Measuring Leisure Motivation: A Meta-Analysis of the Recreation Experience Preference Scales

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One approach to studying the motivations for leisure is to focus on the desired
goal states that are attained through participation in leisure. The Recreation
Experience Preference (REP) scales were developed for measuring these goal
states. In an attempt to provide a summary integrative analysis of the structure
of the REP scales, the present study conducted a meta-analysis of 36 studies
that have used REP items. The studies were used to obtain population estimates
of correlations between scale item pairs. Correlations were then used as input
to confirmatory factor analysis that tested the structure of domains (item group-
ings that represent a broad goal construct) and the structure of scales (within-
domain item groupings that represent dimensions of the broader goal con-
struct) established in previous research. Results provided support for the *a priori*
domain and scale structures. Inter-item correlations were computed for do-
mains and scales and compared "within" and "between" clusters. The results
show high average inter-item correlations within scales and domains and rela-
tively low average correlations between domains and scales. Variability of inter-
item domain correlations due to response scale, instruction set, geographic
location of study, and type of recreation area visited was tested. Overall consis-
tency in domains and scales was shown. Recommendations are made to help
assure appropriate applications and advance refinement of the REP scales.

KEYWORDS: *motivations, needs, experience based management, recreation experience
preference*

Introduction

A topic of central concern in leisure research is the motivations for
leisure. This is a key area because it helps determine why people engage in
leisure behavior in the manner they do, and it assists in understanding the
consequences of leisure engagements. Of more immediate importance, in-
formation about motivations for leisure can help practitioners develop pro-

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grams that have the greatest likelihood of minimizing conflicts between users and of yielding human benefits. One line of leisure motivational research, known as the "experiential approach," was introduced in the late '60s by Driver and Tocher (1970) and was extended in a number of subsequent studies (Driver & Brown, 1975; Driver & Knopf, 1977; Haas, Driver, & Brown, 1980; Knopf, Driver, & Bassett, 1973; Manfredo, Driver, & Brown, 1983). The experiential approach suggested that recreation should not be viewed merely as an activity such as hiking, fishing, camping, etc. Instead, recreation should be conceptualized as a psychophysiological experience that is self-rewarding, occurs during nonobligated free time, and is the result of free choice.

A central focus of this research has been development of psychometric scaling that could be used to measure the dimensions of people's recreation experience. These have become known as the Recreation Experience Preference (REP) scales (Driver, 1977, 1983). In this paper, we provide summary analysis of research used in REP scale development. Following meta-analysis procedures, we examined results from 36 different studies that used the experience preference items. Our intent was to present an item bank useful for application in future studies that examine the basis of leisure.

Theoretical Background

The REP scales were developed within the context of motivation theory. Early conceptualization (Driver & Tocher, 1970; Knopf et al., 1973) suggested that recreation activities are behavioral pursuits that are instrumental to attaining certain psychological and physical goals. According to this view, people pursue engagement in recreation when a problem state exists; when an existing state does not match a preferred state (Knopf et al., 1973). For example, stress caused by a person overloaded with day-to-day responsibilities might motivate that individual to choose to go fishing (a recreation behavioral pursuit) because it is instrumental in attaining temporary escape from stress and therefore fulfills a motivating force (Knopf et al., 1973; Manfredo, 1984; Wellman, 1979).

Following this theoretical framework, the recreation experience was defined from a psychological perspective as the "package" or "bundle" of psychological outcomes desired from a recreation engagement (Driver, 1976; Driver & Brown, 1975; Driver & Knopf, 1976). The experience holds the explanation of why people engage in recreation, gives guidance in understanding what people want from recreation, and offers insight into how it might benefit them.

Research in the mid-1970s was guided by a strong interest in demonstrating the managerial relevance of psychological outcomes. The focus of research was to understand how basic motivation constructs (psychological outcomes) influence people's choice of activities and settings. Improved understanding of this relationship would assist in clarifying the "product" that recreationists seek. It was argued that this information could be used in a

wide array of planning and management tasks such as clarifying supply and demand, developing management objectives, avoiding conflict, and identifying recreation substitutes.

Much of the research that explored the psychological outcomes-setting-activity relationship was guided by expectancy-valence motivation concepts introduced by Lawler (1973). Lawler proposed that behavior in the work place is a function of both ability and motivation. Motivation was viewed as a hierarchy of instrumental and terminal expectations. Instrumental expectancies describe the relationship between effort (e.g., absentee rate, production rate) and performance outcomes (e.g., more pay, more praise). Instrumental expectations are important because they lead to terminal expectancies that are valued, long-term personal goals (e.g., social recognition, family solidarity, high social affiliation). This framework readily fit the experiential approach which suggested that unconstrained choice (i.e., holding ability constraints constant) is a function of the expectation that efforts to recreate (e.g., spending time and money) will lead to performances (i.e., engaging in certain activities in certain settings) which in turn will lead to valued psychological outcomes. While this provided a useful framework for describing relationships, it should be noted that the expectancy-valence formulation never materialized as a strong focus of empirical investigations using the experiential approach in recreation.

These concepts served as a basis for the proposal that recreation professionals should consider four levels of demand for recreation: settings, activities, recreation experience outcomes, and enduring personal and social benefits (Driver & Brown, 1975). These ideas also spawned development of the Recreation Opportunity Spectrum (ROS) (Driver & Brown, 1978; Brown, Driver, & McConnell 1978) and the Recreation Opportunity Planning System (Driver, Brown, Gregoire, & Stankey, 1987). ROS proposes a typology of recreation opportunities for recreation professionals to consider in planning and management. The range of opportunities varies according to the combination of experiences, settings, and activities made available by management.

