FACTORS ASSOCIATED WITH BLOCKAGES TO OUTDOOR RECREATION PARTICIPATION: A STATE SURVEY

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Paper presented at the Outdoor Recreation Research Symposium,
Fawcett Center For Tomorrow, November 15-16, 1977.

ABSTRACT

Data from a random sample of Ohio residents were used in an attempt to isolate factors that were hypothesized to be related to outdoor recreation blockages. The study revealed that socio-demographic variables failed to explain the variance in factor scores created to measure blockages to outdoor recreation. Findings from descriptive statistics and the factor analyses are discussed in a planning context.

Factors Associated With Blockages To Outdoor Recreation Participation: A State Survey

INTRODUCTION

Outdoor recreation has become an important subject for research in recent years due to many factors that have made more nonwork time possible for many segments of the American population (Faunce, 1963; Neulinger, 1976). As demands increase for relevant recreation experiences, additional planning problems are created for agencies commissioned to provide recreational opportunities for client groups. The major problem in the planning process has always been a mechanical determination of demand. Many state outdoor recreation and visitor use studies employ existing use patterns and population projections to predict future use (Cheek and Burdge, 1974). This methodology is at best tenuous, since nonusers of facilities are effectively excluded from the research meaning that their needs are not incorporated into future development planning. While site-specific studies provide useful insight into perceptions and consumption patterns of users, little can be stated from this type of research design relative to the potential client groups who, for a variety of reasons, are not participants.

Assuming that contributors to the funding of public goods should have a role in decision making relative to future development, then statewide surveys should be conducted among nonusers as well as users to assess the reasons for participation and nonparticipation. More comprehensive research may reveal that nonparticipants are not being adequately served by existing outdoor recreation programs and/or facilities. Such data should provide insight into how the nonparticipating client group's needs may be more adequately served. Statewide surveys should provide planning

groups with information relative to the "blockage" factors associated with participation and nonparticipation in outdoor recreation activities.

The primary purpose of this paper is to report the findings from a statewide survey which was designed to evaluate outdoor recreation behavior of a random sample of Ohio residents. The principle focus of this report is on the evaluation of the relationship of selected socio-demographic factors and indicators of blockages to outdoor recreation participation.

Outdoor Recreation and Leisure Research

One of the most frequently studied areas of outdoor recreation and leisure research has been the relationship of social class and recreation activities (Clarke, 1956; Reissman, 1954; White, 1955; Havighurst and Fiegenbaum, 1959; Morris, et al., 1972; Burdge, 1969; Cunningham, et al., 1970; Burch, 1970; Kando, 1975; Lindsay and Ogle, 1972). Unfortunately consensus has not been achieved relative to the impact of status factors on outdoor recreation participation. The literature on social class and recreation suggests that the status indicator selected by the researcher substantially shapes the observed findings.

The relationship of early childhood exposure to recreation participation and adult behavior has been evaluated with a general conclusion that childhood leisure experiences effect later outdoor recreation behavior (Kelly, 1974; Yoesting, 1976; Yoesting and Burkhead, 1973; Hendee, 1969; Sofranko and Nolan, 1972). Even though the magnitude of the empirical association was often quite small, the theoretical position that early exposure to recreation experiences and adult behavior appeared to have validity.

Other areas of significant research have been the "social-environmental" influences upon leisure behavior (Harry, 1971; Burch, 1969; Spreitzer

and Snyder, 1974; Grubb, 1975; Dubin, 1963; Knopp, 1972; Witt and Bishop, 1970; Christensen and Yoesting, 1973). "Personal community" factors such as place of work, type of work role, availability of facilities and other environmental variables have been shown to be related to participation but the magnitude of the variance explained has been quite small. Personal attributes such as age, income, gender, residence, regional mobility and race have also been shown to be significantly related to recreation activity (Cicchetti, 1972) but again the predictive ability of the selected independent variables is limited.

Even though many writers have attempted to build conceptual schemes, the failure of empirical research to consistently support tentative hypotheses has resulted in a relative lack of concise theoretical modeling in the leisure sciences. Wilensky (1960), for example, offered the "spillover" and "compensatory" model which was elaborated by Burch (1969) to include "personal community." These hypotheses have been put to test with relatively little success. Kando and Summers (1971) argue convincingly that one of the major problems with the "spillover" and "compensatory" model is that it is difficult to distinguish behavior which is exclusive of one or the other category. What may be "spillover" activity for one person may be "compensatory" for another. What is even more difficult to categorize is behavior that, depending on the situation, can be defined as either spillover or compensatory. Most other theoretical positions have also met with little success[1] when put to empirical test.

