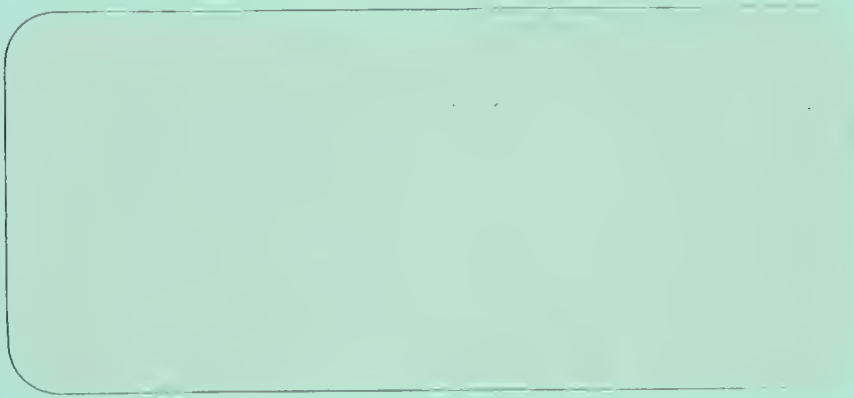# Faculty Working Papers

THE PSYCHOLOGICAL STRUCTURE OF LEISURE:

ACTIVITIES, NEEDS, PEOPLE

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#319

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ABSTRACT:

The present study demonstrates a technique for clustering leisure activities which takes into consideration individual differences in the perceived needs that the activities satisfy. This extends past studies which have clustered leisure activities based only on participation ratings. Separate factor analyses are performed on activities, the needs they satisfy, and individuals. These are then integrated in a three-mode factor analysis to describe how different subgroups of individuals view clusters of leisure activities in terms of the needs they satisfy. Implications of the results for the planning and delivery of leisure services are discussed.

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The Psychological Structure of Leisure:

Activities, Needs, People

A major effort among leisure researchers in recent years has been the classification of leisure behaviors into distinct types of related groups. Perhaps the major reason for this interest is the possibility that activities in the same group can be substituted for one another (cf. Hendee & Burdge, 1974). One important basis for substituting activities should be the needs they satisfy. The identification of what needs are satisfied by particular leisure alternatives can aid in providing a set of activities that will be attractive to the most users. The current study demonstrates a new method for grouping activities and identifying how groups of activities vary depending on the needs they fulfill for different types of people. This technique overcomes several weaknesses of past research.

Past efforts to classify activities into meaningful groups have had several problems. Most attempts to group activities have used factor or cluster analytic procedures (e.g., Bishop, 1970; Goodale, 1965; Procter, 1962; Stein & Lenrow, 1970; Witt, 1971). There are several problems with these approaches to clustering activities. For instance, Beaman (1975) has suggested that factor analysis is only appropriate for grouping activities when the same organization of the activities is appropriate for all subgroups in the sample. While there has been some consistency in factor structures, Schmitz-Scherzer, Rudinger, Angleitner, and Bierhoff-Alfermann (1974) found that their factor structure did not replicate across four different samples. This supports the plausibility of Beaman's (1975) argument if the non-replicability occurred because each sample was composed

of different subgroups who differed in their perceptions of leisure activi-
ties. Another possible problem with factor analysis is interpreting the
meaning of high correlations among items. For example, a high correlation
between two items may indicate that satisfaction with participation in the
first activity is contingent on participation in the second activity (e.g.,
Beaman, 1975). Thus, one activity could not be substituted for the other
despite the fact that they were in the same factor.

Another approach has been to use cluster analysis to create groups of
people who participate in similar leisure activities (e.g., Burton, 1971;
Romsa, 1973; Ditton, Goddale & Johnsen, 1975). This technique begins to
deal with the fact that individuals differ in their leisure behavior.
Another technique has directly measured the perceived similarity among
activities (Becker, 1976) and attempted to interpret the basis of the
similarity (Ritchie, 1975). This approach provides useful information
about people's perceptions of leisure activities.