Research using the REP scales might be categorized into one of six types. The first focused on describing and comparing the experience preferences of participants in specific recreation activities (Driver, 1976; Driver & Cooksey, 1980; Knopf, 1983; Knopf et al., 1973). The second attempted to empirically derive "experience types," homogeneous subsets of recreationists whose similarity was based on commonalities in desired experience preferences (Brown & Haas, 1980; Haas et al., 1980; Haas, Driver & Brown, 1981). The third was directed toward establishing the relationship among experience setting, and activity preferences (Ballman, Knopp, & Merriam, 1981; Brown & Ross, 1982; Knopf, Peterson, & Leatherberry, 1983; Manfredo, Brown, & Haas, 1980, Manfredo & Larson, 1993; McLaughlin & Paradice, 1980; Virden & Knopf, 1989). The fourth type of study focused on the relationship between nonleisure conditions and experience preferences

(Knopf, 1976). The fifth attempted to explore the relationship between ex-perience preferences and basic subject characteristics such as personality traits (Driver & Knopf, 1977), and values (Manfredo, Sneegas, Driver, & Bright, 1989). The sixth area is methodological research dealing with devel-opment and testing of the REP scales, which is the primary focus of the present study (Manfredo, 1984; Schreyer, Knopf, & Williams 1985; Schreyer & Roggenbuck, 1978; Stewart, 1992; Stewart & Carpenter, 1989; Williams, Ellis, Nickerson, & Shafer, 1988; Williams, Schreyer, & Knopf, 1990).

REP Scale Development

The development of the REP scales occurred in two phases. The first phase focused primarily on identifying scales that would comprehensively measure the concepts of interest. This phase was guided by concerns about managerial relevance, content validity, and reliability. To ensure a basis in psychological theory and to achieve content validity, items were identified by reviewing the personality trait and motivation literature to determine the types of needs and motivations that might influence recreation. Items were then developed through brainstorming or adaptation of existing psycho-metric scales that might measure these concepts. Item development was also achieved through considerable open-ended qualitative discussions of motives with recreationists and by reviewing the recreation literature. Subjective groupings of items were tested and refined using cluster analytic procedures. The rule used in scale construction was to ensure that the average inter-item correlation was .4 or greater and that Cronbach's alpha, a reliability measure that is theoretically equivalent to all possible split half measures, be .60 or greater (Driver, Tinsley, & Manfredo, 1991).

The REP scales available in Driver (1983) are grouped into domains that comprise scales which were shown by hierarchical clustering techniques to be empirically related. There are 19 domains represented by the REP scales.

The second phase was directed toward establishing scale reliability and testing the validity of the scales for use in measuring the desired experiences of recreationists. Evidence in support of the scales emerged from patterns of consistency in item grouping (using cluster analysis) across numerous studies. These patterns were found in studies that focused on different types of recreationists, in different areas of the United States, using slightly differ-ent response scales.

Other studies focused specifically on methodological issues. For example Tinsley, Driver and Kass (1982) examined the concurrent validity of the REP scales, concluding that the scales were acceptable in this area. In another study, Rosenthal, Driver, and Waldman (1982) used a multitrait-multimethod analysis to establish construct validity for seven of the eight REP scales. Graefe, Ditton, Roggenbuck, and Schreyer (1981) compared REP item groupings that were empirically derived in different studies. They deter-

mined high consistency for factors related to learning/experiencing nature and stress release/solitude; however, other factors varied somewhat across studies.

Studies by Manfredo (1984), Tinsley, Driver, Bay, and Manfredo (1986), and Williams et al. (1988) suggest that time of survey completion may have an influence on an individual's item responses although group means do not vary across time. These studies suggest there may be problems when asking people to recall what outcomes were important when they made their decision to recreate in a specific activity. One explanation is that responses obtained shortly after an experience are a reflection of experience attainment instead of experience preferences, although that explanation requires further exploration.

While these studies examine reliability and validity issues of the REP scales, a summary analysis across several studies would address problems of sampling error that cannot be addressed in individual studies (Hunter, Schmidt, & Jackson, 1982). Cooper and Lemke (1991) noted that an integrative research review of a topic is appropriate after about 40 empirical studies are conducted. Furthermore, Beaman (1991) compared traditional review methods with meta-analysis procedures and concluded that meta-analysis is preferable. Meta-analysis refers to a general procedure and group of analytic techniques that allow statistical analysis of results obtained in several different studies. As noted by Miller and Cooper (1991), "Meta-analytic reviews can achieve greater precision, objectivity, and replicability than narrative reviews" (p. 243). Given the need for and appropriateness of a summary integrative analysis, we conducted a meta-analysis of studies using the REP scales.

Mullen, Salas, and Miller (1991) suggested that meta-analysis can be used to answer three general analytic questions: (1) what is the typical study outcome; (2) what is the variability among study outcomes; and (3) what is the explanation for the variability? In this study, we address each of these questions.

Methods

Data were obtained from 36 different studies that applied the REP scales in the mid- to late-1970s. Table 1 lists the studies, details of the methods used in them, and a description of the population sampled. We chose these 36 studies for inclusion in our analysis because they all employed similar methods and included a large number of REP items available from Driver's (1983) item bank. Many studies that have employed the REP scales have used a very restrictive inventory of items. Another reason we chose these studies is because of logistical constraints. Our meta-analysis required the original data sets since computation of an inter-item correlation matrix was necessary. Data sets for all 36 studies were complete and readily available, and therefore included in our analysis. Our analysis strategy was to (a) estimate the population correlation coefficient for all item pairs; (b) using a matrix of esti-