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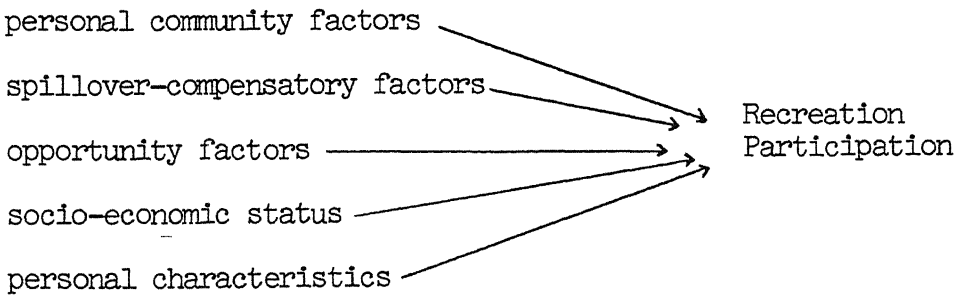
[1]Success is evaluated in terms of measures of association. Leisure studies have tended to be bivariant analyses with relatively low measures of association reported. Multivariant studies also reveal low percentages of explained variance.

A Theory of Blockage

While it is possible that the failure of numerous research studies to explain leisure behavior is a function of the selection of inappropriate independent variables, it may also be a function of oversimplification of theoretical models. A synthesis of the literature presented above is conceptualized in Figure 1.

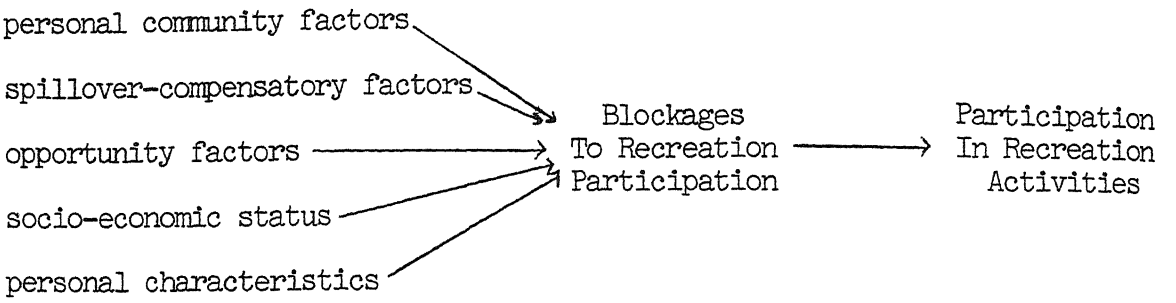
The theoretical concepts used as independent variables are: compensatory spillover (Wilensky, 1960), personal community (Burch, 1969), opportunity theory (Hendee, 1969), social status (Clarke, 1956; Kando, 1975, and others noted earlier) and personal characteristics (Cicchetti, 1972). The dependent variable is recreation participation.

Figure 1.



The model basically is unspecified as presented, but tends to reflect the literature. Many leisure studies take one component and try to predict participation. Such a theoretical approach must assume no intervening variables to have any hope of being valid. It is our contention that the major problem with the model presented in Figure 1 is that it does not include "blockages" to participation. The model would have to be more specified to take the blockage factors into account. The revised model is presented in Figure 2.

Figure 2.



In essence, it is argued that the association between blockages to leisure participation and socio-demographic factors must be understood before analysis of actual participation may begin. There are many potential blockages to participation such as: lack of recreation skills, lack of time, the conditions of the facilities, availability of transportation, lack of recreation peer group and numerous other factors. The focus of this research is upon the factors contributing to the explanation of the intervening blockages.

Selection of Variables and Hypotheses

Selection of multiple indicators for each of the components in Figures 1 and 2 would have been impossible due to the magnitude of data required to test such a model, therefore, selected variables were chosen to represent each component.[2] The variable chosen by component are as follows:

1. Personal community - - - - - - - - - - family size
2. Familiarity-Compensatory - - - - - - occupation
3. Opportunity - - - - - - - - - - - - - place of residence and house type
4. Socio-economic conditions - - - - - income
5. Personal characteristic - - - - - - age

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[2]It should also be noted that the authors were using secondary data and were limited in the selection of variables.

