Analysis of Multiple Data Sets in Outdoor Recreation Research: Introduction to the Special Issue
Jerry J. Vaske a; Robert E. Manning b
a Human Dimensions of Natural Resources, Colorado State University, Fort Collins, CO, USA b Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, VT, USA

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Analysis of Multiple Data Sets in Outdoor Recreation Research: Introduction to the Special Issue

JERRY J. VASKE
Human Dimensions of Natural Resources
Colorado State University
Fort Collins, CO, USA

ROBERT E. MANNING
Rubenstein School of Environment and Natural Resources
University of Vermont
Burlington, VT, USA

Outdoor recreation research has evolved and matured over the past several decades. The modern era of outdoor recreation research can be traced to the studies supporting the Outdoor Recreation Resources Review Commission (ORRRC) in the early 1960s. Since that time, the scientific and professional literature has expanded dramatically and several trends in outdoor recreation research are evident. First, research has evolved from primarily descriptive empirically based studies of visitor characteristics and use patterns to more theoretically based analytical studies of visitor behavior and the underlying meanings of outdoor recreation. Second, the research-based literature in outdoor recreation has been synthesized in a number of conceptual/organizational frameworks (e.g., the Recreation Opportunity Spectrum, carrying capacity frameworks) that are useful for integrating multiple studies and guiding further research and management. Third, the synergistic effects of an accumulating body of research have developed a strong theoretical understanding of important issues in outdoor recreation including crowding, conflict, motivations and benefits, norms, substitutability, specialization, and sense of place. Fourth, issues addressed in outdoor recreation research continue to evolve to meet societal interests and needs including the relationship between outdoor recreation and race, ethnicity, and gender; the appropriate roles of fees in outdoor recreation; and the characteristics and impacts of new forms of outdoor recreation such as mountain biking.

Analysis of multiple data sets offers another approach for outdoor recreation research to evolve and mature. Recreation research has been traditionally characterized by cross-sectional surveys of recreation participants and, occasionally, other populations. The resulting data tend to be isolated in space and time and often lack the ability to support theoretical development and broad generalization. As multiple data sets have been generated using widely accepted and reasonably comparable study methods, new integrative analytical approaches have become possible and potentially productive. Examples of these approaches include meta-analysis, comparative analysis, time series analysis, and
cross-validation analysis. By contrasting measures of the same concept across a number of activities, resources, times, and populations, analysis of multiple data sets can reveal patterns in findings and identify causal factors that typically cannot be explored in a single study. These analytical approaches can generate knowledge (e.g., trends, theory, model-testing, validation) that is only attainable through exploration and integration of multiple data sets. To illustrate, a few such analyses have been reported for concepts such as satisfaction (Vaske, Donnelly, Heberlein, & Shelby, 1982), motivation (Manfredo, Driver, & Tarrant, 1996), crowding (Kuentzel & Heberlein, 1992; Shelby, Vaske, & Heberlein, 1989), and norms (Donnelly, Vaske, Whittaker, & Shelby, 2000; Laven, Manning, & Krymkowski, 2005; Vaske & Donnelly, 2002).

To explore the utility of analyzing multiple data sets, this special issue of *Leisure Sciences* includes five articles that illustrate some of the ways that analyses of multiple data sets can contribute to outdoor recreation research and the resulting scientific and professional literature. The article by Shelby and Vaske (2008) reviews the meta-analysis literature and explores its application to the broad field of human dimensions of natural resources and more specifically to outdoor recreation research. Meta-analysis is a quantitative technique that emphasizes results across multiple studies as opposed to results from a single investigation. The analysis strategy uses specific measures (e.g., an effect size) to indicate the strength of variable relationships across studies. The approach has considerable potential to contribute to leisure sciences.

The article by Vaske and Shelby (2008) empirically addresses crowding in outdoor recreation using the 9-point crowding scale that was developed in 1975. The scale has been widely adopted and highlights the benefits of methodological consistency in outdoor recreation research. Using data from 181 studies representing 615 evaluation contexts, the authors explore how several independent variables influence perceived crowding and suggest how measures of perceived crowding, when considered within a broad spatial and temporal context, might guide capacity-related management of parks and outdoor recreation areas.

Normative standards have been widely used to understand perceived crowding among recreationists. The article by Kuentzel, Laven, Manning, and Valliere (2008) examines the concept of norm strength to explore potential variation in norm stability and change across multiple recreational settings (i.e., 52 locations in 13 U.S. national parks). Five indicators of norm strength are used as predictor variables in a discriminant analysis to differentiate among backcountry, frontcountry, and urban proximate national park settings. Their results show strong discriminating ability. Backcountry visitors, for example, had more strongly held norms than frontcountry or urban proximate visitors. The findings indicate that the norm strength concept can help resource managers adapt to social change.

The article by Légaré and Haider (2008) combines data from three identical cross-sectional surveys (1993, 1998, 2004) to explore how hikers of the Chilkoot Trail National Historic Site of Canada were affected by the introduction of restrictive management policies (e.g., user fees, a daily visitor quota). Their analysis revolves around three motivation-based visitor segments and focuses on the stability and changes in visitor characteristics and use patterns. The results document similarities and differences between the motivation-based segments over time and as a reaction to the management restrictions. The segments also differed in their reactions to indicator variables (e.g., advanced booking time, perceived management problems, encounters and satisfaction). Such differences in visitor behavior over time highlight the value of longitudinal data in visitor monitoring protocols.

Unlike cross-sectional research, panel studies of the same individuals allow observations of discrete events, behaviors, and perceptions over multiple time periods. The article by Kuentzel and Heberlein (2008) uses panel data from boaters at the Apostle Islands National
Lakeshore in Wisconsin. The study design included an initial sample of visitors in 1975 who were surveyed in 1985 and again in 1997. The authors use a life course analysis to explore the relationship between changes in boating specialization and life course events (e.g., family changes, career changes, health issues, and developing new leisure interests). Results show that marriage had a uniformly negative effect on the five specialization indicators whereas changes in finances, retirement, and illness had selective effects. Although cause-and-effect constraints of life course disruptions were modest, developing other leisure interests had a strong negative influence on specialization, which indicated a natural process of attrition from boating over time. The authors recommend that future specialization studies need to model processes of progression and retrogression in research designs.

This collection of five articles highlights the advantages of using multiple data sets when examining a range of concepts (e.g., crowding, norms, specialization, motivation) and analytical tools (e.g., comparative analysis, meta-analysis) of interest to leisure scientists. The guest editors of this special issue hope that researchers will adopt one or more of these techniques in their work.

References


