

## WASHINGTON STATE POPULATION SURVEY

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## Characteristics of Households With and Without Telephones: Analysis with 1990 Census Data

Contributors: Diana Brunink, Theresa Lowe, Don Pittenger, and Wei Yen

**T**HE 1998 STATE POPULATION SURVEY for Washington was conducted entirely by telephone interviews. This was done to maximize the survey sample size. Telephone surveys provide a relatively economical means of data collection that makes large samples feasible. Larger samples allow detailed cross-tabulations, increase the accuracy and improve the value and usefulness of survey data.

Telephone surveys, however, introduce a coverage bias by excluding households without telephones. The purpose of this report is to identify some of the major differences between households with telephones and households without telephones. To provide a better understanding of telephone availability, and the type of bias occurring in telephone surveys, this report examines the 1990 census data for Washington from Public Use Microdata Samples (PUMS) compact disc CD90-PUMSA7-R.

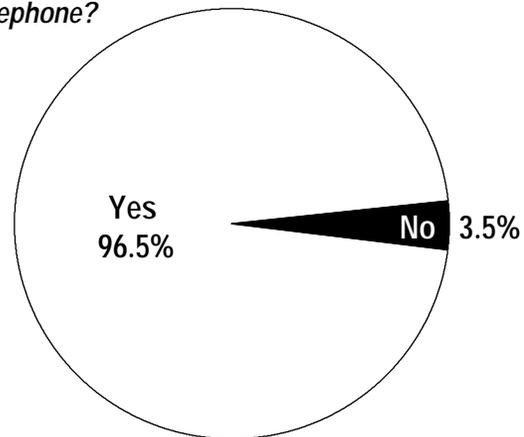
Households were classified by whether or not a telephone was present and cross-classified by various demographic and socioeconomic subjects. These classifications are not exhaustive. They do, however, provide a general indication of differences between the households included and excluded in the survey using 1990 data. While conditions may have changed somewhat since 1990, it is unlikely that many changes are significant.

### Findings

**About 3.5 percent of Washington households did not have a telephone in 1990.** This indicates that survey results involving the total population are sound.

There is, however, more of a disparity in coverage when sub-populations are considered. For example, English-speaking households, White households, and non-Hispanic households tend to have greater phone availability than their respective counterparts.

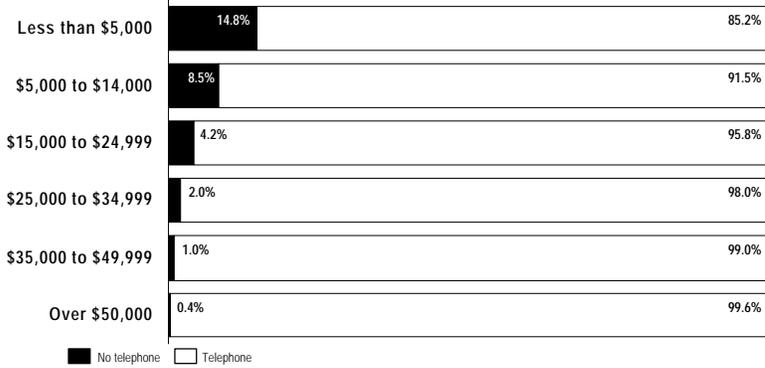
Have Telephone?



Households Represented = 1,866,447

**Probably the most significant factor in telephone availability is household income.** The mean income for households with telephones was \$37,613 while income for non-telephone households was \$15,650.

- Nearly 15 percent of households with annual 1989 income of less than \$5,000 had no telephone; the percentage in income range \$5,000 to \$14,999 was about 8.5 percent.
- Less than half a percent of households with income of more than \$50,000 did not have telephones.



*The demographic and socioeconomic characteristics related to low income, mobility, or a more transient lifestyle are also related to low telephone availability.* Home ownership and families committed to the community in which they are raising children are all associated with telephone households.

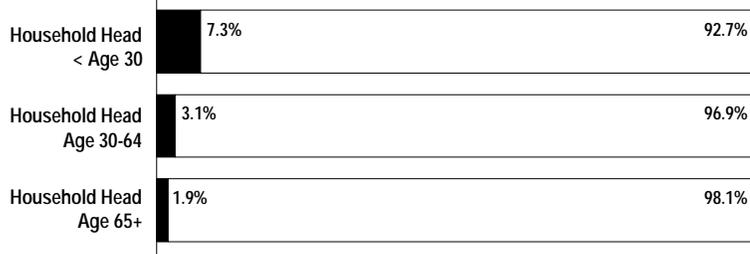
- Nearly all homeowner households have telephones; 7 percent of rental households do not.
- Telephone availability clearly increases with the age of household heads. Only 1.9 percent of households headed by persons age 65 and over do not have telephones compared to 7.3 percent of households with heads under age 30.
- Married couple households are more likely to have telephones than non-couple households.
- Non-couple households with a male head were about 1.5 percentage points less likely to have a telephone than households with a female head.

