ODOT TRANSPORTATION NEEDS AND ISSUES SURVEY , SUMMER 2001

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INTRODUCTION

In April 2001, the Oregon Department of Transportation (ODOT) contracted with the University of Oregon Survey Research Laboratory (OSRL) to replicate the "Transportation Needs and Issues Survey" that OSRL conducted in 1998. The study's goal was to obtain statistically valid and reliable information concerning a wide variety of transportation issues. Working closely with ODOT representative, Scott Bassett, OSRL planned, pretested and implemented a telephone survey with 1,001 Oregon adults.[1]

This report summarizes the survey design, sampling methodology, and data collection, and provides a demographic profile of survey respondents. A set of six graphs summarizing overall results is also included. Detailed survey analysis will be conducted by ODOT.

SURVEY METHODOLOGY

This section describes OSRL's procedures for developing and implementing the telephone survey instrument, the sampling to conduct this representative study, and the actual data collection.

SURVEY INSTRUMENT DEVELOPMENT

The survey's broad goals were to obtain information on the transportation-related opinions, perceptions and behaviors of Oregonians, as ODOT has done semi-annually for many years. Survey questions were developed in close consultation ODOT in 1998, with special care exercised to ensure that certain survey questions directly paralleled those on previous ODOT surveys and national surveys, although many were originals. To the extent possible, the 2001 instrument replicates 1998 questions, with some exceptions.

This year's survey excluded one large group of questions asked in 1998, namely those concerning perceptions of high-density communities. Because the 1998 survey was quite long (19-24 minutes), we also agreed to exclude several individual questions, i.e., those

[1] Including one partial interview that was nearly completed

concerning road tolls, user fees, the "most important" questions in a long series of opinion questions, and a couple of questions concerning the DMV and transportation news services.

This year's survey added questions on age, sex, education, and years of Oregon residence, turned several statements into actual questions, and split a double-barreled question into two. In addition, this survey included an embedded split-ballot experiment, in which two versions of a questions were randomly asked of half of the survey sample.

The final 2001 survey instrument comprised the following specific subject areas:

1. **Satisfaction** with ODOT maintenance of highways, roads and bridges, improvements, communication, planning, and service provision.
2. **Comparison** of ODOT now to ten years ago and comparison to other states.
3. **Perceptions of local community transportation issues**, including congestion, safety, business and development needs, and enforcement of land use laws.
4. **Opinions** on gasoline taxes, studded tires, construction priorities, maintenance priorities, services to the elderly and disadvantaged, airport access, sidewalks, bike paths, Amtrak passenger service, traffic congestion, traffic laws, protecting fish and wildlife, and conserving and protecting clean air and water.
5. **Trip behavior** yesterday (car, truck, van, solo, light rail or MAX, bus, dial-a-ride, van, taxi, bicycle, walking) and in the past 4 weeks (Amtrak, commercial airline, general aviation).
6. **Prospective behaviors**: What the respondent would do if all Oregonians had to reduce vehicle miles by 20%, including more use of public transportation, bicycling, walking, ride-sharing, telecommuting, switching to a 4-day work week, telephone shopping, making fewer trips, and combining more trips.
7. **Reasons for not using public transportation more**.
8. **Employment-related trip behavior**, usual and last week.
9. **Employment-related transportation options**, including the ability to work at home, use flextime, and work 4 10-hour days instead of 5 8-hour days, as well as actual use of these options.
10. **Opinions about the DMV**, including doing more business by telephone, doing some business by computer, allowing private businesses to register vehicles and test drivers, and doing more to protect the public in new vehicle purchases, from problem drivers and from uninsured drivers.
11. **Respondents' projected use of ODOT information delivery systems to road users**, including electronic signs or reader boards on highways, radio broadcasts, information centers at highway rest areas and parks, video cameras showing live road conditions on the internet, free telephone numbers, and cable television.
12. **Basic demographic data**, including years of residence in Oregon, age, sex, education, employment, number of adults in the household, number of vehicles in the household, urban-rural community, and household income.

The survey instrument was extensively pretested using OSRL's standard three-pronged pretest procedure, involving (a) potential members of the survey population, (b) OSRL's Questionnaire Review Committee, comprised of survey experts from our staff and university-wide advisory committee, and (c) potential users of the data, including ODOT personnel. Individual questions were pretested for clarity, accuracy, validity, and variability of response. The entire instrument was pretested for flow, length, comprehensiveness, and factors which affect respondents' cooperation and attention. Based on these pretests, the survey instrument was revised and finalized.

The survey was then programmed into OSRL's computer-aided telephone interviewing system (CATI), and further pretested. A facsimile of the survey instrument is provided in the "Toplines" section of this documentation. All interviews were completely anonymous. Human subjects approval was obtained from the University of Oregon's Committee for the Protection of Human Subjects.

