

## OUTDOOR RECREATION TREND RESEARCH: MAKING THE POSSIBLE PROBABLE<sup>1</sup>

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Outdoor recreation research has largely ignored the fundamental requirement of science that findings be replicative. "The only way to establish replicability, of course, is to replicate."<sup>2</sup> Because of this, we know practically nothing about outdoor recreation trends. "Trends, in statistics, (is) a steady change in a variable or set of related variables in a certain direction (for example, a steadily increasing magnitude or frequency of occurrence of a variable) for a period of time."<sup>3</sup> Any definition of trend implies the systematic observance of a phenomenon more than one time. This time period must be one that is great enough that it does not measure merely cyclical fluctuation. The Dictionary of Sociology alludes to this in defining a secular trend: "A long-term trend, that is, a trend that permits for a long enough period of time so that it is clearly not merely a phase of a cyclical movement. Cyclical fluctuation may occur in the course of a secular trend, but there is always a clear, long-range movement in a certain direction despite the short run variations."<sup>4</sup> In outdoor recreation research, for example, we might find that camping in developed areas varied cyclically according to whether it was a week day or week end and according to month of the year, but no secular trend can be established unless we measure such camping in more than one year.

Trend analysis should be understood as one form of aggregation. Aggregation accomplishes two purposes: it reduces errors of measurement and it establishes a range of generalization. Perhaps the most common form of

aggregation is aggregating over individuals to reduce errors of measurement associated with individual differences.<sup>5</sup> Thus, we are likely to seek to sample among subjects with reference to individual differences which may constitute variables which intervene upon the relation between the dependent and independent variable.

Another form of aggregation is aggregation over stimuli and/or situations to reduce error variance associated with the unique contribution of specific stimuli or situations and determine the class of stimuli or situations to which the results can be generalized.

Thirdly, we may aggregate over different research measures to minimize variance associated with a single method rather than true variance.

When we replicate a study we are aggregating over trials or occasions since, not only may there be high component of error of measurement, but also since otherwise there is no way of determining whether the results can be generalized over time.

Ideally, research in outdoor recreation would seek to aggregate in all four of these areas, but historically it has only usually attempted to aggregate over only individuals and occasionally over stimuli or situations or measures. The scant attention to replication (aggregating over trials or occasions) means we know little about change and the direction of change in outdoor recreation. The consequences of this situation are great. For instance, we have little idea if the satisfaction levels of users of national parks have increased or decreased in the last decade. We don't know if tennis is more popular this year or last. It is not possible to say if income is a better prediction of participation in water skiing now than it was a decade ago. Is crowding more or less a problem in the mind of state park users than it was five years ago?

A number of situations explain why so

<sup>5</sup>op cit, Epstein, p. 19.

<sup>1</sup>Paper presented at the National Outdoor Recreation Trends Symposium, Durham, NH, April 20-23, 1980.

<sup>2</sup>Seymour Epstein, "The Stability of Behavior: Implications for Research," in press, 1980. American Psychologist.

<sup>3</sup>George A. Theodorson and Achilles G. Theodorson, Modern Dictionary of Sociology. New York: T.Y. Crowell, 1969, p. 442.

<sup>4</sup>Ibid, p. 443.

little replication of outdoor recreation research takes place. Such explanations are more in the political, financial and organizational realm than in the methodological realm.

#### SITUATIONS MITIGATING AGAINST LONGITUDINAL RESEARCH

While a number of methodologies exist for conducting longitudinal research, the following situations have usually meant outdoor recreation research has been largely cross-sectional.

1. Replication of studies has generally been considered low status by social scientists. Many journals won't publish replications of existing studies.

2. Funding for outdoor recreation is usually extremely tenuous. The researcher is often encouraged to "do something quick".

3. Research done in-house by government agencies concerned with outdoor recreation is politically sensitive and subject to change without notice. No state or federal agency can guarantee that a program of outdoor recreation will last for longer than four years at most, and usually for not more than one. New administrators, new researchers, new financial situations, changes in political constraints, demands of agency constituencies -- all these factors mitigate against trend research. As the Committee on Assessment of Demand for Outdoor Recreation Resources of the National Academy of Sciences put it:

"Although surveys have been a dominant form of data gathering and analysis in outdoor recreation for many years, much of the richness of the resulting information has been lost because of lack of comparability of survey questions and sampling methods over time and over geographic areas as well as the limited scope of these inquiries. The ability to detect trends and changes in perceptions, attitudes and preferences vis-a-vis outdoor recreation has been limited by the lack of comparability of sample design and questionnaire format over time."<sup>6</sup>

Surveys undertaken by the (then) Bureau of Outdoor Recreation in 1960, 1965, and 1972 illustrate this problem. As a recent, extensive assessment of these studies concluded:

"The biggest problem in these surveys were the biases which affected responses.

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<sup>6</sup>Committee on Assessment of Demand for Outdoor Recreation Resources, National Academy of Sciences, Assessing Demand for Outdoor Recreation, Washington, D.C.: NAS, 1975, p. 42.

Using 1960 as a base, the 1965 survey had a somewhat positive bias, while the 1972 survey had a definite negative bias in reporting of activity participation. These biases, in large part, were due to the inconsistency of survey design over time. This inconsistency affected comparison."<sup>7</sup>

4. A related problem is the lack of systematic data storage, which means that it is often impossible to fully compare replicated surveys with the original data base. It should be noted that some steps are being taken to help minimize this problem. First, an attempt is being made to establish a National Leisure Archive by HCRS, U.S. Department of Interior in cooperation with the University of North Carolina Institute for Research in Social Sciences.<sup>8</sup> Initially, the project will focus upon studies generated by State and Federal governments. All data archived will be available to member institutions of the University of Michigan's Institute for Social Research without charge.

