

Environmental Attitudes and Motivations of Korean Hunters¹

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狩獵人的 自然 環境 態度와 狩獵 動機¹

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ABSTRACT

This study examined the relationship between attitudes to the natural environment and motivations of Korean hunters. A self-administered mail-out questionnaire was sent to 1,000 hunters who were selected randomly from the file of approximately 15,920 hunting licenses in Korea in 1998. Among the returned questionnaires 550 valid questionnaires were analyzed for this study. The study identified three dimensions of motivation for hunting : Appreciation, Achievement and Social Aspect. The data for this study support that game management should be based on the premise that the motivations for hunting are diverse and that attitudes to the natural environment help explain differences in motivation for hunting.

Key words : environmental attitudes, motivations, Korean hunters

要 約

본 연구는 수렵인의 자연에 대한 심리 태도와 수렵 동기간에 연관 관계를 조사하기 위하여 수행되었다. 우편 설문지를 통해 약 15,920명의 수렵 면허 소지자들 가운데 1000명의 수렵인을 random 추출하여 자료가 수집되었다. 회수된 설문지 중 550개의 유효 설문지가 분석에 이용되었다. 자료의 분석 결과 수렵인의 수렵 동기는 자연 감상, 성취 그리고 사회적 인 측면 등의 세 부분으로 나눌 수 있었다. 또한 이들 세 측면의 동기들은 수렵인들의 자연 심리 태도와 깊은 연관을 가지고 있었다.

본 연구의 결과는 수렵 관리에 있어서 다양한 수렵동기를 고려하여야 한다는 사실을 확인하고 있으며 수렵인의 자연 심리 태도에 따라 수렵 동기가 차이가 있음을 설명하여 주고 있었다.

INTRODUCTION

Understanding the environmental attitudes and motivations of recreational hunters helps game managers to combine game management objectives with quality recreational hunting opportunities. Providing hunters with quality recreation oppor-

tunities is a major objective of game management but understanding the motivations of recreational hunters is still unclear (Decker and Condely, 1989). Purdy and Decker (1989) developed a scale of wildlife attitudes and values which helps to understand the motivations of recreational hunters. Most previous studies of recreational hunters, such

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as by Potter *et al.* (1973), Hautaloma and Brown (1979), Decker, *et al.* (1980), and Decker and Conelly (1989), suggest that the motivations of hunters are complex and multifaceted. Some previous studies, such as by Purdy and Decker (1989), identified the satisfaction with "catch success" as the main motivation for hunting but the majority of research suggests that hunters have more diverse motivations, in addition to and different from the motivation of "catch success" (Floyd and Gramann 1997; Hazel, *et al.* 1990; Vaske, *et al.* 1986).

Decker *et al.* (1987) hypothesized that most motivations for wildlife-related recreation can be combined to form three categories of recreationists : (1) affiliation oriented wildlife recreationists who seek an activity primarily to accompany another person and to enjoy their company or to strengthen personal relationships, (2) achievement-oriented wildlife recreationists who seek an activity primarily to meet some standard of performance, and (3) appreciation-oriented wildlife recreationists who seek an activity to achieve a sense of peace, belonging and familiarity, and to reduce stress. Decker *et al.* (1987) proposed that a single motivational type, which they call the "primary motivational motivation", tends to be most influential motivation for hunting although an individual may also exhibit combinations of all three motivational types. McFarlane (1994) argues that a person's main motivation for wildlife recreation may shift over time from an achievement orientation to an appreciation orientation. An understanding of the motivations of hunters can help wildlife managers in several ways. For example, managers frequently have to decide on the type and number of outdoor recreation activities, including hunting, that should be provided in a specific area. Knowledge of the motivations of hunters can help managers to identify different ways to control hunters in order to reduce competition between hunters and to minimize conflict with other recreationists. Controls based on a positive

reinforcement of behavior by hunters may be particularly effective.

In the present discussion the hypothesis is posed that attitudes to the natural environment help explain differences in the motivation for hunting. The present study tests this hypothesis by means of a causal model in which motivation for hunting is the dependent variable and attitudes toward the natural environment the independent variables. This study also theorizes that people with different attitudes to the natural environment have different expectations from an outdoor recreational experience. For expediency the investigator keep the model simple while recognizing that attitudes to the natural environment are diverse and complex and that the model is not exclusively causal nor does it consider confounding effects by antecedent or intervening variables. The investigator use measurement scales in the analysis of our data. Working hypothesis is founded on the seminal work some twenty five years ago by Stankey (1973) who identified an objective way of making wilderness management decisions based on differing views by wilderness campers of the acceptability of the number and type of encounters with other users, user regulations, and facilities in wilderness areas, such as signs and other human made features. In a similar vein, Shafer and Hammitt (1995) argue that environmental attitudes are related positively to the specificity with which resource-use conditions in a designated area are identified.

