

Oregon Department of Transportation Transportation Needs and Issues Survey, Fall 1998

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INTRODUCTION

In August 1998, the Oregon Department of Transportation (ODOT) contracted with the University of Oregon Survey Research Laboratory (OSRL) to obtain statistically valid and reliable information concerning a wide variety of transportation issues. Working closely with ODOT representative Bernie Jones, OSRL planned, pretested and implemented a telephone survey with 1,091 Oregon adults. This report summarizes the survey design, sampling methodology, and data collection. A set of eight graphs summarizing overall results is also included. Detailed survey analysis will be conducted by ODOT.

SURVEY INSTRUMENT

The broad goals of the survey were to obtain information on the transportation-related opinions, perceptions and behavior of Oregonians, as ODOT has done semi-annually for many years. Survey questions were developed in close consultation ODOT. Special care was exercised to ensure that certain survey questions directly paralleled those on previous ODOT surveys and national surveys, although many were OSRL and ODOT originals.

The survey instrument comprised the following subject areas:

- Satisfaction with ODOT maintenance of highways, roads and bridges, improvements, communication, planning, and service provision;
- Comparison of ODOT now to ten years ago and comparison to other states;
- Perceptions of local community transportation issues, including congestion, safety, business and development needs, and enforcement of land use laws;
- Opinions on gasoline taxes, road tolls, user fees, 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;

- “Most important” rankings of a dozen opinions;
- 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);
- 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;
- Reasons why the respondent does not use public transportation more;
- Employment-related trip behavior, usual and last week;
- 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;
- Perceptions of proposed, new, high-density communities, with regard to safety, cleanliness, quietness, convenience, privacy, and friendliness to children, the elderly and the environment;
- 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;
- Whether respondents would use new 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 a cable TV channel; and
- Basic demographic data, including age, 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 Section 2 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 AND DATA COLLECTION

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, 4,418 telephone numbers were randomly generated. Approximately 55% of those were disconnected, non-working, non-residential, fax/modem, or other types of telephone lines unsuitable for completing a survey. For 8% of the randomly generated telephone numbers, the telephone was consistently busy or never answered, and thus their suitability for interviewing could not be ascertained. At another 2% of telephone numbers, the randomly-chosen adult for the study 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.)

Not only were households randomly chosen for this study, within households individual adults age 18 or older also were randomly selected. This was accomplished using the industry standard "most recent birthday" technique.¹ Random sampling within households is somewhat more expensive due to more callbacks required, but the representativeness of the results is enhanced.

Interviewer training was conducted on August 18, 1998. Interviewing was conducted August 19 – October 27, 1998. A minimum of 15 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 (except Sundays, 1:00 PM – 9:00 PM) 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, 24,817 telephone calls were made to complete 1,091 telephone interviews with randomly-chosen 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 = 198, Region 2 n = 292, Region 3 n = 201, Region 4 n = 194, Region 5 n = 206.

The overall survey response rate was 66.6% and the refusal rate was 5.5%². Completed surveys lasted, on average, 19-24 minutes.

¹ Interviewers read: "I would like to speak with the adult age 18 or older who most recently had a birthday. Is that you?"

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

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 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 3.0 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., $50\% \pm 3$ percentage points). The intra-regional margins of error are approximately 6.8 percentage points.

DEMOGRAPHICS

- The age distribution of the sample is 18-29 15%, 30-39 17%, 40-49 22%, 50-59 14%, 60-69 14%, 70+ 17%.
- The number of adults in households is 29% one-adult, 57% 2-adult, and 14% 3 or more adult household.
- The number of motor vehicles available for household members to use is: zero vehicles 3%, one 27%, two 40%, three 20%, and four or more vehicles 10%. Households with 4 or more vehicles are substantially more likely to be in Region 5 and in rural areas of the state.
- The urban-rural distribution of the sample is greatly influenced by the regional strata. In Region 1, 43% reside in a large city or its suburbs. In Region 2, 33% reside in medium-size cities and their suburbs and 38% reside in small cities and towns. In contrast, 52% of those Region 3 reside in small towns or rural areas. In Region 4 64% and in Region 5 84% reside in small towns or rural areas.
- People less than age 40 are more often in large cities and their suburbs. Those in their 40s and 50s are somewhat more likely to live in suburbs and rural areas. The elderly are somewhat more likely to live in small towns and rural areas.
- 56% of the sample is employed, with a low of 47% in Region 3 and highs of 62% in Regions 4 and 5.
- For household income, those in Region 1 are substantially better off than others, with 46% earning \$50,000 per year or more, compared to 29% in Region 2, 26% each in Regions 3 and 4, and 25% in Region 5. In contrast, 29% of those in Regions 2 and 3 earned less than \$25,000.