Family size:

Burch (1969) argued that personal community factors of one's work mates, family and friends affect one's recreation pattern. The variable selected for this study to test the personal community component is family size. Kelly's (1974) work also suggests that children have a "recreation effect" on parents which adds further support to the position that family size would be a proxy for the influence of personal community factors. As family size increases the priorities for giving children outdoor recreation experiences should increase since family recreation provides the opportunity for family interaction which suggests that potential blockages should be less operative for larger families.

Occupation:

The extensive work completed in the area of work roles already noted should explain the selection of occupation to test the association of the familiarity-compensatory component. One's work role should affect hours of recreation, access to facilities and other potential blockages. Higher status occupations should experience more blockages than lower status occupations due to the demands of the work role even though this may be mitigated by the necessity of second jobs for working class people. People in higher status occupations tend to work longer hours and derive more self actualization from work roles (Orzack, 1963). They should value work over recreation participation and, therefore, be subject to more blockages than lower status occupations.

Place of residence and house type:

Hendee (1969) in a most interesting paper suggests that opportunity is differentially distributed. People sometimes do not have access to certain facilities or recreation opportunities as a function of residential

location. There is a lack of certain types of facilities in less populated areas due to the limited tax base for financing public goods and the small population base for attracting private investment in recreation. Housing types would also effect opportunity for recreation behavior since larger apartment complexes as a function of lack of space may not have facilities which are adequate to the needs of the residents. It was reasoned that both place of residence and housing type would be significantly related to blockage factors.

Income:

Individuals who command high incomes are also able to secure for themselves scarce resources and recreation may be subsummed in a luxury category. Blockages to participation could be removed by purchasing power. If facilities do not exist, they could be created or extensive travel to areas where the facilities are present could be sustained. It is reasoned that income will be significantly related to blockages to participation.

Age:

Social responsibilities tend to increase with age. Families are formed and the number of dependents increases. Work roles demand more time and organizational participation will tend to be expanded. Time becomes less available for recreation as age increases and consequently recreation blockages should increase.

RESEARCH METHODOLOGY

Characteristics of the Sample

The data used to test the theoretical perspective offered above were generated using a randomly selected sample drawn from automobile

registration lists of the Ohio Bureau of Motor Vehicles. The data were collected using a mailed questionnaire composed of structured measurement devices. In 1973 approximately 33,000 questionnaires were mailed to the selected sample and 5,542 usable questionnaires were returned which is a return rate of approximately 17 percent.[3] The high percent of nonrespondents places limitations on the generalizability of the findings to the state population. Some biasing toward automobile owners is operative since anyone not having a registered vehicle was excluded. Although a large portion of the state's population have automobiles registered with the state, there is a small segment of the population that does not, such as the very poor and the aged. The responses were distributed throughout the state of Ohio. The sample characteristics and comparisons with appropriate state data are presented in Table 1.

(Table 1 here)

The sample characteristics compare favorably with most of the data for the state as a whole. Very close association was noted in family size, percent of female family members employed outside of home, and distribution by place of residence. Some differences were noted in income and occupation where the higher income and occupations were over represented. The middle income and occupations tended to dominate both the state and sample data (measures of central tendency for occupation and income would be relatively close for the state and the sample data).

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[3]The data were collected by researchers in the Geography Department of Miami (Ohio) University under contract with the Ohio Department of Natural Resources. A duplicate data tape was secured from the contracting group and the tape screened for errors. The authors had no control of the methodologies of data collection nor instrument construction.

The conclusion drawn from this comparison is that the sample data, even with the limited response rate, tend to reflect a relatively close approximation of state profiles. The similarities would have been greater had measures of central tendency been used, rather than categorical presentation.

The sample data also contained significant variance in terms of outdoor recreation participation rates. The theory is developed in the context of blockages which means that a data set to test such a model must include data from nonparticipants. Data pertaining to outdoor recreation activity revealed that 21 percent of the sample had not participated in any outdoor recreation in the last year. The variance in the rate of participation was also great. The mean number of outdoor recreation activities per family was 95.9 with a standard deviation of 202.7.

Given the sample size and its relatively close association with the state data--combined with the variance in the participation rates--it is argued that the data set is adequate to provide a preliminary test of the theoretical position noted above.