A second project, the establishment of a Leisure Information Network, holds promise for data storage pertaining to leisure at an international level.<sup>9</sup> At a recent conference in Brussels sponsored by the World Leisure and Recreation Association and the European Leisure and Recreation Association, the first steps toward international storage and dissemination of data were undertaken. A linking of existing centers storing leisure data is already being explored, as are other related undertakings. The success of both these projects remains to be seen.

5. Also related is the problem of incomparability of operational definitions from study to study. While attempts have been made to establish a thesaurus of outdoor recreation term, to date, walking for pleasure, hiking and backpacking may have overlapping meanings or even be used interchangeably from study to study. The same problem exists with regard to unit of measurement. No commonly accepted interval or ordinal measures have emerged in regard to participation or other subjects of inquiry. One reason for this is a lack of aggregation of methods in such research which

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<sup>7</sup>Kirschner Associates, Inc., Interim Report--Evaluation of Five Previous Nationwide Citizen Surveys, Washington, D.C.: unpublished, 1975, p. 111.

<sup>8</sup>National Leisure Archive, John Peine, Project Coordinator, HCRS, U.S. Department of Interior.

<sup>9</sup>Leisure Information Network Conference, Gerald Kenyon, Chairman; University of Waterloo, Waterloo, Ontario, Canada.

makes any judgements about measurement effects purely speculative. While the issue of validating such measures is important, any measure which is replicated at least has the advantage of producing a consistent error. Perhaps this is one reason why many commercial organizations concerned with outdoor recreation will pay high prices for the results of periodically replicated surveys of participation undertaken by A.C. Neilsen and other private-sector pollsters.

6. Social science changes its focus with regard to outdoor recreation, as with other subjects, and such changes often lead to discontinuity. Research concerns such as crowding, motivation and satisfaction, and life stage and life cycle ebb and flow in popularity as well as evolve and such change discourages trend analysis.

These and other situations, many of which are not unique to outdoor recreation, have discouraged research into outdoor recreation trends. It would appear, however, that many things can be done to promote such research.

#### PROMOTING TREND RESEARCH

Given the previously outlined problems, what can be done to promote outdoor recreation research which is more than purely cross-sectional? It appears that few of the answers involve breakthroughs in methodology.

1. One step in the right direction would be to encourage outdoor recreation researchers to alter cross-sectional research designs to include retrospective or projective aspects. "It is possible in many cross-sectional surveys to incorporate certain characteristics of a longitudinal approach by conducting a retrospective pretest in which respondents are asked to recall their attitudes or behavior at any earlier point in time as well as the present."<sup>10</sup> Additionally, surveys can ask respondents to project future behaviors. While those steps will not, strictly speaking, produce trend data, they will give implication as to the direction of change of the phenomenon under study.

2. Those who promote, plan, fund and advise outdoor recreation research can encourage the replication of existing studies. Within colleges and universities, this may involve encouraging replication of worthwhile theses and dissertations as well as secondary analysis of two or more identical or similar data sets. In local, State and Federal Gov-

ernment, officials need to be made aware of the wastefulness of many of the cross-sectional research efforts which they undertake. There is also the need to inform officials of the benefits of replication of studies to outdoor recreation planners and managers. Among such benefits are economy and simplicity as well as the benefits of identifying trends.

At the state level, the State Comprehensive Outdoor Recreation Plans provide an opportunity for replication which could be systematically encouraged by HCRS. While standardizing SCORPS among states is neither possible nor desirable, replication, in an era of diminishing funds, could be very attractive to individual state outdoor recreation agencies.

At the federal level, it seems unlikely that research done in-house can be planned for more than four years. It may be possible, however, to give funding priority to longitudinal research and the replication of existing studies. Additionally, federal funding can be used in combination with other funds to establish a research-oriented center for the study of outdoor recreation or leisure behavior. Such an intermediate organization would potentially have advantages of stability and a minimum of political interference which could facilitate a long-term program of trend research. To date, no such center exists which is financially secure.

3. In the public, private and commercial sector, greater research efforts of a trend analysis nature can be made using data which is already being collected. Data concerning leisure monetary spending, attendance at state parks, and other subjects is often collected but never analyzed.

4. A more systematic attempt at data storage and dissemination may continue to be problematic in spite of the encouraging preliminary work concerning a National Leisure Archive and the Leisure Information Network. Underlying this problem is the continued lack of a single organization with both resources and a deep and stable commitment to recreation and leisure research. Much of the "non-cumulative effect" of recreation and leisure research reflects this situation.

5. In longitudinal research involving panels of respondents, outdoor recreation researchers can urge the inclusion of limited questions pertaining to outdoor recreation. To date, most of the valuable longitudinal data collected about recreation and leisure has come from studies whose primary concern has been some other subject. This situation is likely to continue.

<sup>10</sup>Gerald Ferman and Jack Levin, Social Science Research, New York: John Wiley and Sons, 1975, p. 42.

6. Whenever it appears intellectually legitimate, outdoor recreation researchers can utilize the same definitions, units of measurement, sampling procedures and methods of analysis of past studies. In many instances, for example, changes in activity descriptors or scaling of periods of recall have not advanced understanding since no attempt was made to validate either those measures which were discarded or those measures which replaced them. In other words, if you don't attempt to validate the measures you use, use someone else's.

In all these ways and others, outdoor recreation researchers can move closer to establishing trends in outdoor recreation. While methodological innovation may be necessary, the most important constraints appear to be a) the attitudes of outdoor recreation researchers; b) financial constraints and c) organizational and political constraints. Progress in minimizing these constraints will necessitate expanding the consciousness of both users and producers of outdoor recreation research to the benefits of and need for trend research. Only then will the possible become probable.