

"Studded Tires Survey"

METHODOLOGICAL SUMMARY

Instrument Design and Development: OSRL developed an original telephone survey instrument based upon OSRL and ODOT's meetings and telephone calls about ODOT's research needs. This instrument was thoroughly pretested, revised, and pretested again with potential members of the survey population, with survey experts, and with Mazen Malik. We know of no biases in the instrument design.

In order to achieve economies of scale, ODOT's survey needs were matched with those of the Oregon State Lottery. An "Omnibus" survey was created and conducted to meet both agencies' needs at lower cost, with greater time efficiency, and with less disturbance to the general public. As can be seen in examining the survey instrument, this means that both ODOT's and the Lottery's survey questions were included in the same instrument. ODOT's questions came first.

After the interviewer obtained the eligible respondent for the survey (the household head who had had the most recent birthday), ODOT's survey questions covered the following items:

- county of residence;
- number of cars, trucks, or vans owned by the household, and then, for each (up to 6 vehicles);
- whether the vehicle is 2-wheel, 4-wheel, or all-wheel drive;
- whether the vehicle is front-, rear-, or all-wheel drive;
- whether studded tires were used on that vehicle in the past winter, and if so;
- whether the studs were on 2 or 4 tires;
- month the studs were put on;
- month the studs were taken off (or planned to be taken off);
- the number of days each week that vehicle was used;
- the vehicle's main use (work, leisure, shopping, all-purpose);
- whether the vehicle is used mainly by one or more persons, and if one only;
- that person's age;
- how long ago the household started using studded tires;
- number of people in the household;
- household income from all sources.

The CATI system automatically brought up the appropriate number of "loops" for the vehicle questions depending upon the number cars.

Data Collection: Interviewer training was conducted February 18 and 19, 1995. Interviewing occurred all days of the week between February 20 and March 19, 1995, including 1:00 - 9:00 p.m. Sunday-Friday and 9:00 a.m. - 9:00 p.m. Saturdays. Altogether, 3,017 interviews were completed, including 836 in Region 1, 601 in Region 2, 370 in Region 3, 626 in Region 4, and 557 in Region 5; 18 respondents did not know what county they resided in. An additional 57 interviews were conducted in Clark County, Washington. (See the attached "Omnibus Survey County Count" for more details.) We went beyond the contracted 2,400 interviews in order to try to reach the target of 400 surveys in Region 4, but we were unable to do so, despite concerted efforts. We clearly exceeded the targets in all other regions.

Sample Design and Implementation: The survey was conducted on three samples:

1. ORPOP, the "compliant" sample from the 1994 Oregon Population Survey, for whom we were also able to merge transportation and demographic data from the summer survey;
2. RDD, a random-digit-dialed sample, to supplement the ORPOP sample with new telephone numbers, and for whom additional demographic questions were added to match the ORPOP sample; and

3. Clark County, Washington, randomly chosen from the most recent listing of residential telephone numbers, and for whom the Oregon lottery questions were dropped.

The "Survey Sample and Response Rate Reports" are presented separately for the ORPOP sample, the RDD sample, combined ORPOP and RDD, and the Washington sample. In addition, separate copies of the three different survey instruments (clearly labeled) are included with the final products of the survey.

ORPOP Sample Results: Of the 4,394 respondents to the 1994 Oregon Population Survey who agreed to be re-interviewed, 1,489 (34%) were unreachable. An additional 1% were never called. Among the remaining 2,862 sample members, 2,429 interviews were conducted (85%), 294 were not interviewed (10%), and 139 (4.8%) refused. Altogether, 14,363 telephone calls were made to complete those interviews (about 6 calls per completed interview), of which 23% were answering machines (OSRL left no messages), 19% were no answers, 17% resulted in completed interviews, 13% were when respondents were not home, 7% were when respondents were too busy at the moment, 6% were busy signals, and 4% or fewer in 19 additional disposition codes (e.g., refusal, wrong number, respondent deceased, language barrier, etc.).

RDD Sample Results: For the random digit dial sample, 7,477 telephone numbers were generated, of which 4,592 were not used and 1,199 were not usable. Among the 1,679 telephone numbers called, 588 resulted in interviews (35%), 956 were non-interviews (57%), and 1% were refusals. In all, 4,945 telephone calls were made to complete the interviews (about 8 calls per completed interview).

Clark County, Washington Sample Results: For the small Washington survey, 448 residential telephone numbers were randomly chosen, of which 189 were not attempted, and 70 were unusable. Among the 189 telephone numbers used, 57 interviews resulted (30%), with 123 non-interviews (65%) and 9 refusals (5%). 396 telephone calls were made to complete the 57 interviews (or 3 calls per completed interview).

All respondents to the survey were anonymous; that is, we have no identifying information on any person who agreed to take part in the survey.

