

Puget Sound Transportation Panel 1989-2002

INTRODUCTION

The Puget Sound Transportation Panel is the first general-purpose travel panel survey in an urban area in the United States. Initiated in 1989 by the Puget Sound Council of Governments (now the Puget Sound Regional Council), it is similar in design and direction to the Dutch National Mobility Panel, but is also descended from the long line of cross-section urban travel surveys in U.S. metropolitan areas and is more focused on the transportation and transit policy issues in U.S. cities.

Information gained from the panel is assisting in long range transportation forecasting and analysis used in decisions regarding highway and road construction, transit development, as well as carpooling and parking policies.

DESCRIPTION

The panel is composed of approximately 1700 households in the four-county central Puget Sound region (King, Kitsap, Pierce and Snohomish counties). It specifically includes households with at least one regular bus rider, and households with at least one regular carpooler. Other households, whose members drive alone for most of their trips, are also included. Members of each of these households are asked, during each wave, to record all their trips for a two-days period. Some household members are also asked to complete a questionnaire on perceptions and attitudes of different kinds of transportation.

The first wave of the PSTP was conducted in the fall of 1989. It consisted of initial contacts, a telephone interview, and travel diaries completed by members of all panel households. After the first wave, there was a follow-up in February, 1990, of an attitudes and values survey, developed by transit marketing and university researchers. The second wave, including full interviews and travel diaries, as well as some panel refreshment, took place in the fall of 1990. In the fall of 1991, another attitudes and values survey was conducted, along with demographic and work trip data updates but no travel diaries.

Subsequent waves have taken place in 1992, 1993, 1994, 1996, 1997, 1999, 2000 and 2002, all conducted in the fall except for the 1996 and 1999 surveys, which was conducted in the spring of those years. Attitude and Value questionnaires were included for each of these years except 1992 and 1994. In 1997, 2000 and 2002, additional data was collected about people's awareness and use of traveler information.

All persons 15 years and older in a household were surveyed. The same households were contacted for each wave. At the beginning of each wave, new households were recruited as

necessary to replace households that were unable or unwilling to participate in that wave. These replacements were selected to reflect the “drop-outs” as closely as possible in order to maintain consistency in the overall demographic make-up of the panel.

The PSTP database has three parts:

1. Household data
 - Size
 - Income
 - Vehicles
 - Status (moved, split household, drop-out, new to panel)
2. Person data
 - Age
 - Sex
 - Employment status
 - Occupation
 - Workplace information
 - Change of workplace/occupation status
 - School information (if a student)
 - Drivers license
 - Transit usage
3. Travel data
 - Trip purpose
 - Mode of travel
 - Travel times
 - Travel distance
 - Travel with others or alone

Attitude questions vary from wave to wave. Some questions were asked over several waves. Only those employed or were students, whether full or part time, were asked to fill out the attitude questionnaires through 1993. Thereafter, all adult household members filled out questionnaires.

Among the questions asked were:

- Rate the importance of various items or statements regarding travel in the region.
- Rate how well three ways of travel (drive alone, bus, drive with others) perform.
- What communication devices are being used and how much.
- What sources of traveler information are being used, before and during a trip, and what effect does the information have.
- Level of agreement with various statements about travel, but transit or car.
- Who should be making transportation decisions in the region, and how well or poorly are the transportation needs been met.

OBJECTIVES

A panel survey is a longitudinal survey in which similar measurements are made on the same sample at different points in time. In contrast, cross-sectional surveys provide snapshots of the population at one or more times, but do not connect systematically to prior or subsequent surveys.

There are several advantages to a panel approach:

1. Direct measurement of individual changes;
2. Ability to analyze causality about changes in place of residence, place of work, commute mode;
3. Smaller sample requirements for same statistical reliability;
4. Lower on-going costs.

And there are disadvantages:

1. Higher initial costs at empanelment;
2. Possible higher non-participation rate;
3. Attrition and replacement of panel;
4. Locating in-migrants for recruitment (regional problem).

Probably the greatest advantage is that change is measured directly on the respondents themselves, thus permitting causal inferences to be made about the effects of changes in one or more variables influencing behavior. Change is the norm, rather than the exception, in our urban areas and their mobility needs. When we measure aggregates or cross-sections, we miss many of the dynamics that affect important aspects of urban travel, such as auto trip-making or transit ridership. In recent years, the application of panel surveys to non-transportation subjects has led to dramatic challenges to prevailing wisdom on behavior and policy which had been derived from cross-sectional studies.

SAMPLE SIZES AND ATTRITION

The Panel began with 1,712 households in 1989 and has been maintained at between 1,700 and 1,900. Approximately 20 percent of the households need to be replaced each wave, with attrition largely due to the household moving. Although a relocated household can be retained in the panel if the new location is still within the 4-county region, often a household will move without a forwarding address.

The longer the interval between waves, the higher the attrition rate. The 1992 panel, two years after the previous wave, had an attrition rate of 31 percent, and the 1996 panel had a rate of 39 percent after a hiatus of 18 months.

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