There is one potential conceptual problem with all the methods of
analysis which does not seem to have been considered in past research. The
results are going to depend on what dependent variable is analyzed. Most
analyses are based on people's ratings of how much they do each activity.
However, we would not expect two activities to be substitutable merely
because they were done a similar amount of time. Rather, substitutability
should be based on the similarity of the activities on dimensions which
determine choice, such as the needs they fulfill or the amount of pleasure
they provide.

One dimension which should determine leisure choices and be an important
basis for substitutability is individual needs. Basically, individuals should

be more attracted to, and participate in, activities which meet their needs. Thus, different activities which meet the same needs may be substitutable for one another.

Research in leisure has not specifically measured activity related needs. However, theories of human needs have been identified in other contexts which may be useful in the area of leisure. Maslow (1968) suggests a hierarchy of needs which include, from lowest to highest, physiological, security, social, esteem, autonomy, and self-actualization. Alderfer (1972) suggests three needs which correspond to those of Maslow: existence (physiological and security needs), relatedness (social needs), and growth (esteem, autonomy, and self-actulaization). A series of studies in the area of organizational psychology has focused on attributes of tasks which meet growth needs when they are present in an activity (Turner & Lawrence, 1965; Hackman & Oldham, 1975). These include feedback, variety and autonomy. Such attributes identified in a work context may also be relevant to leisure activities.

In order to develop a psychologically meaningful categorization of leisure activities, three things should be taken into account: the activities themselves, the needs they satisfy, and individual differences in perceptions of the activities and their need satisfying properties. The current study demonstrates an analytic technique for developing groups of leisure activities considering the activities, their need satisfying properties and individual perceptions.

<div align="center">Method</div>

Sample

Complete data were collected from 83 students (primarily male), enrolled in an introductory course in organizational behavior in the department of

business administration at a large midwestern state university. The students
received course credit for their participation in the study. While the
sample is small, the three-mode factor analysis used was designed specifical-
ly for small sample sizes. The data also exhibit high reliability and are
used to demonstrate the activity-need-individual analysis, rather than to
generalize to other samples.

Questionnaire

A paper-and-pencil instrument was designed to measure the presence of
need satisfying attributes in a set of leisure activities and occupations.
The thirty leisure activities were chosen to represent the factors derived
in the Bishop (1970), Witt (1971) and McKechnie (1974) studies. The leisure
activities used in the study are listed in Table 1. The ratings of occupations
are not analyzed here.

The students rated each activity on a variety of attributes. The at-
tributes were designed to measure the need states specified in Maslow's
theory. Some were designed by the authors and others were derived from
those used in organizational psychology to measure needs satisfied by jobs
(Hackman & Oldham, 1975). The items utilized are included in Table 2.
Since most individuals have their basic physiological needs satisfied,
higher level needs are presumed to be more salient. Several items were in-
cluded to measure security and social needs (i.e., "feeling secure," "develop-
ing close friendships," and "cooperating with other people"), however, em-
phasis was placed on the higher level needs of esteem, autonomy, and self-
actualization. One important aspect of growth needs is feedback or know-
ledge of results of one's performance (Hackman & Oldham, 1975). Three items
were generated to measure feedback: "seeing the results of your efforts,"

"knowing how well you are doing without hearing it from others," and "hearing how well you are doing from other people." Additional growth attributes include "doing many different things, using a variety of skills and talents," and "feeling personal growth, utilizing full potential." Three general questions were also asked: the degree to which "feeling satisfied" derives from the activity, "If you had the opportunity, how much would you like to ..?", and "In the last year, how much have you..?" The name of each activity was inserted for the last two questions. In all, 15 items were rated for each activity. Individuals indicated the degree to which each attribute applied to the activity on a seven-point scale ranging from 1 ("very little") to 7 ("very much"). (For participation, the negative end of the scale was "not at all.") The ratings for each leisure activity were made on a separate page and the pages were assembled in a different order for each rater. In addition, five different random orders of the need ratings were used throughout each questionnaire. Each order of need ratings occurred an equal number of times for each activity across the sample. These procedures controlled for any effect of the order of presentation of the needs and activities, including possible fatigue over the 50 minute rating session.