Data Reduction and File Creation: The survey data were downloaded from the CATI system. No open-ended coding was necessary. The results from the ORPOP sample were merged with selected data items from the summer 1994 Oregon Population Survey with the same anonymous household head, namely:

- zip code;
- migration (whether respondents lived in the same house 1 and 5 years ago; if no, did they live in Oregon 1 and 5 years ago; if yes, what Oregon county they lived in; if they did not live in Oregon, where they lived 1 and 5 years ago; (N.B.: We suggest using the summary migration variable, LIVED);
- age;
- sex;
- main labor force status;
- if respondent's main status was other than employed, whether they worked at all for pay in the preceding week;
- if employed, respondent's commute time;
- how respondent gets to work;
- how many people ride in the vehicle to work (carpooling);
- perceptions of the seriousness of traffic in their community;
- for unemployed respondents, whether worked at all in past 12 months, and if yes, whether any of that was in the last 4 weeks;
- education;
- average monthly household expenditures;
- race;
- poverty level.

For the RDD sample, additional questions were added to the survey instrument which were identical to the ORPOP employment and demographic questions. The ORPOP and RDD survey results were then merged. An SPSS data file was created, and the data were delivered to Mazen Malik in ASCII.

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EXECUTIVE SUMMARY OF RESULTS

This section summarizes the overall results of the study. We recommend, however, that these overall results be interpreted with some caution. This is because the study design required disproportionately high sample sizes from relatively small regions of the state and no effort has been made to weight the results back to state population parameters. While some researchers have found that weighting affects results relatively little when dealing with a sample size as large as this study's, the most accurate and robust interpretations are to be made at the region level.

Vehicle ownership: Altogether, data were collected on 6,329 vehicles. The modal number of vehicles owned is two (39%). An additional 27% of respondents' households own just one vehicle, and 19% own three. Nine percent own 4 or more vehicles and 4% own none.

Drive: Among first vehicles mentioned by respondents, 69% are two-wheel drive and 60% are front-wheel drive. Among second vehicles mentioned, 68% are two-wheel and 55% are front-wheel. Among third vehicles, 71% are two-wheel drive and 66% are rear-wheel drive.

Studs: Of all 6,329 vehicles, 20% had studs in the winter of 1994-95. This varies substantially, however, by vehicle mention. Twenty-five percent of first vehicles mentioned had studs winter 1994-95, and over half (57%) had studs on all four tires. The modal month for putting studs on first vehicles was November (59%) followed by December (23%). The modal month for taking them off is March (49%), followed by April (23%), and February (18%). Among second vehicles, just 18% had studs last winter and exactly half were on two tires and half on four tires. The modal months follow the same pattern as first vehicles. Among third vehicles, 13% had studs last winter, 53% were on two tires, and the modal months follow the same general pattern as for first and second vehicles.

Vehicle Usage: Over half of first vehicles are used every day of the week (52%), with an additional 24% used 5 or 6 days. The modal use of first vehicles is "all purpose" (66%), followed by work (21%). Seventy-four percent of first vehicles are used by one person mainly, and the median age of that person is 48. Among second vehicles, 42% are used every day of the week and an additional 35% are used 5 or 6 days. The modal use of second vehicles is also "all purpose" (57%), followed by work (32%). Seventy-four percent of second vehicles are used by one person mainly, and the median age of that person is 46. The modal use of third vehicles follows the same pattern (55% all purpose, 30% work), 77% are used mainly by one person, and the median age is 44.

Studded Tires Usage: Among those who use studded tires, 71% use them every year, and 52% have been using them for 6 or more years. Thirteen percent began using studded tires the winter of 1994-95, and 11% started using them in the year or two before that.

Licensed Drivers: Fifty-seven percent of all respondents live in households with two licensed drivers, 27% have just one, about 13% have 3 or more, and 3% have none.

Demographics: Eighteen percent of the sample are in one-person households, 38% in 2-person household, 17% in 3-person households, and about 10% in households with 4 or more. Median household income was \$30-34,999 in 1994, 5.3% lived below poverty level, and just 2% refused to answer the income question. Median monthly household expenditures were \$1,000. Respondents' median age was 47, and 57% were female. Fifty-five percent reported employment as their main labor force status, and an additional 10% had

employment-related activity in the previous week. Thirty-one percent reported an associate's degree or higher for educational achievement, an additional 27% had some college, and 32% had a high school diploma. 91% of the sample was white. 58% had lived in Oregon 5 or more years.

Commuting (ORPOP sample only): For those employed, the median commute time was 10 minutes, 80% traveled to work by car, and of those 85% traveled alone in the car. Thirty-nine percent of the ORPOP sample contacted for the Studded Tires Survey believe that auto traffic is no a problem in their communities, and an additional 18% say it is only a small problem.