Measurement of Variables

Location of residence was measured by asking the respondents to note the location of their present residence using the following categories: central city, other urban, detached city of 10,000 or more, rural nonfarm and rural farm. Age of the household head was recorded in years at last birthday. Family size was recorded as the number of persons living in the household. To control for sex, occupation was operationalized in each household as follows: (1) the number of females with occupation classified as professional, white collar, blue collar, or not employed outside the home; and, (2) the number of males with occupation classified

as professional, white collar, blue collar, unemployed, or other. The type of housing was classified as private home, apartment, condominium, mobile home, or other. Income was measured in terms of six categories: $0 - 2,999, $3,000 - 5999, $6000 - 8999, $9000 - 11,999, $12,000 - 14,999 and $15,000 and over. The categories were weighted one through six respectively.

The dependent variables, termed attitudes toward outdoor recreation blockages, were operationalized in the questionnaire by two series of items. The first series of items (indirect blockages) were associated with conditions which contribute to making outdoor recreation enjoyable (lack of enjoyment would be indicative of blockages). The items were: "uncrowded parks," "close to residence," "availability of convenience facilities," "variety of recreational experiences," "orderly clean areas," and "park sponsored activities," The second series of items were oriented toward factors which tend to prevent the respondent from visiting outdoor recreation areas (direct blockages). These items included: "lack of time," "too far away," "too crowded," "lack of money," "areas not properly administered," "not interested in attending more often," "lack of information," and "lack of transportation." Each respondent was requested to rate the importance of each item on a scale of 1 to 5 in the following manner: 1 - important, 2 - slightly important, 3 - no opinion, 4 - slightly unimportant, and 5 - unimportant.

Attitude Index Construction

The assumption is made that the weighting of questionnaire item responses produces metric measures which permit parametric analysis (Nie, et al., 1975). Factor analysis was applied to the attitude data to produce indices of "enjoyable" outdoor recreation conditions (indirect

measure of blockages) and "blockages" to outdoor recreation participation. Factor analysis was used to reduce the number of variables within the data set while maintaining most of the information contained therein. A factor is a pattern of variables which "represents a scale based on the empirical relationships among the characteristics" (Rummel, 1967:450). By applying factor analysis to a data set, a large number of variables become more manageable for statistical purposes and factor scores can be generated which meet the assumptions of numerous other parametric statistics.

Factor analyses were performed on the two sets of items composing the dependent variables. The criterion used to define a significant factor was an eigen value greater than or equal to 1.0. The lower limit of the factor loadings used to select variables to be included in the composite indices was 0.5. Orthoginal varimax rotation was used.

The factor analysis for the first series of enjoyment items produced two significant factors. The first factor included the items "uncrowded parks," "availability of convenience facilities," and "orderly clean areas." Given the nature of the items composing the index it was labeled the "facility factor." The second factor included "variety of recreational experiences" and "park sponsored activities." The index was labeled the "activity factor." The measurement device and the factor analysis statistics for the facility and activities factors are presented in Tables 2 and 3.

(Tables 2 and 3 here)

The second series of items were submitted to factor analysis which produced three significant blockage factors. The first factor included the variables: "lack of money," "not interested in attending more often,"

and "lack of transportation." Given the nature of the variables, the factor was labeled the "personal factor." The second factor included the variables "too crowded" and "areas not properly administered" and was termed the "area characteristics factor." The third factor was composed of the variables "lack of time" and "too far away" and was called the "convenience factor." The statistics for the second series of factors are presented in Tables 4 and 5.

(Tables 4 and 5 here)

The factor analysis technique for index construction produced five factors from fourteen original variables which permitted much more concise analysis of the data. Factor scores were calculated for each of the respondents for the five newly created variables. The scores are calculated from the factor score coefficient matrix and the rotated factor pattern matrix (Nie, et al., 1975). The factor score is a standardized score which is a measure of the case's association with the particular factor in relation to the other cases of the sample. These composite factor scores were then used as the dependent variables in the subsequent analysis. See Table 6 for the range of possible scores for each scale.[4]

(Table 6 here)

Step-wise regression and analysis of variance were used to analyze the relationships among the variables within the data set. Regression analysis was employed to assess the explanatory power of the selected independent variables of family size, age of the household head, and income with each of the five factor index scores used as dependent

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[4]The mean and standard deviations of the sample are zero and 1.0 respectively since these are standard scores.

variables. Linear relationships were assumed and the independent variables were assumed to produce metric measure. Analysis of variance was employed to determine the degree of association between the enjoyment and blockage variables and place of residence, occupation and type of housing. Analysis of variance was used since the independent variables did not meet the assumption of metric measure.

RESEARCH FINDINGS

Descriptive statistics were generated from the data set and preliminary evaluations were conducted. The descriptive findings of the items used to formulate the dependent variables are presented in Table 7.