Analysis

Three-mode factor analysis (Method 1 for small samples; Tucker, 1966) was used to examine the relationships among the three "modes"; activities, needs and individuals. This procedure has been mentioned by Bishop (e.g., Bishop & Witt, 1970) as potentially interesting for use in leisure research. It extracts factors in each of the modes and then derives interrelationships across modes by means of a "core" matrix. Specifically, a factor analysis

is conducted on each mode separately. Three sets of factors result, one for activities, one for needs, and one for individuals. The core matrix is then calculated which looks at the interrelationships among activities, needs and individuals.

In the current study, each factor matrix was submitted to a Varimax rotation such that the resulting factors within each mode accounted for an approximately equal proportion of common variance. The original core matrix was then multiplied by the inverted transformation matrix for each mode which was calculated from the derivation of the Varimax rotation.

Results

In order to assess the reliability of the data, the sample was randomly divided in two (n = 42 and n = 41) and the three-mode factor analysis was performed on each subgroup. The results in each case were strikingly similar to each other and to those found for the total sample in terms of 1) the factor analyses of each mode, 2) the items loading highly on each factor, and 3) the magnitude and direction of factor scores in the rotated core matrix. Given this stability, the results of the total sample can be considered reliable.

The results of the three-mode factor analysis are presented in two parts.. First, the factor analyses of the separate modes are discussed. Second, the core matrix exhibiting the interaction between modes is examined.

Analysis by Modes

The factor analysis of the activities resulted in three factors which accounted for 55% of the total variance. Since each additional factor accounted for less than 5% of the total variance, the first three factors were maintained for subsequent analyses. The loadings on each factor following

the Varimax rotation are presented in Table 2. Given the distribution of
loadings, a cutoff of .25 was set for inclusion of an activity in a factor.
Each factor was then interpreted on the basis of the activities with loadings
greater than or equal to .25. The first factor is labeled Sports. It
includes playing baseball, basketball, football, and tennis as well as
camping. Visiting friends is also associated with this factor, perhaps
since individuals generally participate in sports activities with their
friends. The second factor, termed Cultural-Passive, is comprised of the
following items: attending concerts, going to movies, visiting museums,
reading, listening to records, attending sports events, and watching TV.
The last factor is labeled Productive-Intellectual. It includes painting
and drawing, knitting, playing chess, cleaning, cooking, and hunting.
Visiting friends is negatively related to this factor, perhaps indicating
that these activities are primarily done alone.

Insert Table 1 about here

Three factors were extracted from the analysis of the 15 need ratings,
accounting for 63% of the total variance. Each additional factor accounted
for less than 6% of the variance, so only the first three factors were used
for subsequent analysis. Table 2 presents the factor loadings resulting
from the Varimax rotation. Inclusion of an item in a factor required a
loading of .25 or greater. The first factor, termed Feedback, is comprised
of items dealing with knowledge of results of one's performance in an
activity. Items with high loadings were "seeing the results of your efforts,"
"knowing how well you are doing without hearing it from others," and "hearing

how well you are doing from other people." "Pressure to do well" is also highly related to this factor. Participation loaded negatively, suggesting that students may be less likely to engage in leisure activites with clear feedback and pressure to do well. The second factor in the analysis of the needs is labeled Liking since the item with the highest loading asked the respondents how much they would like to perform the activity if the opportunity arose. Other items with high loadings were "feeling satisfied," and "seeing the results of your efforts." Interestingly, task significance (i.e., "significantly affecting the lives and well-being of others) was negatively related to this factor. Apparently activities that are likeable and satisfying are not seen as important to others. The last factor is labeled Positive Interpersonal Involvement. This includes items such as "significantly affecting the lives and well-being of others" and "feeling important or special." Other items loading highly on this factor are conceptually related to satisfying social and security needs (i.e., "feeling secure," "developing close friendships," and "cooperating with other people"). The questions dealing with liking and participation are also related to this dimension.

Several items which have been found to be important in the context of work did not load on any factor. They were related to satisfying growth needs and include, "doing many different things, using a variety of skills and talents," "responsibility for making decisions," and "feeling personal growth, utilizing full potential." Perhaps these items are not as relevant for the description of these leisure activities by the present respondents.