METHODS

1. Respondents and Data Collection Technique

A nation-wide sample of 1,000 hunters was selected randomly from the file of approximately 15,920 hunting licenses in Korea in 1998. Self-administered questionnaires were mailed in May, 1999, and with a reminder second mailing a total of 618 questionnaires were returned for a response rate of 72% adjusted for undeliverable and unusable questionnaires. The 72% of response rate in this

study was much higher than response rates indicated previous studies. This high rate may attribute that hunters are special population who have enough intention to involve for this study. The questionnaire included information on : number of days participated in hunting, attitudes to environment and nature, motivations for hunting, and user profile demographics. To measure the three motivational orientations of hunters, described earlier with reference to the work of Decker *et al.*(1987), respondents were asked to indicate on a semantic differential scale (consisting of five points ranging from 'greatly detracts' to 'greatly adds') how important each scale item was to their satisfaction of hunting. The questionnaire also included a Korean language version of the New Environmental Paradigm (NEP) scale (Dunlap and VanLiere 1978) which has been employed widely to measure people's attitude toward the natural environment. The NEP scale has 12 items each with five semantic differential answer categories ranging from 'strongly agree' to 'strongly disagree.' The translated Korean NEP culturally modified some of the items of the original NEP.

RESULTS

The mean age of respondents was slightly over 50 years, with a range from 30 to 75 years. All respondents were male. Most were high school graduates (52.5%) or university or college graduates (22.1%). The large majority (70.6%) live in an urban or suburban area. A majority (54.6%) stated that they had ten or more years of hunting experience. During the 1998/99 hunting season from November, 1998, to February, 1999 (inclusive) the respondents reported an average of slightly over 30 days of hunting (range 1 to 120 days).

1. Motivation Items and Domains

Factor analysis (Table 1) grouped the scale items into three factors with eigenvalues greater than one) which had high factor loadings on items similar to the "appreciative", "achievement", and "social" motivational orientations found by Decker *et al.* (1987) and Decker and Canaille (1989) : Factor 1, the "achievement" motivational orientation (22.13% of the total variance), Factor 2 the "appreciation" motivational orientation (18.14% of the total

Table 1. Factor and mean scores for items measuring hunting motivations^a.

Item	mean scores ^b	Factor ^c		
		I	II	III
Getting shots at wildlife	3.86	.54	.37	.15
Having an opportunity to use my hunting equipment	2.16	.54	-.29	.46
Showing my family and friends a trophy wildlife I shot	2.39	.79	.02	.02
Putting "meat in the freezer"	2.75	.73	.02	-.16
Using skills such as stalking and tracking	3.19	.66	.02	.02
Getting outdoors for a chance to enjoy the natural environment	3.95	.02	.78	.02
Getting away from everyday problems and having a chance to relax	3.90	.11	.50	.13
Seeing wildlife	3.85	.02	.66	.26
Being with hunting companions	3.80	.02	.35	.68
Companionship of family/relatives during the hunt	3.78	.02	.22	.81
Eigenvalue		2.21	1.71	1.48
Percentage variance		22.13	18.14	9.8

^a Scale reliability : Cronbach's alpha = 0.68. The explained 54.00% of variance in the scale (n=598)

^b Based on a scale where 5=greatly adds to hunting enjoyment, 1=greatly detracts from hunting enjoyment

^c Items that have a high loading on a factor are in underlined

variance), and Factor 3 the "social" motivational orientation (9.8% of the total variance).

2. Environmental Attitudes and Hunting

Motivations

To explore associations between environmental attitudes (the NEP scores) and motivation for hunting (the three factors with eigenvalues greater than 1 described above) Pearson correlation coefficients were calculated (Table 2). The correlation between the "appreciation" motivational domain and NEP ($r=0.231, p=0.001$) suggests a positive relationship between NEP and motivation although admittedly only 5% of the variance is explained. No significant correlations were found between NEP and the "achievement" and the "social" motivational domains. This confirms earlier findings by Lucas (1980), Shin (1993), Stankey (1973), Young (1978), and Young and Crandall (1984) which indicate that a large number of wilderness users would be satisfied with something less than the "pure" wilderness as per the legal definition and would instead like to have conveniences which ordinarily are not available in wilderness areas. These studies show, as does our study, that users with strong wilderness attitudes were most satisfied when there are few facilities, regulations, or users, and that users with low wilderness attitudes would be satisfied in an area that has more facilities, users and wilderness regulations.