(Table 7 here)

The frequencies of the individual dependent variable items, shown in Table 7, provide insight into how the sample population viewed the various aspects of enjoyable outdoor recreation conditions and outdoor recreation blockages. The "conditions of uncrowded parks," "availability of convenience facilities," and "orderly clean areas" were considered important while "variety of recreational experiences" and "park sponsored activities" were generally considered to be of little importance. The items that were considered to be important in blocking participation in outdoor recreation activity were the "lack of time" and the "crowded conditions of the facility." The respondents believed that "lack of moeny," "not interested," and "lack of transportation" were relatively unimportant. The respondents frequently answered no opinion to the items of "too far away" and "areas not properly administered." These findings indicate that personal time factors and facility conditions with respect to population density were the primary impediments to participation.

Regression Analysis

Step-wise regression analysis was employed to evaluate the relative explanatory power of the selected independent variables and attitudes toward the indices of "enjoyment" and "blockage." The independent variables which met the assumption of metric measure and used in this analysis were: family size, age of the household head, and income. These three variables were regressed against each of the five outdoor recreation attitude indices discussed in the previous section.

The assumption of linear relationships of the variables was made and the following equation was used:

$$Y = BX + e$$

Where:

Y = score of dependent variable
B = standardized regression coefficient
X = score for independent variable
e = error

An F-test was calculated to test the significance of each entering independent variable and for the total equation. The coefficient of determination was calculated for each regression step and corrected for loss of degrees of freedom. The correlation matrices and summary statistics for the variables used in the regression analysis are presented in Tables 8-10. The regression equations for the five dependent variables are presented below in standard regression coefficient (Beta) form:

Facility Factor Index $Y = .040X_1 + .020X_2 - .015X_3 + .998e$
Activity Factor Index $Y = -.013X_1 - .006X_2 + .029X_3 + .999e$
Personal Factor Index $Y = -.050X_1 - .114X_2 + .139X_3 + .970e$
Area Characteristics Factor Index $Y = -.009X_1 - .002X_2 - .008X_3 + .999e$
Convenience Factor Index $Y = -.029X_1 + .103X_2 + .049X_3 + .986e$

Where:

X_1 = family size
X_2 = age of household head
X_3 = income
e = error

(Tables 8 through 10 here)

The regression analysis revealed several significant relationships among the variables, however, the magnitude of the explained variance was extremely small for all of the regressions. This means that the explanatory power of the variables is of little substantive importance even for the significant relationships. It must be concluded that the independent variables selected for analysis have very little utility in predicting attitudes of "enjoyment" and "blockage" of outdoor recreation. The theoretical hypotheses offered above must be repudiated.[5]

Analysis of Variance

Analysis of variance was used to test whether or not there were significant differences among the nominal level categories of the independent variables and the blockage and enjoyment index scores. F-tests and eta-squared statistics were used to determine the significance level and degree of association between the variables tested. The independent variables used to establish categories (nominal level data) in the analysis of variance were: location of residence, occupation, and type of housing. The dependent variables were the five outdoor recreation attitudes indices. Data for males and females were analyzed separately for occupation which

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[5] It should also be noted that correlations of the "enjoyment" and "blockage" factors with total family participation rates proved fruitless. The correlations were practically nonexistent.

provided an additional control for sex.

The results of the one-way analysis of variance presented in Table 11 reveal that several significant relationships were identified. The magnitude of the eta-squared, however, revealed very little association among the variables selected for analysis. The expected association of personal characteristics and outdoor recreation attitudes was not realized.

(Table 11 here)

SUMMARY AND CONCLUSION

In summary, the independent variables of family size, age of the household head, income, location of residence, type of housing, and occupation provide virtually no explanation of the variance in outdoor recreation blockage and enjoyment factors as they were measured in this study. Although several significant relationships were noted among the variables, the magnitude of the explained variance for each dependent variable was so minute that they are of little practical utility.

While the basic theoretical position offered was demonstrated to have little value as stated, the factor analysis results could prove most useful for future research and applied planning programs. The factor analysis relative to conditions that make outdoor recreation enjoyable produced two factors that explained considerable variance (61.6 percent of the total variance). Factor analysis of the "blockage" data produced three factors which explained 58.0 percent of the total variance. These findings demonstrate that if outdoor recreation is to be enhanced, two factors must be considered which are the conditions of the facility, and aspects of the activities which exist at the facility. Three major factors should be considered with respect to recreation blockages: "the

personal situation of the potential client," "the characteristics of the outdoor recreation area," and "convenience of the outdoor recreation area."

