Opportunities to challenge myself	0.165	0.360	0.101	0.002	0.401
It is close to my home and easy to get to	0.245	0.116	0.009	-0.005	0.168
Number of Items	3	4	2	2	2
Alpha	0.80	0.76	0.80	0.81	0.74
Eigenvalue	4.27	2.54	1.40	1.23	1.01
Mean Importance	2.49	4.00	4.09	4.56	3.14
% Variance Explained	28.48%	16.95%	9.37%	8.17%	6.71%

*Only factor loadings of 0.30 and higher are reported, except for unassigned items.

**Originally coded on a 5-pt Likert-type scale where: (1) = not at all important, (2) = somewhat important, (3) = moderately important, (4) = very important, (5) = extremely important.

Total % variance explained = 57.70%.

challenge, was considered most important by wilderness users, followed closely by horse and campground users, while the landowners and scenic area users rated challenge considerably less important.

In general, the adjacent landowners and wilderness users stood out as the most divergent groups, differing significantly from at least one other user group. The wilderness users placed great emphasis on escape, nature and challenge. The adjacent landowners placed the most emphasis on finding places for outdoor recreation close to home. The scenic area users were particularly interested in learning about the area, and were the least escape oriented. Conversely, the campers were the most interested in escape and differed significantly from both the scenic area visitors and landowners in the importance of escape.

First-time/repeat visit was the next independent variable examined. This variable was operationalized as “Is this your

first visit to the area?” Based on the ANOVA, three out of the seven motivational constructs reached significance at the 0.05 level (Table 4). The first significant dimension was learning. Those respondents who were first-time visitors attributed more importance to learning than repeat visitors. However, repeat visitors indicated more importance than first-time visitors for the escape dimension, as well as the single item, close to home.

Trip type, the next independent variable, was operationalized as “Is your trip today an overnight visit to the area or a day trip?” When ANOVA was conducted, four out of the seven motivational constructs reached significance at the 0.05 level (Table 5). Learning was more important to day users than overnight users. However, overnight users were likely than day users to attach more importance to escape, fun and challenge.

Table 3—Comparison of motivations between different user groups.*

Motivations	User groups					F value
	Wilderness	Scenic area	Campground	Horse	Landowner	
Nature Index ¹	4.67 ^a	4.77 ^a	4.65 ^{ab}	4.48 ^{ab}	4.39 ^b	6.00***
Learning Index ¹	3.06 ^a	3.7 ^b	3.33 ^{ab}	3.00 ^{ab}	3.05 ^a	3.61**
Escape Index ¹	4.16 ^a	3.65 ^b	4.26 ^a	3.83 ^{ab}	3.88 ^b	5.67***
Close to home ²	2.60 ^a	2.31 ^{ab}	2.77 ^{ab}	3.07 ^{ab}	3.10 ^b	3.89**
Challenge ²	3.29 ^a	2.68 ^{ab}	3.19 ^{ab}	3.2 ^{ab}	2.73 ^b	4.24**

*Only motivations showing significant differences are shown. Values shown are mean importance scores. Values with different superscripts are significantly different at the 0.05 level based on Scheffe's post hoc test.

**Significant at .01 level (2-tail significance).

***Significant at .001 level (2-tail significance).

¹Index.

²Single item.

Table 4—Comparison of motivations between first-time/repeat visitors.

Motivations	First visit		F value
	Yes	No	
Learning Index ¹	3.52	3.18	4.32*
Escape Index ¹	3.90	4.24	6.57*
Close to home ²	2.19	3.02	15.10**

*Significant at 0.05 level (2-tail significance)

**Significant at .001 level (2-tail significance).

¹Index.

²Single Item.

Finally, the group type variable was operationalized in five categories: alone, family, friends, family and friends, and other. Basically, this variable was employed to identify the composition of the visiting individual/group. Oddly enough, when ANOVA was conducted, none of the seven motivational constructs achieved significance at the 0.05 level. The closest dimension was fun, for which the *p* value was 0.06.

Discussion and Conclusions

Overall, the motivation dimensions (social, escape, fun, nature and learning) were consistent with prior research, and registered good reliability measures despite some indices containing only two items. The failure of two motivational items to fit cleanly within the factor structure is probably more of a methodological artifact than a substantive finding. The challenge item might have factored more cleanly if other challenge-related items had been included in the original list of motive statements. The “close to home” item is a new variable that is a more pragmatic concept and does not fit within the theoretical framework of the other motive constructs. Hence it is not surprising that this item did not factor neatly with the other motivational items.

Differences observed between the user groups were not surprising but did show some distinct aspects of the various groups. Scenic area users, who were essentially day users, were motivated to visit the HCW by the need to be around nature and learn about it. This was a logical finding as most of the scenic area visitors visited the area to see the old-growth forest. Also, many day-use scenic area visitors came with family members to picnic as well as to be in a relaxing environment. Campground and wilderness users were strongly motivated by the need for escape. Similarly, backpacking in the wilderness is a

Table 5—Comparison of motivations by type of trip.

Motivations ¹	Overnight	Day	F value
Learning Index ¹	3.22	3.60	4.55*
Escape Index ¹	4.21	3.79	7.71**
Fun Index ¹	4.28	3.97	5.65*
Challenge ²	3.31	2.84	3.97*

*Significant at 0.05 level (2-tail significance).

**Significant at 0.01 level (2-tail significance).

¹Index.

²Single item.

challenging feat and wilderness users indicated that challenge was an important motivation for visiting the HCW. Adjacent landowners and horse users were more likely to visit because the area was close to their homes and they had easy access to the sites. However, even these groups placed more importance on the other motives than on the fact that the area was “close to home.”

First-time visitors were motivated to visit by the need to learn about nature. This finding is not unusual, as first-time visitors are more likely to be curious about a new area/environment, in this case the old-growth forest. On the other hand, repeat visitors may lack the beginner’s curiosity and are more motivated to visit to escape the daily grind. Similarly, day users are likely to be transient visitors, who visit the area to learn something new. Overnight visitors are campers and backpackers, who are essentially escaping their normal routine and are motivated by the need for challenge as well as fun. Finally, contrary to previous research, data in this study do not support the relationship between motivations and group type/composition. This was an unusual finding.

In spite of the differences observed, it is also important to recognize the commonalities among the various user groups. For example, all groups tended to rate experiencing nature as their most important motive. Likewise, all groups sought to have an enjoyable time and concurred that social interaction was a relatively unimportant motive for their use of the forest.

Study findings demonstrate that people visit the Hickory Creek Wilderness and surrounding areas for varying reasons. This research gives managers the opportunity to learn about the different needs of their visitors, and act accordingly to optimize the quality of their experiences on the forest.

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