TABLE 1
Description of Studies Included in Meta-Analysis

Name of Area	Location	Date	Time of Year	Response Scale[1]	Response Set[2]	Type of Area[3]	Number of Subjects
Arkansas River (onsite)	Colorado	1978	Summer	Satisfaction	Trip	RN-SP	109
Arkansas River (onsite)	Colorado	1978	Summer	Satisfaction	Trip	RN-SP	155
Arkansas River (mailback)	Colorado	1978	Summer	Satisfaction	Trip	RN-SP	510
Aspen & Crested Butte	Colorado	1978	Summer/Fall	Experience	Trip	RN-SP	148
Bridger Wilderness	Wyoming	1978	Summer	Valence	Trip	P	122
Denver Metro Area	Colorado	1975	Year Long	Importance	Activity	U-R	199
Eagles Nest Wilderness	Colorado	1977	Summer	Satisfaction	Trip	P	253
Fitzpatrick Wilderness	Wyoming	1978	Summer	Valence	Trip	P	81
Flat Tops Wilderness	Colorado	1977	Spring	Importance	Activity	P	125
Fort Collins & Estes Park	Colorado	1979	Summer	Importance	Activity	U-R	176
Glenwood Springs	Colorado	1979	Summer	Satisfaction	Activity	RN-SP	97
Huron River	Michigan	1976	Summer	Importance	Activity	RN-SP	1924
Indian Peaks	Colorado	1977	Spring	Satisfaction	Activity	P	345
Indian Peaks	Colorado	1978	Winter	Satisfaction	Activity	RN-SP	107
Indian Peaks	Colorado	1979	Year Long	Satisfaction	Activity	RN-SP	163
Joyce Kilmer Shining Rock Wilderness	North Car.	1978	Summer	Satisfaction	Trip	P	80
King Range	California	1979	Summer	Importance	Activity	P	225
Linville Gorge Wilderness	North Car.	1978	Fall	Satisfaction	Activity	P	249
Little Sahara	Utah	1978	Year Long	Satisfaction	Activity	P	429
Maroon Bells-Snowmass Wilderness	Colorado	1978	Year Long	Experience	Trip	P	254
Maroon Bells-Snowmass Wilderness	Colorado	1979	Summer	Satisfaction	Trip	P	75
Maroon Bells Backcountry	Colorado	1978	Summer/Fall	Experience	Activity	P	166
Maroon Bells Snowmass Backcountry	Colorado	1979	Summer	Experience	Trip	P	185

TABLE 1 (Continued)

Name of Area	Location	Date	Time of Year	Response Scale[1]	Response Set[2]	Type of Area[3]	Number of Subjects
Oak Creek Canyon	Arizona	1977	Year Long	Satisfaction	Activity	U-R	472
Oak Creek Canyon	Arizona	1978	Year Long	Satisfaction	Activity	U-R	196
Popo Agie Primitive Area	Wyoming	1978	Summer	Valence	Trip	P	61
Rawah Wilderness	Colorado	1977	Summer	Experience	Trip	P	203
Shelbyville Lake	Illinois	1978	Summer	Satisfaction	Activity	U-R	1567
Shenandoah National Park	Virginia	1978	Summer	Satisfaction	Activity	P	288
Shoshone National Forest	Wyoming	1978	Summer	Satisfaction	Activity	RN-SP	174
Sierra National Forest	California	1978	Summer	Importance	Activity	RN-SP	297
Sierra National Forest[4]	California	1978	Summer	Experience	Activity	RN-SP	1050
Sierra National Forest[4]	California	1978	Winter	Importance	Activity	RN-SP	593
Upper Colorado River	Colorado	1977	Summer	Satisfaction	Activity	RN-SP	308
Vermont Backcountry Hikers	Vermont	1979	Summer/Fall	Satisfaction	Activity	P	427
Weminuche Wilderness	Colorado	1977	Summer	Experience	Trip	P	306

[1]Four different Response Scales were used in the studies analyzed here: (1) a "satisfaction" scale with end points Strongly Adds to Satisfaction - Strongly Detracts from Satisfaction; (2) an "importance" scale with end points Not at All Important - Very Important; (3) a "valence" scale that asked whether or not the outcome would add to or detract from satisfaction (as in 1) that was used in combination with a scale that asked how likely each outcome was; (4) an "experience" scale that asked whether the outcome added to or that detracted from the experience.

[2]Response Sets were divided into two types, those that asked subjects to respond with regard to the trip during which they were interviewed, the "trip specific" set and the "activity specific" set that asked subjects to respond with regard to a specific activity in which that they had engaged .

[3]Type of Area visited by subjects studied was divided into three types based on the Recreation Opportunity Spectrum; primitive (P); semi-primitive: to roaded natural (RN-SP); and rural to urban (U-R).

[4]These two studies only differed on response scale used.

mates of population correlations, conduct confirmatory factor analyses to test
the item groupings of the REP domains and scales; (c) determine mean
inter-item correlations across studies, and (d) test for variability in data struc-
ture across the 36 studies by selected variables.

Estimating Population Correlations for Item Pairs

Following procedures proposed by Hedges and Olkin (1985), we used
the following Fisher's r-to-z transformation to provide an unbiased estimation
of the population correlation coefficient of item pairs. This weighted for-
mation for correlations was used in all analysis presented.

$$z = \sum_{i=1}^{K} (n_i - 3)z_i \Big/ \sum_{i=1}^{K} (n_i - 3k)$$

where

k = number of studies
n_i = sample size in the ith study
$z_i = \tanh^{-1} r_i$
r_i = correlation of item pairs in the ith study
z = variance-weighted average z_i.

The REP scales that are available in Driver (1983) contain 328 items,
yet the entire list was not used in any of the 36 studies. Typically, a subset of
these items was used, depending on the study objectives. Consequently, the
number of correlations available from the 36 studies for estimating a popu-
lation correlation varied by the specific item pair examined. We choose to
eliminate all item pairs that had fewer than four correlations available for
estimating a population correlation.