SAMPLING

OSRL's sampling procedure employs a random-digit-dialing (RDD) algorithm that is used in conjunction with our computer-aided telephone interviewing system (CATI). Sampling is pre-programmed and accomplished without interviewers' intervention. Telephone numbers are generated randomly by the computer and appear automatically on interviewers' computer screens. Telephone calls are placed with a computer keystroke, effectively preventing dialing errors. This sampling system avoids biases encountered from telephone books and similar lists. In addition, new and unlisted telephone numbers have an equal chance of being selected as established numbers.

For this study, 4,661 telephone numbers were randomly generated. Of those, 61% were disconnected, non-working, non-residential, fax/modem, or other types of telephone lines unsuitable for completing a survey. For 4% of the randomly generated telephone numbers, the telephone was consistently busy or never answered, and thus their suitability for interviewing could not be ascertained. For another 2% of telephone numbers, the adult in the household could not be interviewed because of illness or absence for the study duration, because the sample quota for their region had been filled, or because of a language barrier. (Surveys were only conducted in English.)

The overall survey response rate was 72% and the refusal rate was 16% [2]. Completed interviews ranged from nine to 65 minutes and averaged 17 minutes (standard deviation 6 minutes).

Survey sampling errors are calculated to assist data users in assessing how much confidence to place in a particular survey result. Large random samples, as in this study, reduce sampling error. Results for surveys in which there is low variability also have less sampling error. For example, a variable with a 50/50 proportional split has wider

[2] The response rate was calculated in following manner: Completed interviews / (Eligible sample + ((Eligible sample / (Eligible sample + Ineligible sample)) * Sample with unknown status)).

confidence intervals than a variable with a 5/95 proportional split. Finally, sampling error is affected by strata in the sample design, in this case, the five regional sub-samples.

For this study, the margin of error for an unweighted variable from the entire sample with a 50-50 proportional split is ±3 percentage points, at the 95% confidence level. This means readers of the data can be 95% sure that the true population figure is between 47% and 53% (i.e., 50% ± 3 percentage points). The intra-regional margins of error are approximately ±6.7 percentage points. The margin of error for an unweighted variable from the entire sample with a 5/95 proportional split is ±1.3 percentage points, at the 95% confidence level and within regions approximately ±2.9 percentage points.

Data Collection

Interviewer training was conducted on May 15, 2001. Interviewing was conducted May 19 – July 22, 2001. A minimum of 22 calls was made to each randomly-generated telephone number to avoid nonresponse bias. Interviewing was conducted 9:00 AM – 9:00 PM all days of the week until the target sample was achieved. CATI automatically schedules calls which do not result in interviews for different times of the day and different days of the week, or interviewers can schedule interviews for respondents at more convenient dates and times.

Altogether, 30,512 telephone calls were made to complete 1,001 telephone interviews with adults in randomly-chosen households. This sample was stratified by ODOT Region, with the aim of achieving approximately 200 completed interviews in each region. Regions were determined in the first survey question, when respondents reported the county they live in. The achieved regional samples are: Region 1 n = 200, Region 2 n = 200, Region 3 n = 201, Region 4 n = 200, Region 5 n = 200.

Profile of Survey Respondents

- The age distribution of the sample is 18-29 16%, 30-39 17%, 40-49 22%, 50-59 18%, 60-69 12%, 70+ 16%.
- Fully 90% of those interviewed were white, 3% Latino/Hispanic, 2% Asian or Pacific Islander, 1% each American Indian, mixed race, “other” and refused, and 0.4% African American.
- The sample’s sex composition is 62% female and 38% male. This result is very similar to other population surveys and reflects the population’s aging (women outlive men).
- The educational distribution of interviewees is 8% not completing high school, 28% a high school diploma or GED, 36% some college (including Associate’s degrees), and 27% a bachelor’s degree or more.
- The number of adults in households is 26% one-adult, 57% 2-adult, and 16% 3 or more adult household.
- The number of motor vehicles available for household members to use is: zero vehicles 3%, one 26%, two 42%, three 17%, and four or more vehicles 12%. Households with 4 or more vehicles are substantially more likely to be in Region 5 and in rural areas of the state.

- The sample's urban-rural distribution is evenly split, but greatly influenced by regional sample strata. In Region 1, 78% reside in self-reported urban or suburb areas, compared to 53% Regions 2 and 3, 38% in Region 4, and 26% in Region 5.
- Fifty-nine percent of the sample is employed, with a low of 52% in Region 3 and a high of 63% in Region 1.
- Median household income in the sample is just over $40,000 per year, but varies widely by region. For example, just 9% of those in Region 1 earned less than $25,000 per year, compared to one-fifth to one-quarter of those in the other four regions. Also, 27% of those in Region 1 earned $70,000 per year or more, compared to 23% in Region 4, 21% in Region 2, 14% in Region 5, and 13% in Region 3.

Finally, OSRL's split ballot experiment for two different question wordings of the same concept shows decisively different results. When 492 respondents were asked *"Do you think it is more important for ODOT to give priority to maintaining the highways, roads and bridges we already have instead of building new ones?"* 72% replied "yes." However, when 509 were asked *"Do you think it is more important for ODOT to make highway system improvements to reduce congestion, or to preserve and maintain the highways Oregon already has?"* just 43% said "preserve and maintain."