The value of this research rests not on the discovery of significant relationships but upon the repudiation of the selected variables as explanatory factors for perceived blockages to outdoor recreation participation. Negative results should demonstrate the need for the development of more innovative explanatory variables than those employed in the Ohio outdoor recreation planning data. The "traditional" personal attributes are no longer (if they ever were) adequate predictors of attitudes toward "enjoyment" and "blockages" to outdoor recreation participation. The findings suggest that prediction of attitudes toward outdoor recreation participation require much more complex predictive variables than the socio-demographic variables used by outdoor recreation development researchers to date.

The discovery of more relevant predictive factors should prove invaluable relative to planning for a population's future outdoor recreation experience. This is consistent with Cheek and Burdge's (1974) observation that findings using social and demographic characteristics as indicators of activity preference have been inconclusive. Their observation that a need exists to go beyond class, age, and sex, for social indicators appears to be validated by this study.

It is possible that outdoor recreation research should deemphasize the use of socioeconomic and demographic variables for predictive purposes. Such a movement is in its embryonic stage in contemporary outdoor recreation research and the data analyzed in this study tends to add support to the contention that exploring new explanatory variables is not only

desirable but essential. Perhaps such variables as substitutability (Hendee and Burdge, 1974), group recreation experience, availability of compensatory recreation experiences, outdoor recreation skill levels, and other such factors may prove much more useful in the explanation of enjoyment and blockages to outdoor recreation activity than the existing explanatory variables used for planning purposes. The authors do not suggest that the variables considered in this study be eliminated from future data collection but rather plead for more comprehensive assessment of social variables to be added to the data set.

Research should be immediately undertaken to develop better social indicators which may be applied to outdoor recreation research. Until these indicators are developed agencies will have to rely upon "traditional" variables which have been shown to be relatively unimportant from a research perspective.

Table 1: Sample Characteristics Compared With State Data

Characteristic	Sample Data 1973	State* Data 1970	N of Sample
Family Size	$\bar{X}$ = 3.6	$\bar{X}$ = 3.6	5118
Age of Head of Household	$\bar{X}$ = 43.9	Not Available	5118
Income	%	%	5118
0 - 2,999	1.3	7.9	
3,000 - 5,999	4.5	12.2	
6,000 - 8,999	10.5	19.8	
9,000 -11,999	20.7	} 38.5	
12,000 -14,999	22.9		
15,000 and over	40.1	21.6	
Females In Labor Force	43%	38.2%	5092
Place of Residence			
Central City	23.0	31.7	5281
Other Urban	30.0	30.6	
Detached City (10,000)	8.0	8.0	
Rural Nonfarm	30.0	25.0	
Rural Farm	9.0	4.7	
Occupation			
Professional	21.0	12.1	5092
White Collar	22.0	21.7	
Blue Collar	42.0	49.5	
Other	2.0	12.9	
Unemployed	12.0	3.6	

*The state data was derived from the 1970 Census PC (1) - C37 Ohio.

Table 2: Questionnaire Items and Correlation Coefficients: Importance of Enjoyable Outdoor Recreation Conditions Items

1. Which of the following conditions are important to you in making your outdoor recreation enjoyable? Please respond to each item with a number from 1 to 5 where

1	2	3	4	5
important	slightly important	no opinion	slightly unimportant	unimportant

_____ a. Uncrowded parks
_____ b. Close to residence (30 minute travel time)
_____ c. Availability of convenience facilities (restrooms, water, grills)
_____ d. Variety of recreational experience
_____ e. Orderly clean areas (such as picnic areas)
_____ f. Park sponsored activities (rental equipment, naturalist program, trail hikes, exhibits, etc.)