Confirmatory Factor Analysis

The matrix of population correlations was used as input to a confirm-
atory factor analysis routine available in LISREL (Jöreskog & Sorbom, 1989).
Two analyses were conducted; the first to test the structure of the entire 19
domains, the second to test the scale structure within domains. Confirmatory
factor analysis for scales was conducted only for domains that were repre-
sented by two or more scales.

We used an unweighted least squares (ULS) solution because it is most
appropriate when dealing with a nonpositive definite data matrix, which was
the case in our study (Wothke, 1993). The ULS approach allowed for inter-
pretation of the root mean square residual (RMSR), goodness of fit index
(GFI), and the factor loadings for each variable of the a priori dimension or
scale.

Estimates Of Mean Inter-item Correlations

Following factor analysis, mean inter-item correlations were computed across all studies that contained two or more items from a domain. To illustrate the discriminant validity of the scales, average inter-item correlations were computed between and within domains and scales.

Variability Of Inter-item Correlations Across Studies

To examine the variability in the distribution of sample inter-item correlations (obtained from the 36 studies), we tested for differences due to response scale (response format), instruction set, geographic location, and type of recreation area visited using the LISREL procedure for multi-sample analysis (Jöreskog & Sorbom, 1989). The multi-sample procedure in LISREL is used to test the equality of factor loadings (referred to as Lambda Matrices in LISREL) for different groups within the following factors: (a) response scale, (b) instruction set, (c) geographic location, and (d) type of area. Model parameters are taken as an indication of the fit of one model for all groups within a factor tested.

Table 1 shows that four different response scales were used in the 36 studies analyzed: (a) a satisfaction scale with end points "Strongly Adds to Satisfaction" and "Strongly Detracts from Satisfaction;" (b) an importance scale with end points "Not At All Important" and "Very Important;" (c) a valence scale that asked whether or not the outcome would add to satisfaction, which was used in combination with a scale that asked how likely each outcome was; and (d) an experience scale that asked whether the outcome added to or detracted from the experience. Instructional sets were divided into two types: the trip specific set, which asked subjects to respond to items while thinking about the trip during which they were interviewed and the activity specific set, which asked subjects to evaluate the experience preferences with regard to a specific recreation activity. Geographic location had two categories: studies east and west of the Mississippi River. The type of area visited was divided into three classes: primitive, semi-primitive to roaded natural, and rural to urban.

Because of missing pair-wise correlations for items, comparisons of the factor structures were possible only for the following data splits: Response Scale (satisfaction versus importance); Instruction Set (trip specific versus activity specific); Geographic Location (east versus west); and Type of Area (rural to urban versus semiprimitive to roaded natural). Items with missing pair-wise correlations within each domain were excluded from analysis. The unweighted-least-squares method of estimation was used.

Results

Of the 328 items available in the REP scale item pool (Driver, 1983), 108 remained for analysis in this study and resulted in 5,778 correlations.

LISREL analysis is a relatively new technique in the social sciences and conventions regarding its use are still formative. Typically, the three statistics used to assess the confirmatory factor analysis models are Chi-square statistic, root mean square residual (RMSR), and the goodness of fit index (GFI). Although we report Chi-square, we do not recommend interpretation of that statistic in our study. The Chi-square statistic is influenced by sample size (Bollen, 1989; Jöreskog, 1993). Furthermore, Bollen stated that the Chi-square statistic is not accurate when a correlation matrix rather than a co-variance matrix is analyzed with equality constraints as was done in our model. There is a moderate degree of discrepancy regarding acceptable levels of GFI and RMSR. For example, Jöreskog (1993) suggests GFI ≥ .97; Mulaik, VanAlsteine, Bennett, Lind and Stellwell (1989) suggest GFI ≥ .93; Tippets (1992) suggests GFI ≥ .90; while Church and Burke (1994) suggest conventional standards range from the high .80s to the .90s. We adopt the less restrictive criteria of GFI in the high 80s and 90s and RMSR approaching .08. In defense of using these criteria we note Bollen and Long (1993) who state, "In some areas where little previous work exists, less demanding standards may be acceptable than in other areas with extensive experience" (p. 8).

Factor analysis for the domain structure resulted in a RMSR of .079 and a GFI of .93. The Chi-square was 15,890.23 with 5607 degrees of freedom. Overall, this indicates a good fit of the domain structure for the data analyzed. The domain factor loadings were generally quite high; there were 23 loadings between .8 and .89; 38 loadings between .7 and .79; 28 loadings between .6 and .69; 13 loadings between .5 and .59; and only 5 loadings between .40 and .49. The only loading below .4 was .38 for an item in the Social Recognition scale of the Achievement/Stimulation domain.

Results of the 11 within domain confirmatory factor analyses (see Table 2) also revealed that the scale structures provide a good fit for the data. GFI ranged from .980 to .999 and Root Mean Square Residuals ranged from .057 to .006. Furthermore, only 4 of the scale factor loadings were below .6, with 70 of the loadings at .7 or greater.

A comparison of mean correlations between and within domains and scales illustrates the discriminant validity of these measurement instruments (see Table 3). The grand mean of inter-item correlations within domains was .54 and the grand mean of correlations between domain items and items outside the domain was .26. Similar results were found for scales; the within domain grand mean was .58, and the grand mean for correlations with items outside the domain was .26.