Table 2. Correlations Between NEP and Motivation Scale scores Motivation Categories.

Motivation Dimension	N	r	p
Appreciation	534	.231	.000
Achievement	530	.070	.108
Social Aspect	538	.024	.581

We introduced previous hunting experience, education level, place of residence, and age (Table 3) as controls since in previous studies these variables have helped to explain outdoor recreation

use frequencies and use patterns (Young 1983; Watson *et al.* 1991). For hunters 30 to 39 years old, motivational scores and NEP environmental attitude scores were significantly positively correlated, confirming findings from earlier studies (Hendee *et al.* 1990; Stankey 1980) in which age and environmental attitudes were found to be positively correlated. Since younger hunters tend to be better educated and be more aware of environment issues than older hunters (Young 1978), those with high environmental attitude scores (i.e., the younger hunters) also have high "appreciation" motivational orientation scores, confirming the finding by Shin (1993) that environmental attitude and appreciation of nature are positively correlated. For hunters with higher education, there was no statistically significant correlation between appreciation motivations and NEP environmental attitudes. However, for hunters with elementary or secondary school education there was a statistically significant relationship between the two variables, confirming

Table 3. Relationship between Appreciation Motivational Dimension and NEP scores by Some Variables.

Variables	N	r	p
Age (years)			
30 - 39	48	.609	.000
40 - 49	240	.137	.034
50 - 59	154	.203	.018
over 60	87	.216	.061
Hunting Experience			
Less than 5 yrs	154	.298	.000
5 or more yrs	380	.215	.000
Education			
Secondary	394	.244	.000
Univ. or College	120	.206	.024
Graduate or Professional Degree	14	.173	.554
Place of Residence			
Urban	170	.110	.154
Small city or Large town	200	.233	.001
Small town	88	.351	.001
Rural area	70	.389	.001

the findings by Young (1978) who, although he studied wilderness campers not hunters, found that higher educated and involvement in environmental issues were positively correlated and that environmental attitudes were negative correlated with level of education.

For hunters living in urban areas, there was no statistically significant correlation between appreciation motivation and NEP scores. However, for hunters living in a small city, large town, or rural area, there was a significant relationship between the two variables. The correlation of the appreciation motivation for hunting and the NEP environmental attitude score, controlling for place of residence, does not agree with the previous study by Shin (1993) which indicated that respondents' place of residence did not significant correlated with their environmental attitudes nor with any other environmental related values such as self-actualization.

DISCUSSION

The data support that game management should be based on the premise that the motivations for hunting are diverse and that attitudes to the natural environment help explain differences in motivation for hunting. The study identified three dimensions of motivation for hunting : Appreciation, Achievement and Affiliation. The "Appreciation" motivation dimension was significantly positively correlated with the attitudes by hunters to nature and the environment as measured by the NEP scale. Individuals with high environmental attitude scores tend to have a strong "appreciation" motivation for hunting. "If we know someone's feeling about something, we assume his or her behavior toward it will be consistent with his or her expressed attitudes" (Stankey, 1973). Although a person with a high NEP score tends to appreciate nature and the environment more deeply and more significantly than a person with lower NEP scores, this generalization may not always be true. For example, individuals with high NEP scores may not

necessarily show a high political support for environmental issues. More empirical information would be needed to establish a definitive cause-and-effect relationship between NEP and environmental commitment. Although correlation coefficient indicated a positive relationship between the "appreciation" motivation and attitude to nature and the environment, the two variables are not necessarily related causally. In other words, it cannot be argued conclusively that a high "appreciation" motivation is caused by a high attitude to nature and the environment.

To explore further the relationship between motivation of hunters and attitudes to nature and the environment, respondents were divided into several sub-groups by personal profiles such as age, education level, hunting experience, and place of residence. For relatively young (30 - 39 years) respondents, elementary or secondary school graduates, and non-urban dwellers, the relationship between the two variables was much more significant than the other respondents. For the hunting experience profile, regardless how many years they involved in hunting, all hunters showed strong relationship.

There no doubt are other variables, not studied here, which also influence the motivation for hunting and attitudes to nature and the environment and which could perhaps more accurately predict the relationship between the two sets of variables. Such predictor variables may include a person's sense of destiny, belief in a supreme being, man-nature ethical relationships, and morality, but to our knowledge such variables are almost never included in recreation surveys, perhaps because they may be construed to be unscientific. Yet it may well be that it is precisely variables of this type which are at the root of attitudes to nature and the environment. This would indeed be a worthy area of further research to understand better not only recreational hunting and game management but the very essence of our entire set of relationships to the environment.

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