	Uncrowded Parks	Convenience Facilities	Variety of Rec. Experiences	Clean Areas	Sponsored Activities
Uncrowded Parks	1.00				
Convenience Facilities	0.17	1.00			
Variety of Rec. Experiences	0.11	0.29	1.00		
Clean Areas	0.30	0.44	0.25	1.00	
Park Sponsored Activities	0.06	0.20	0.38	0.18	1.00

Table 3. Varimax Rotated Factor Matrix: Importance of Enjoyable Outdoor Recreation Conditions

	Facility Factor	Activity Factor	Communality
Uncrowded Parks	(0.75)	-0.14	0.58
Convenience Facilities	(0.61)	0.39	0.53
Variety of Recreation Experiences	0.19	(0.77)	0.64
Clean Areas	(0.77)	0.24	0.65
Park Sponsored Activities	0.00	(0.82)	0.68
% Total Variance	40.2	21.4	61.6
% Common Variance	65.3	34.7	
Eigenvalues	2.0	1.1	

Table 4. Questionnaire Items and Correlation Coefficients: Importance of Outdoor Recreation Blockages

2. Which of the following reasons now prevent you from visiting outdoor recreation areas? Please respond to each item with a number from 1 to 5 where

1	2	3	4	5
important	slightly important	no opinion	slightly unimportant	unimportant

_____ a. Lack of time
_____ b. Too far away
_____ c. Too crowded
_____ d. Lack of money
_____ e. Areas are not properly administered
_____ f. Not interested in attending more often
_____ g. Lack of information
_____ h. Lack of transportation

	Lack of Time	Too Far Away	Too Crowded	Lack of Money	Areas Not Properly Administered	Not Interested	Lack of Transportation
Lack of Time	1.00						
Too Far Away	0.14	1.00					
Too Crowded	0.01	0.21	1.00				
Lack of Money	0.12	0.17	0.02	1.00			
Areas Not Properly Administered	0.00	0.17	0.30	0.18	1.00		
Not Interested	0.03	0.03	0.00	0.08	0.10	1.00	
Lack of Transportation	0.05	0.16	-0.02	0.34	0.14	0.19	1.00

Table 5. Varimax Rotated Factor Matrix: Importance of Outdoor Recreation Blockages

	Personal Factor	Area Characteristics Factor	Convenience Factor	Communality
Lack of time	0.02	-0.11	(0.82)	0.68
Too Far Away	0.13	0.46	(0.53)	0.50
Too Crowded	-0.16	(0.82)	0.04	0.69
Lack of Money	(0.62)	0.10	0.34	0.51
Areas Not Properly Administered	0.26	(0.73)	-0.07	0.60
Not Interested	(0.61)	0.02	-0.26	0.44
Lack of Transportation	(0.77)	0.02	-0.14	0.62
% Total Variance	25.4	17.7	14.9	58.0
% Common Variance	43.8	30.5	25.7	
Eigenvalues	1.8	1.2	1.0	

Table 6. Range of Possible Factor Index Scores for Dependent Variables

	Low (Maximum Importance)	High (Maximum Unimportance)
Facility Factor	- .455	5.317
Activity Factor	-1.223	1.590
Personal Factor	-3.148	.883
Area Characteristics Factor	-1.371	2.070
Convenience Factor	-0.934	1.578

Table 7. Percentage Responses to Items Used For Development of Indices Treated As Dependent Variables (Modal Category Enclosed In Box)

	Item	1 Important	2 Slightly Important	3 No Opinion	4 Slightly Unimportant	5 Unimportant	Mean	Standard Deviation
Enjoyment Variables	Uncrowded Parks	[63.9]	24.8	5.3	3.1	2.9	1.6	0.6
	Availability of Convenience Facilities	[66.9]	21.4	4.5	3.6	3.6	1.6	1.0
	Variety of Recreational Experiences	30.4	[33.3]	15.4	10.5	10.4	2.4	1.3
	Orderly Clean Areas	[82.6]	11.0	3.3	1.2	1.9	1.3	0.8
	Park Sponsored Activities	22.9	[29.8]	14.2	13.5	19.6	2.8	1.4
Blockage Variables	Lack of Time	[45.4]	22.7	10.5	7.9	13.5	2.2	1.4
	Too Far Away	16.3	[25.1]	16.6	16.4	[25.5]	3.1	1.4
	Too Crowded	[39.4]	25.3	17.0	9.2	9.1	2.2	1.3
	Lack of Money	10.6	13.3	18.8	14.6	[42.8]	3.7	1.4
	Areas Not Properly Administered	16.6	13.9	[41.3]	9.8	18.4	3.0	1.3
	Not Interested	10.5	13.0	[33.9]	10.9	31.7	3.4	1.3
	Lack of Transportation	3.1	3.1	19.6	4.7	[69.5]	4.3	1.1

Table 8. Correlation Matrix for Selected Independent Variables and Recreation Enjoyment Indices**

	Family Size	Age of Household Head	Income	Facility Factor Index	Activity Factor Index
Family Size	1.000	-0.168*	0.192*	0.034*	-0.006
Age of Household Head		1.000	0.001	0.013	-0.004
Income			1.000	-0.008	0.027
Facility Factor Index				1.000	-0.003
Activity Factor Index					1.000

*Significant Beyond the .05 level.
**Since case deletion was used in the regression analysis, slight differences will be noted in Tables 8 and 9 in terms of intercorrelation of independent variables. Different cases were missing as a function of the use of different dependent variables.