Overall, the analysis showed the proposed factor structures provide a good fit for the data across response scale, instruction set, geographic location, and type of recreation area (see Tables 4, 5, 6, 7). In no case does both the GFI and RMSR indicate an unacceptable fit. All GFIs are in the high 80s and 90s, and RMSR is only slightly high in three cases that are tests for differences due to type of recreation area; Achievement (RMSR = .102), New

TABLE 2
Results of LISREL Confirmatory Factor Analyses for Recreation Experience Preference Domains and Scales[1]

Domains Scales	Domain analysis	Scale analysis				
	Domain factor loading	Scale factor loading	Root mean square residual	GFI	Chi square	DF
ACHIEVEMENT/STIMULATION			.054	.986	473.1	114
Reinforcing Self-Image						
1a To gain a sense of self-confidence.	.72	.75				
1b To develop a sense of self pride.	.71	.78				
1d To show yourself you could do it.	.62	.74				
Social Recognition						
2a To have others think highly of you for doing it.	.51	.76				
2b To show others you can do it.	.55	.83				
2f To make a good impression on others.	.38	.61				
Skill Development						
3a To become better at it.	.66	.77				
3b To develop your skills and abilities.	.74	.83				
Competence Testing						
4a To test your abilities.	.74	.79				
4b To learn what you are capable of.	.84	.85				
Excitement						
5a To have thrills.	.62	.68				
5b To experience excitement.	.64	.69				
5e To experience the fast paced nature of things.	.46	.46				
5f To feel exhilaration.	.68	.63				
Endurance						
6a To test your endurance.	.69	.80				
6c To gain a sense of accomplishment.	.70	.83				
Telling Others						
7a To tell others about the trip.	.51	.71				
7b To have others know that you have been there.	.46	.79				

TABLE 2 (Continued)

Domains Scales	Domain analysis	Scale analysis				
	Domain factor loading	Scale factor loading	Root mean square residual	GFI	Chi square	DF
AUTONOMY/LEADERSHIP			.044	.985	105.4	24
Independence						
1a To feel independence.	.76	.72				
1b To be alone.	.66	.68				
Autonomy						
2a To be my own boss.	.67	.75				
2b To be free to make your own choices.	.73	.80				
2c To be obligated to no one.	.58	.71				
2d To do things your own way.	.58	.61				
2e To think for myself.	.63	.68				
Control-Power						
3a To control things.	.54	.67				
3b To be in control of things that happen.	.71	.73				
RISK TAKING[2]			N/A	N/A	N/A	N/A
1a To take the risks.	.80					
1b To chance dangerous situations.	.80					
1d To experience the risks involved.	.83					
EQUIPMENT[2]			N/A	N/A	N/A	N/A
1b To talk to others about your equipment.	.60					
1a To use your equipment.	.79					
FAMILY TOGETHERNESS[2]			N/A	N/A	N/A	N/A
1a To do something with your family.	.83					
1b To bring your family closer together.	.88					
SIMILAR PEOPLE			.014	.998	4.5	4
Being with Friends						
1a To be with members of your group.	.61	.73				
1b To be with friends.	.73	.85				
1c To do things with your companions.	.68	.73				

TABLE 2 (Continued)

	Domain analysis	Scale analysis				
Domains Scales	Domain factor loading	Scale factor loading	Root mean square residual	GFI	Chi square	DF
Being with Similar People						

2a To be with others who
     enjoy the same things
     you do.
	.78	.81				

2b To be with people having similar values.	.78	.65				
NEW PEOPLE			.047	.980	70.3	4
Meeting New People						
1a To talk to new and var- ied people.	.88	.84				
1b To meet other people in the area.	.68	.86				
1c To meet new people.	.86	.74				
Observing Other People						

2a To be with and observe
     other people using the
     area.
	.83	.90				

2b To observe other people in the area.	.58	.75				
LEARNING			.036	.993	121.6	29
General Learning						
1a To develop my knowl- edge of things there.	.76	.75				
1b To learn about things there.	.73	.78				
Exploration						
2a To experience new and different things.	.80	.70				
2b To discover something new.	.80	.81				
2d To explore the area.	.63	.70				
Geography Study						
3a To get to know the lay of the land.	.65	.76				
3b To learn about the to- pography of the land.	.63	.88				
Learn More About Nature						
4a To study nature.	.66	.77				
4b To learn more about nature.	.82	.86				
4d To gain a better appreci- ation of nature.	.74	.82				

TABLE 2 (Continued)

Domains Scales	Domain analysis	Scale analysis			
	Domain factor loading	Scale factor loading	Root mean square residual	GFI	Chi square	DF
ENJOY NATURE			.026	.995	29.9	4
Scenery						
1a To view the scenery.	.77	.84				
1b To view the scenic beauty.	.80	.95				
General Nature Experience						
2a To be close to nature.	.77	.83				
2b To enjoy the smells and sounds of nature.	.88	.86				
2e To be where things are natural.	.82	.69				
INTROSPECTION			.041	.985	69.8	8
Spiritual						
1a To develop personal spiritual values.	.67	.81				
1b To grow and develop spiritually.	.80	.97				
1d To reflect on your religious or other spiritual values.	.53	.70				
Introspection						
2a To think about your personal values.	.74	.73				
2b To think about who you are.	.71	.76				
2e To learn more about yourself.	.58	.40				
CREATIVITY[2]			N/A	N/A	N/A	N/A
1a To be creative.	.67					
1b To do something creative such as sketch, paint, take photos.	.42					
1e To gain a new perspective on life.	.74					
NOSTALGIA[2]			N/A	N/A	N/A	N/A
1a To think about good times you've had in the past.	.85					
1b To bring back pleasant memories.	.73					
1e To reflect on past memories.	.70					

TABLE 2 (Continued)