Insert Table 2 about here

Three factors were extracted from the intercorrelations among the individual respondents accounting for 51% of the total variance. Additional factors each accounted for less than 3% of the variance so were excluded from further analyses. The purpose of the three-mode factor analysis is to define the individual factors in terms of the activity and need dimensions. Thus, the meaning of these factors becomes clear in the three-mode analysis discussed next.

Three-Mode Analysis

The original activities (30) by needs (15) by individual (83) matrix of data points was reduced to a 3 X 3 X 3 core matrix (See Table 3) consisting of the relationship among the rotated activity, need and individual factors just discussed. The values in the matrix are factor scores rather than factor loadings, hence the numbers can exceed one. The more positive the score, the higher the mean rating on the scale; the lower the score, the lower the mean rating.

Insert Table 4 about here

The interaction of the three modes can be described in terms of how an average person from each of the individual factors rates each of the activity and need factors.

The first individual factor appears to be a person who likes all types of leisure activities, and likes Cultural-Passive activities most. Productive-Intellectual and Sports activities are viewed as high in Feedback whereas Cultural-Passive activities are seen as low in feedback. This type of respondent views all activities as low in Positive Interpersonal Involvement, especially those categoriz

as Productive-Intellectual. The second individual factor describes an individual who does not like leisure activities as much as the other respondents. Liking for Sports is higher than liking for the other factors. All types of leisure activities are perceived as low in both Feedback and Positive Interpersonal Involvement. The third individual factor, similar to the first, represents an individual who likes all types of leisure activities but likes Sports the most. He/she views Sports and Productive-Intellectual activities as high in Feedback. However, the person denoted by the third individual factor differs from both other groups in that he/she perceives Sports as high in Positive Interpersonal Involvement.

DISCUSSION

The results of the factor analyses of the leisure activities replicate the dimensions found in previous studies (Witt, 1971; McKechnie, 1974; Ritchie, 1975) For example, the Sports factor resembles McKechnie's Neighborhood Sports and Glamour Sports factors, Ritchie's Active Sports cluster, and Witt's Sports dimension. The Productive-Intellectual factor in the present study is analogous to McKechnie's Crafts and Intellectual factors and Ritchie's Achievement-Oriented Hobbies cluster. The Cultural-Passive dimension of the present study parallels McKechnie's Slow Living and Witt's Adolescent-Social and Aesthetic-Sophisticate. As was true in other studies (e.g., McKechnie, 1974), Bishop's (1970) dimensions (i.e., Active-Diversionary, Potency, and Status) contain activities that are distributed among the three dimensions found here.

While the leisure dimensions are highly similar to those reported in other studies, the three-mode factor analysis provides a further, needed understanding of the psychological structure that underlies the perceptions of these leisure dimensions. Specifically, the respondents viewed leisure activities in terms of three need dimensions: Liking, Feedback, and Positive Interpersonal Involvement. Moreover, clusters of individuals were defined in terms of how they viewed the three types of leisure activities on these need dimensions. For example, two groups of individuals (individual factors I and III) liked all leisure activities presented and viewed Productive-Intellectual and Sports activities as high in Feedback. However, one of these groups (III) saw sports activities as high in Positive Interpersonal Involvement, where the other (I) type did not. The other group of individuals (II) liked all leisure less than the other groups and generally viewed all activities as low in Feedback and Positive Interpersonal Involvement.

While the results of a single study should not be considered con-clusive there are several ways in which the approach illustrated here can be used in practical settings. People should be asked why they chose to get involved in particular leisure programs or activities. Their reasons should provide a rough estimate of the needs which they wish to fulfill by their participation in such activities. This understanding of needs can then be used to guide program development or implementation. For example, if a segment of the population served expects information on how well they performed compared to other individuals in a sports event, such information should be made available. If feedback is of little concern to most individuals,

investing in a electronic scoring device which displays game statistics may be a waste of money and not enhance the attractiveness of the sports facility to members of the community. As another example, when individuals associate the satisfaction of social needs with participation in leisure programs or activities, they will respond best when they are offered group activities.