Table 9. Correlation Matrix for Selected Independent Variables and Recreation Blockage Indices

	Family Size	Age of Household Head	Income	Personal Factor Index	Area Characteristics Factor Index	Convenience Factor Index
Family Size	1.000	-0.157*	0.195*	-0.005	-0.007	-0.036*
Age of Household Head		1.000	0.011	-0.105*	-0.020	0.109*
Income			1.000	0.128*	-0.010	0.045*
Personal Factor Index				1.000	-0.000	0.002
Area Characteristics Factor Index					1.000	0.001
Convenience Factor Index						1.000

*Significant beyond the .05 level.

Table 10. Summary Statistics For Stepwise Regression Analysis of Selected Independent Variables Against Recreation Attitude Factor Indices: Presented In Unstandardized Regression Coefficient Form (Standard Errors In Parentheses)

Dependent Variable	Family Size X_1	Age of Household Head X_2	Income X_3	Coefficient of Determination:- R^{2**}
Facility Factor Index				
Step 1	0.021* (0.009)			0.001
Step 2	0.023* (0.009)	0.001 (0.001)		0.001
Step 3	0.025* (0.009)	0.002 (0.001)	-0.012 (0.011)	0.001
Activity Factor Index				
Step 1			0.021 (0.011)	0.001
Step 2	-0.007 (0.008)		0.023* (0.001)	0.001
Step 3	-0.008 (0.009)	-0.001 (0.001)	0.023* (0.011)	0.001
Personal Factor Index				
Step 1			0.100* (0.011)	0.016
Step 2		-0.008* (0.001)	0.101* (0.011)	0.027
Step 3	-0.031* (0.009)	-0.009* (0.001)	0.109* (0.011)	0.030
Area Characteristics Factor Index				
Step 1		-0.002 (0.001)		0.000
Step 2	-0.006 (0.008)	-0.002 (0.001)		0.000
Step 3	-0.005 (0.008)	-0.002 (0.001)	-0.006 (0.011)	0.000
Convenience Factor Index				
Step 1		0.008* (0.001)		0.012
Step 2		0.008* (0.001)	0.034* (0.011)	0.013
Step 3	-0.018* (0.008)	0.008* (0.001)	0.039* (0.011)	0.014

*Significant beyond the .05 level.
**Adjusted for loss of degrees of freedom.

Table 11. Summary Statistics for Analysis of Variance of Selected Independent Variables For Recreation Attitude Factor Indices

	Explained Mean Square Variance	Residual Mean Square Variance	F-Ratio	ETA^2
Facility Factor Index				
Location of Residence	1.372	1.005	1.366(NS)	0.001
Female Occupation	0.352	1.005	0.350(NS)	0.000
Male Occupation	2.029	1.004	2.022(NS)	0.002
Type of Housing	0.236	1.003	0.236(NS)	0.000
Activity Factor Index				
Location of Residence	0.988	1.002	0.986(NS)	0.001
Female Occupation	0.089	1.006	0.088(NS)	0.000
Male Occupation	0.889	1.005	0.884(NS)	0.001
Type of Housing	0.354	1.001	0.354(NS)	0.000
Personal Factor Index				
Location of Residence	3.122	0.993	3.143*	0.003
Female Occupation	4.069	0.992	4.101*	0.003
Male Occupation	10.125	0.987	10.261*	0.008
Type of Housing	0.096	1.000	0.096(NS)	0.000
Area Characteristics Factor Index				
Location of Residence	9.586	0.994	9.586*	0.008
Female Occupation	0.592	1.008	0.588(NS)	0.000
Male Occupation	4.269	1.005	4.248*	0.004
Type of Housing	1.840	0.999	1.841(NS)	0.002
Convenience Factor Index				
Location of Residence	3.382	1.000	3.383*	0.003
Female Occupation	0.385	0.991	0.389(NS)	0.000
Male Occupation	3.838	0.988	3.885*	0.004
Type of Housing	1.042	1.001	1.041(NS)	0.001

*Significant beyond the .05 level.
NS = Not Significant at the .05 level.

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