Domains Scales	Domain analysis	Scale analysis				
	Domain factor loading	Scale factor loading	Root mean square residual	GFI	Chi square	DF
PHYSICAL FITNESS[2]			N/A	N/A	N/A	N/A
1a To get exercise.	.75					
1b To keep physically fit.	.83					
1e To feel good after being physically active.	.79					
PHYSICAL REST[2]			N/A	N/A	N/A	N/A
1a To relax physically.	.72					
1b To rest physically.	.85					
ESCAPE PERSONAL-SOCIAL-PRESSURES			.026	.994	29.7	11
Tension Release						
1a To help get rid of some clutched-up feelings.	.66	.73				
1b To release or reduce some built-up tensions.	.80	.91				
Slow Down Mentally						
2a To have your mind move at a slower pace.	.65	.67				
2b To give your mind a rest.	.75	.77				
Escape Role Overloads						
3a To get away from the usual demands of life.	.75	.71				
3b To avoid everyday responsibilities for awhile.	.59	.72				
3c To reduce the feeling of having too many things to do.	.72	.73				
ESCAPE PHYSICAL PRESSURE			.057	.981	346.0	71
Tranquility						
1a To experience tranquility.	.76	.73				
1b To experience solitude.	.68	.73				
1c To experience the peace and calm.	.72	.73				
1h To be where it is quiet.	.65	.77				
Privacy						
2a To feel isolated.	.50	.59				
2b To be on my own.	.47	.58				
2c To get away from other people.	.67	.82				
2d To have more privacy than you have back home.	.57	.68				

TABLE 2 (Continued)

Domains Scales	Domain analysis	Scale analysis				
	Domain factor loading	Scale factor loading	Root mean square residual	GFI	Chi square	DF
Escape Crowds						
3a To be away from crowds of people.	.70	.74				
3b To experience more elbow room.	.73	.70				
3c To get away from crowded situations for awhile.	.68	.70				
3d To experience the open space.	.83	.74				
Escape Physical Stressors						
4a To get away from the clatter and racket back home.	.62	.69				
4b To get away from the noise back home.	.78	.79				
SOCIAL SECURITY[2]			N/A	N/A	N/A	N/A
1a To be near considerate people.	.82					
1b To be with respectful people.	.73					
TEACHING-LEADING OTHERS			.021	.995	9.0	4
Teaching-Sharing Skills						
1a To teach your outdoor skills to others.	.69	.77				
1b To share what you have learned with others.	.80	.75				
1c To share your skill and knowledge with others.	.75	.75				
Leading others						
2a To help direct the activities of others.	.71	.75				
2b To lead other people.	.53	.69				
RISK REDUCTION			.006	.999	0.6	1
Risk Moderation						
1a To be with others if you needed them.	.71	.85				
1b To know that others are nearby.	.65	.70				

TABLE 2 (Continued)

	Domain analysis	Scale analysis				
Domains Scales	Domain factor loading	Scale factor loading	Root mean square residual	GFI	Chi square	DF
Risk Avoidance						
2a To be sure of what will happen to you.	.75	.76				
2b To avoid the unexpected.	.47	.70				

[1]The Recreation Experience Preference (REP) scales have been grouped by Domains (in capital letters in this table) of conceptually and empirically related scales, however, some Domains are comprised of only one scale. Scale items used in this analysis are shown under the titles listed for each scale. The number/letter designations to the left of each item refer to how those items have been listed in the complete REP item pool (Driver, 1983) and in Tables 4-7.
[2]These are one-scale domains.
N/A - Scale Analysis not applicable due to one scale domain.

People (RMSR = .100) and Introspection (RMSR = .104) and three cases due to response scale; Achievement (RMSR = .112, Introspection (RMSR = .099) and Physical Escape (RMSR = .090). These findings offer evidence supporting the reliability, and to some extent the construct validity of the REP item scales.

Discussion

Conclusions from this investigation are somewhat limited by the fact that the studies included in the meta-analysis were all conducted in 1975-1979 (see Table 1). It is possible that an effect due to historical change would affect the generalizability over time. Motivations are, however, theorized to be relatively stable, basic human characteristics. It would seem there is insufficient societal change in the past 20 years to expect such an effect.

Given this potential limitation, we conclude that the analyses support the factor structure of the REP domains and scales. Future uses of the REP scales should attend to the following concerns.

Clarifying the Concept of Interest

The REP scales are linked, theoretically, to the experiential approach and are intended to measure the types of psychological goal states desired by recreationists. They can be usefully applied when attempting to determine motivations for or the psychological outcomes desired from leisure. In this regard, the scales have been used to determine trip-specific motivations for leisure (i.e., why people took a particular trip), and activity-specific motiva-

TABLE 3
Mean Inter-Item Correlations For Domains and Scales

Domains and Scales	Within[1]		Between	
	Scale	Domain	Scale	Domain
ACHIEVEMENT/STIMULATION		.422		.254
Reinforcing Self-Image	.569		.289	
Social Recognition	.594		.212	
Skill Development	.629		.300	
Competence Testing	.681		.346	
Excitement	.366		.249	
Endurance	.660		.299	
Telling Others	.556		.217	
AUTONOMY/LEADERSHIP		.449		.278
Independence	.489		.296	
Autonomy	.522		.271	
Control-Power	.546		.283	
RISK TAKING		.673		.178
EQUIPMENT		.526		.255
FAMILY TOGETHERNESS		.574		.166
SIMILAR PEOPLE		.501		.233
Being with Friends	.591		.226	
Being with Similar People	.478		.257	
NEW PEOPLE		.609		.215
Meeting New People	.691		.248	
Observing Other People	.657		.201	
LEARNING		.535		.292
General Learning	.602		.314	
Exploration	.514		.314	
Geography Study	.670		.276	
Learn More About Nature	.689		.311	
ENJOY NATURE		.658		.275
Scenery	.746		.270	
General Nature Experience	.654		.304	
INTROSPECTION		.515		.268
Spiritual	.737		.266	
Introspection	.524		.279	
CREATIVITY		.412		.276
NOSTALGIA		.599		.283
PHYSICAL FITNESS		.652		.290
PHYSICAL REST		.611		.231
ESCAPE PERSONAL-SOCIAL PRESSURES		.487		.262
Tension Release	.664		.301	
Slow Down Mentally	.551		.279	
Escape Role Overloads	.483		.265	

