

Puget Sound Transportation Panel 1989-2000

The following is a brief introduction to the Puget Sound Transportation Panel and highlights some of the findings from the 1997 “wave” of the Panel (Wave 7) which focused on Intelligent Transportation System (ITS) issues. This is designed as explanatory text for the two accompanying slide shows: “Overview of the Puget Sound Transportation Panel Survey” (pg 1), and “Personal Daily Travel Choices Survey (ITS Supplemental)” (pg 17).

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.

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, and 2000, 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 conducted along with the 1993, 1996, 1997, 1999, and 2000 waves.

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.

EXPLANATORY NOTES ON CHART SLIDES

Lifecycle (pg 6) The order of the lines in 1997, from top to bottom, are:

| | |
|----|---|
| \$ | 2+ adults, oldest 35-64, no children |
| \$ | All children in household between 6-17 |
| \$ | 2+ adults, oldest 65+, no children |
| \$ | At least one child in household less than 6 |
| \$ | 1 adult, 35-64, no children |
| \$ | 1 adult, 65+, no children |
| \$ | 2+ adults, oldest less than 35, no children |
| \$ | 1 adult, oldest less than 35, no children |

Mode of Travel (pg 6)

| | |
|----|---|
| \$ | HOV: high-occupancy vehicle (2 or more persons in vehicle). |
| \$ | SOV: single-occupancy vehicle |

Household Trip Rates (pg 7)

All panel households are classified according to regular mode of travel by household members: if any person takes the bus on a regular basis, the household is classified as a “transit” household; otherwise if any member carpools on a regular basis, the household is classified as a “carpool” household; otherwise the household is classified as an “SOV” household, even if no one in the household uses a vehicle.

Change in Mode to Work (pg 8)

This chart shows the mode of travel in 1996 for Panel members compared to their mode of travel in 1990. The table is read from lower right to upper left and shows the percentage of persons who used one particular mode in 1990 who are using that or some other mode in 1996.

For example, looking at the front row (1990 “work at home”), 83 percent of those who worked out of their home in 1990 still did so in 1996, while 16 percent in 1996 switched to driving alone to a workplace outside of home.

These data are hard to assess, because the primary mode to work on which the table is based can be difficult to determine. Many people use more than one means of travel to get to work, others may switch from day to day. We can say with some confidence, however, that SOV still dominates over other modes of travel, and that when a person not already driving alone to work switches to another mode, it’s far more likely to be to SOV than to another mode.

PERSONAL DAILY TRAVEL CHOICES SURVEY (pg 17)

This survey questionnaire was conducted in wave 7 (1997) and focused on how Puget Sound travelers use technology in transportation decisions. The survey will provide useful information for the design of intelligent transportation systems (ITS) being developed under the Smart Trek program. Smart Trek is the Puget Sound area’s \$13.7 million Model Deployment Initiative

(MDI) demonstration project, one of four in the county. It's goal is to increase the performance and efficiency of the area's transportation systems to meet growth demands.

These issues will be revisited in wave 9 of the Panel (tentatively scheduled for spring of 2000) in order to assess what impact ITS technology and the Smart Trek program has had on the region's travel.

This slide show can soon be accessed on the Puget Sound Regional Council's web site (www.psrc.org). Accompanying text will be added at a later date. For more information on Smart Trek, visit it's web page at www.smarttrek.org.

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