

Article #: 31

Title: A Dual Approach to Modeling Corner Solutions in Recreation Demand

Authors: Daniel J. Phaneuf

Journal: Journal of Environmental Economics and Management; Vol. 37

Date: 1999

Pages: 85-105(KB 11/12/08)

Abstract:

This paper focuses on solving a problem with the travel cost model. Typical data for the travel cost model accounts for the total number of trips made by individuals as well as the number of trips made to each of several available sites. However, rarely does an individual visit every available site, choosing rather to visit certain sites repeatedly and making their demand for the other sites zero (called "corner solutions"). Previous models have not proven completely capable of analyzing this type of data. This paper uses a more sophisticated dual-approach model designed to measure both demand for recreation and welfare costs under hypothetical scenarios. The model is tested using data regarding demand for fishing in the Wisconsin Great Lakes region from a previous study conducted by the author.

The data was collected regarding 1989 angling behavior and 266 individuals in that study visited the Great Lakes during that season and are the focus of this study. It focuses on four general regions of fishing in the Great Lakes and calculates the price of a single fishing trip as the travel cost and the opportunity cost of travel time. Catch rate and boat ownership is used to measure the quality of the fishing experience. Since this data was taken from another study, the results are compared with the findings from [this study](#) to determine the validity of this model.

The study predictably finds that boat ownership and catch rate have a positive and significant effect on the demand for fishing trips. In the welfare analysis, several hypothetical policy scenarios are proposed, mainly revolving around the effect of increasing, decreasing, or eliminating different species of fish in the Great Lakes and therefore lowering their catch rates. This is particularly relevant based on the level of management that is already underway in the Great Lakes in fish stocking and invasive species control and welfare measures offer a beneficial value that justify the costs of continuing such programs. The results are generally consistent with expectations based on the previous study of this data for each scenario.