TABLE 3 (Continued)

Domains and Scales	Mean correlations			
	Within		Between	
	Scale	Domain	Scale	Domain
ESCAPE PHYSICAL PRESSURE		.464		.258
Tranquility	.545		.288	
Privacy	.464		.210	
Escape Crowds	.530		.302	
Escape Physical Stressors	.448		.287	
SOCIAL SECURITY		.614		.262
TEACHING-LEADING OTHERS		.493		.294
Teaching-Sharing Skills	.575		.281	
Leading others	.508		.218	
RISK REDUCTION		.424		.183
Risk Moderation	.597		.205	
Risk Avoidance	.491	.170		

[1]"Within" refers to correlations between items within a domain or scale. "Between" refers to correlations between items within a domain or scale and items outside that domain or scale.

TABLE 4
Significant Tests of L_x Matrices (factor loadings) for Response Scale: Satisfaction versus Importance

Domain	Items[1]	Chi-Sq.	df	p	RMSR	GFI
Achievement	1a 1ba 1d 2a 2b 2f 3a 3b 4a 4b 5a 5b 5e 5f 6a 7a 7b	2072.88	287	.000	.112	.943
Autonomy	1a 1b 2a 2b 3b	386.77	62	.000	.079	.979
Risk taking	1a 1b 1d	1.75	2	.416	.015	.999
Similar people	1a 1b 1c 2a 2b	46.86	142	.000	.047	.994
New people	1a 1b 1c 2a 2b	167.74	14	.000	.068	.989
Learning	1a 1b 2a 2d 3a 3b 4a 4b 4d	458.36	79	.000	.063	.990
Enjoy nature	1a 1b 1d 2b 2e	89.16	14	.000	.030	.998
Introspection	1a 1b 1d 2b 2e	253.68	23	.000	.099	.973
Creativity	1a 1b 1e	2.13	2	.344	.021	.999
Nostalgia	1a 1b 1c	12.54	2	.002	.041	.996
Fitness	1a 1b 1e	1.78	2	.410	.013	.999
Social escape	1a 1b 2a 2b 3a 3b 3c	155.93	34	.000	.049	.993
Physical escape	1a 1b 1c 1h 2a 2b 2c 2d 3a 3b 3c 3d 4a 4b	1049.00	167	.000	.090	.972
Teaching	1a 1b 1c 2a 2b	74.36	14	.000	.053	.992
Risk reduction	1a 1b 2a 2b	56.44	7	.000	.047	.993

[1]Item designations refer to the domains, scales within domains, and items that comprise the scales listed in Table 2.

TABLE 5

Significant tests of L_x Matrices (factor loadings) for Instruction Set:
Activity versus Trip

Domain	Items[1]	Chi-Sq.	df	p	RMSR	GFI
Achievement	1a 2a 2b 3a 3b 4a 4b 5a 5b	330.58	62	.000	.072	.981
Autonomy	1a 1b 2a 2b 3b	28.05	14	.014	.028	.998
Risk taking	1a 1b 1d	3.75	2	.153	.021	.999
Similar people	1a 1b 2b	12.30	2	.002	.040	.996
Learning	2a 2b 2d 3a 3b	214.94	14	.000	.076	.983
Enjoy nature	1a 1b 2a 2b	51.83	7	.000	.031	.998
Introspection	1d 2a 2e	16.63	2	.000	.046	.993
Fitness	1a 1b 1e	.31	2	.856	.006	.999
Physical escape	1a 1c 2a 3a 4b	30.90	14	.006	.040	.995
Teaching	1a 1b 1c 2a	24.25	7	.001	.045	.994
Risk reduction	1a 1b 2b	4.50	2	.106	.038	.996

[1]Item designations refer to the domains, scales within domains, and items that comprise the scales listed in Table 2.

tions (i.e., why people engage in a particular activity). Exploratory research has also used the REP scales to determine the extent to which leisure generally achieves goal states in life (Manfredo et al., 1989). Use of the scales would also be appropriate for measuring the satisfaction obtained from engagement (i.e., the degree to which goal states were attained). Clearly, different instruction sets and response scales are appropriate depending upon which of these is the study objective.

TABLE 6

Significant tests of L_x Matrices (factor loadings) for Geographic Location:
East versus West

Domain	Items[1]	Chi-Sq.	df	p	RMSR	GFI
Achievement	1a 1b 1d 2a 2b 3a 3b 4b 5a 5e	334.99	79	.000	.075	.866
Autonomy	1a 1b 2a 2b 3b	18.27	14	.195	.031	.997
Similar people	1a 1b 2a 2b	36.09	7	.000	.053	.992
New people	1a 1b 2a 2b	51.41	7	.000	.043	.996
Learning	1a 1b 2a 2b 2d 3a 3b 4a 4b	257.05	47	.000	.068	.985
Enjoy nature	1a 1b 2a 2b	50.71	7	.000	.057	.991
Introspection	1a 1b 2a 2b	112.11	7	.000	.070	.981
Social escape	1a 1b 2a 2b 3a 3b 3c	114.95	34	.000	.055	.990
Physical escape	1a 1b 2a 2b 3a 3b 4b	215.58	34	.000	.076	.977
Teaching	1a 1b 2a 2b	31.19	7	.000	.036	.996
Risk reduction	1a 1b 2b	.49	2	.781	.013	.999

[1]Item designations refer to the domains, scales within domains, and items that comprise the scales listed in Table 2.