**Conclusions and Other Considerations**

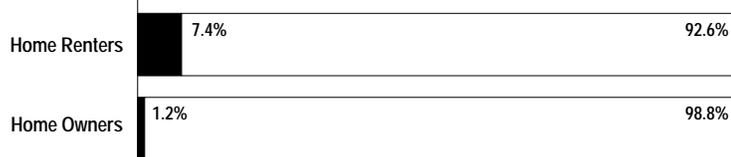
The state population survey obtained information on more than 90 percent of nearly every demographic and socioeconomic group covered. The exception is households with incomes below \$5,000.

**Households With and Without Telephones**

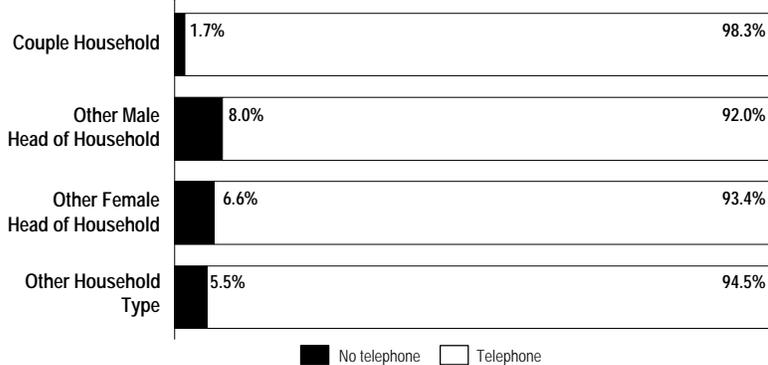
*By Age of Household Head:*



*By Ownership:*



*By Type:*



In addition to covering most households, the survey data were weighted by independent estimates of race-ethnic populations by age and sex. Weighting that includes post-stratification based on demographic variables known to be associated with telephone coverage is a means of compensating for telephone survey coverage bias. (Brick, Burke, and West 1992.) Thus, potential distortion from non-responding households was also moderated by post-ratification weighting of the state survey results.

It is important to view coverage bias in telephone surveys as one of several types of bias common to most surveys caused by data collection procedures and/or instruments. To verify findings, OFM selected several key variables in the state survey data and compared them to the results of alternative data sources such as the 1990 Census, the federal Current Population Survey (a face-to-face household interview survey), and several types of administrative data. In nearly all cases, the state population survey data compared favorably. Nevertheless, State Population Survey data users should be careful when using these data for households with extremely low incomes, or when evaluating survey data associated with low income populations.

#### Washington Households by Telephone Availability, 1990 Census

Subject	Total	Telephone	Non-Telephone	Percent Telephone	Percent Non-Telephone
All Households	1,866,447	1,800,279	66,168	96.45	3.55
Race = White	1,704,879	1,652,151	52,728	96.91	3.09
Race = Non-White	161,568	148,128	13,440	91.68	8.32
Not Hispanic	1,767,879	1,710,402	57,477	96.75	3.25
Hispanic	98,568	89,877	8,691	91.18	8.82
Household Size	2.53	2.54	2.39	-	-
Home Owners	1,168,611	1,154,334	14,277	98.78	1.22
Home Renters	697,836	645,945	51,891	92.56	7.44
English Language Only	1,656,039	1,601,658	54,381	96.72	3.28
Other Language	210,408	198,621	11,787	94.40	5.60
Couple Household	1,037,634	1,020,363	17,271	98.34	1.66
Other Male Head Household	55,458	51,048	4,410	92.05	7.95
Other Female Headed Household	171,597	160,197	11,400	93.36	6.64
Other HH type	601,758	568,671	33,087	94.50	5.50
Head < Age 30	303,729	281,664	22,065	92.74	7.26
Head Aged 30-64	1,185,099	1,148,058	37,041	96.87	3.13
Head Aged 65+	377,619	370,557	7,062	98.13	1.87

#### Household Income

Subject	Total	Telephone	Non-Telephone	Percent Telephone	Percent Non-Telephone
Mean Household Income	\$36,835	\$37,613	\$15,650	-	-
Less than \$5,000	85,509	72,867	12,642	85.22	14.78
\$5,000 to \$14,999	319,767	292,761	27,006	91.55	8.45
\$15,000 to \$24,999	338,862	324,510	14,352	95.76	4.24
\$25,000 to \$34,999	317,370	310,971	6,399	97.98	2.02
\$35,000 to \$49,999	359,763	355,857	3,906	98.91	1.09
\$50,000 to \$74,999	292,569	291,222	1,347	99.54	0.46
\$75,000 to \$99,999	88,677	88,359	318	99.64	0.36
\$100,000 and Over	63,930	63,732	198	99.69	0.31

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### References or Related Readings

Brick, J., Burke., J., and West J. (1992). *Telephone Undercoverage Bias of 14- to 21-year-olds and 3- to 5-year-olds*. National Household Education Survey Technical Report No. 2. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, NCES 92-101

Keeter, S. (1995). *Estimating telephone noncoverage bias with a telephone survey*. Paper presented at the annual meeting of the American Association for Public Opinion Research, St. Petersburg, FL.

Thornberry, O., and Massey, J. (1988). Trends in United States telephone coverage across time and subgroups. In *Telephone Survey Methodology*. Groves, Biemer, Lyberg, Massey, Nicholls, and Waksberg (Eds.), New York: John Wiley and Sons.

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