The results of the present study are meant to be an example of the type of data that must be collected if planners of recreation and leisure facilities are to understand how the population served by these facilities differ in their views of the needs fulfilled by leisure activities. If individuals within a fairly homogeneous sample, such as the students used here, differ in their perceptions of leisure, then people in general are probably even more varied. Identifying these subgroups in terms of demographic character- istics is not necessary for effective utilization of this information. Knowledge of what needs individuals wish to satisfy when they engage in various types of activities may be sufficient for designing leisure delivery systems that will be of value to, and will be used by, most individuals. The particular set of leisure activities and attributes that are examined will depend upon the situation. Once preliminary information is gathered, other, simpler, techniques than three-mode factor analysis can be used to analyze the data. For example, mean differences in ratings of needs desired in different leisure activities may provide sufficient data for some purposes. Such information would go beyond the rates of participation data typically collected in order to understand why individuals engage in particular activities.

Table 1

Rotated Factor Loadings for Activities

Activities	Sports	Cultural- Passive	Productive- Intellectual	h^2
		Factors		
visiting friends	36	12	-29	23
playing baseball	35	-06	-07	13
playing football	35	-09	-03	13
playing basketball	33	-09	-01	12
playing tennis	28	-01	05	08
camping	26	07	-07	08
playing records	01	40	-07	17
going to the movies	00	39	-02	15
watching television	-11	38	04	16
attending concerts	03	38	-07	15
attending sports events	14	33	-13	14
visiting museums	-07	30	08	10
reading	-01	29	13	10
knitting or crocheting	-10	06	43	20
painting or drawing	00	-03	34	12
cleaning the house	-09	02	34	12
playing chess	11	-05	27	09
cooking or baking	02	01	27	06
hunting	03	-02	25	07
boating	19	12	01	05

Table 1 Continued

| Activities | | Factors | | |
	Sports	Cultural- Passive	Productive- Intellectual	$\underline{h}^2$
going fishing	09	10	19	05
playing golf	22	-02	13	07
playing a musical instrument	18	-02	13	05
playing poker	10	-05	18	05
playing pool	13	02	17	05
shopping	-01	15	17	05
snow skiing	20	01	14	06
playing squash	23	-01	09	06
swimming	13	10	15	05
waterskiing	20	05	13	06

Note: Items are arranged to maximally disclose simple structure. Decimals have been omitted. Loadings greater or equal to 25 have been underlined.

Table 2

Rotated Factor Loadings for Needs Ratings

Needs	Feedback	Liking	Positive Interpersonal Involvement	h^2
seeing the results of your efforts	<u>45</u>	<u>27</u>	-12	29
knowing how well you are doing without hearing it from others	<u>41</u>	10	-01	18
hearing how well you are doing from other people (e.g., co-workers, team-mates)	<u>39</u>	-01	07	16
In the last year, how much have you____?(participation)	<u>-33</u>	19	<u>47</u>	37
pressure to do well	<u>32</u>	-19	15	16
doing many different things, using a variety of skills and talents	<u>29</u>	-01	12	10
feeling satisfied	15	<u>56</u>	-03	34
If you had the opportunity, how much would you like to ___? (liking)	-20	<u>55</u>	<u>32</u>	44

Table 2 Continued

Needs	Feedback	Liking	Positive Interpersonal Involvement	h^2
significantly affecting the lives and well-being of others	-02	-41	40	33
cooperating with other people	10	-04	34	13
developing close friendships	04	04	34	12
feeling secure	05	02	29	09
feeling important or special	15	-12	28	12
feeling personal growth, utilizing full potential	19	16	18	09
responsibility for making decisions	23	-12	19	10

Note: Items are arranged to maximally disclose simple structure.   Decimals have been omitted.   Loadings greater or equal to 25 are underlined.

Table 3

Core Matrix Based on

Rotated Factors

Individual Factors	Activities Factors	Feedback	Liking	Needs Factors Positive Interpersonal Involvement
I	Sports	60.1	45.5	9.9
	Cultural-Passive	-53.2	58.0	-16.4
	Productive-Intellectual	59.9	38.3	-34.5
II	Sports	-17.1	37.0	-35.4
	Cultural-Passive	-94.3	25.3	-66.1
	Productive-Intellectual	- 8.1	8.9	-86.4
III	Sports	77.2	65.8	64.0
	Cultural-Passive	-47.7	40.6	-14.9
	Productive-Intellectual	61.3	29.4	-10.9

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