TABLE 7

Significant tests of L_x Matrices (factor loadings) for Type of Area: Rural to Urban versus Semi-primitive to Roaded Natural

Domain	Items	Chi-Sq.	df	p	RMSR	GFI
Achievement	1a 1b 1d 2a 2b 2f 3a 3b 4a 4b 5a 5b 5e 5f 6a 6c 7a 7b	2049.20	287	.000	.102	.947
Autonomy	1a 1b 2a 2b 3b	384.66	62	.000	.089	.966
Risk taking	1a 1b 1d	.20	2	.905	.005	.999
Similar people	1a 1b 1c 2a 2b	110.10	14	.000	.064	.988
New people	1a 1b 1c 2a 2b	173.30	14	.000	.100	.972
Learning	1a 1b 2a 2b 2d 3a 3b 4a 4b 4d	469.04	79	.000	.068	.985
Enjoy nature	1a 1b 2a 2b	148.60	14	.000	.083	.986
Introspection	1a 1b 1d 2b 2e	270.33	23	.000	.104	.962
Creativity	1a 1b 1e	2.06	2	.358	.023	.998
Nostalgia	1a 1b 1c	16.91	2	.000	.047	.995
Fitness	1a 1b 1e	7.38	2	.025	.027	.998
Social escape	1a 1b 2a 2b 3a 3b 3c	99.95	34	.000	.056	.990
Physical escape	1a 1b 1c 1h 2a 2b 2c 2d 3a 3b 3c 3d 4a 4b	990.31	167	.000	.086	.969
Teaching	1a 1b 1c 2a 2b	66.34	14	.000	.067	.986
Risk reduction	1a 1b 2a 2b	60.89	7	.000	.082	.979

[1]Item designations refer to the domains, scales within domains, and items that comprise the scales listed in Table 2.

Identifying Items for Inclusion on the Data Collection Instrument

Concerns of content validity, which address whether or not all important experience preferences are measured with an instrument, are of primary concern in decisions regarding which scales to administer in a given study. The most advisable approach is to include all scales in the item pool because content validity was a criterion applied in scale development. A reasonable alternative is to conduct a pretest to determine which of the types of experience outcomes are important to the group studied. In the pretest, administer all REP scales. In the final instrument, include those REP scales that were of high importance and/or which contained wide variability in response as determined by the pretest. Use of one item from each scale should be avoided since this increases the likelihood of item sampling error and weakens generalizations made to the concepts represented by the scales. Researchers interested in conducting an in-depth investigation on a particular experience preference are referred to Driver (1983), which contains the longer list of items that can be added to the REP scales presented here.

Administration

The instructional set used in conjunction with the REP items should be dictated by theoretical concerns. For example, if the interest is in examining

experience attainment, the instructional set might ask subjects to indicate the extent to which the items added to their trip. Conversely, when the interest is on identifying motivations or desired outcomes, the instructional set might ask the extent to which the items are important in their choice to visit an area or engage in a particular activity.

Past studies underscore the importance of administering the REP scales as close as possible to the time of interest (i.e., administer immediately after the trip for experience attainment) administer *a priori* to the trip for experience preferences, administer months after the engagement for the more recurring and enduring experience preferences for a general type of recreation.

Analysis of Scale Reliability

Unless the intent of the study is to provide confirmatory analysis of the REP scales, exploratory cluster or factor analyses are not necessary in future applications. Researchers should, however, provide empirical checks on scale consistency by placing items in their *a priori* groups and testing for reliability using Cronbach's alpha. Following Nunnally's (1978) recommendation, an alpha of .60 or greater is necessary before the scale is used further.

Future Research

We expect that any future uses of the REP scales will be similar to past uses; they will be used to help understand the motivations for leisure and will be used to help managers understand and meet the desires of visitors. However, the validity of the scales should continue to be a concern. As Nunnally (1978) has indicated, validity is a matter of degrees not an all-or-none proposition, and validation is an unending process. One prominent validity issue that merits further examination is whether or not the REP scales are content valid for applications other than outdoor recreation. The scales were developed by focusing on outdoor recreation, particularly recreation that occurs in highly natural settings. Are the types of outcomes desired for outdoor recreation similar to other non-outdoor leisure pursuits?

Questions of convergent validity are also important. How do findings using other measures of recreation outcomes correspond to findings using the REP scales? Of particular interest would be the correspondence between the REP scales and bio-physical measures (e.g., heart rate, blood pressure, pupil dilation). The correspondence of psychometric and bio-physical measures has received increased attention in psychology with promising results (e.g., Tarrant, Manfredo, & Driver, 1994; Cacioppo & Petty, 1981).

More generally, it would be important to extend our research with the purpose of exploring the nomological network of REP concepts. A key priority in this regard is the linkage between attainment of experiences and beneficial human consequences. For example, how is participation in leisure related to mental and physical health and overall quality of life? A fruitful direction for research would also be to explore a model of REP concepts

within the context of a hierarchical approach to goal seeking. Hierarchical
models such as the values-attitudes hierarchy (Homer & Kahle, 1988) or the
personal strivings approach to motivation (Emmons, 1989) offer explana-
tions of behavior that link basic human traits to constructs more tangential,
ephemeral, and idiographic. For example, this would propose establishing
the relationship of the REP concepts to basic enduring personality traits and
more idiographic concepts like "current concerns" and "personal strivings"
(see Emmons, 1989). The latter emphasis may offer findings useful for ap-
plying the REP scales as a diagnostic device useful for assistance in personal
counseling.

      The development of the REP scales represents a major effort within the
young discipline of leisure sciences. It is important that these studies not be
viewed as an end but provide a focal point upon which to build when seeking
answers to questions of leisure behavior.

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