

## CENSUS 2000: EVALUATING RESIDENT COOPERATION USING MAIL RETURN RATES

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gave the respondent the opportunity to correct address information.

### A. Introduction and Background

In Census 2000, the questionnaire mailback system was the primary means of census-taking. Cities, towns, and suburban areas with city-style addresses (house number and street name) as well as rural areas where city-style addresses are used for mail delivery comprised the Mailout/Mailback areas. Update/Leave areas consisted of addresses that are predominantly not city-style. Census enumerators delivered addressed questionnaires to Update/Leave housing units. Update/Leave enumerators also made any necessary corrections or additions to Census maps and address lists as they delivered the questionnaires. Urban Update/Leave areas were inner-city areas, usually containing multi-unit structures where mail is delivered to a single point instead of the individual units. A delivery strategy similar to that in the Update/Leave areas was used in Urban Update/Leave areas. In all three delivery methodologies, the housing units were provided with first-class postage paid envelopes for returning their questionnaires.

The Census Bureau used a mail strategy consisting of multiple contacts for Census 2000 in Mailout/Mailback areas. These contacts were:

- An advance notice letter to every mailout address that alerted households that the census form would be sent to them soon
- A questionnaire to every mailout address
- A postcard to every mailout address that served as a thank you for respondents who had mailed back their questionnaire or as a reminder to those who had not

Census 2000 included two types of questionnaires for mailback:

This multiple mailing strategy used first-class postage for all mailing pieces in Mailout/Mailback areas. The volume for Mailout/Mailback areas was approximately 100 million pieces for each mailing.

- A short form was delivered to approximately 83 percent of all housing units. This form allowed the respondent to list up to 12 household members. It provided space for reporting the basic population and housing data (i.e. name, relationship, age, sex, race, ethnicity, tenure) for up to six household members and the housing unit.
- A long form was delivered to a sample – approximately 17 percent – of all housing units. This form allowed the respondent to list up to 12 household members. It included all of the short form questions, as well as additional questions on the characteristics for up to six household members and the housing unit. The long form has more questions than the short form and therefore requires a higher response burden for residents.

There was also a mailout strategy used in Update/Leave areas for reminder postcards and advance notice letters. Advance notice letters were mailed to Update/Leave housing units that had “good” addresses using first-class mail. Reminder cards were sent to housing units in ZIP codes that consist entirely of Update/Leave housing units. Those cards were sent to “Residential Customer” and delivered using third-class postage. Consequently, some housing units received the advance notice letter and not the reminder card, some received the reminder card and not the advance notice letter, some received both, and some received neither. The volume for Update/Leave areas was about 20 million questionnaires.

There is one difference between the Mailout/Mailback questionnaire and the Update/Leave questionnaire. The Update/Leave and Urban Update/Leave questionnaires

Mail return rate is a measure of respondent cooperation to the Census. The calculation of a mail return rate is based on all housing units included in the final Census count. The rate is restricted to Mailout/Mailback, Update/Leave, and Urban Update/Leave enumeration areas. The status of each housing unit was determined as of Census Day, April 1, 2000. Housing unit status is either occupied or vacant. Only occupied housing units are included in the rate. In addition, only housing units that received their questionnaire in time to return it by the start of the nonresponse followup operation are included. Therefore, the denominator is all occupied housing units that received their questionnaires by the start of nonresponse followup in Mailout/Mailback, Update/Leave or Urban

Update/Leave areas. Note that housing units to which the United States Postal Service could not deliver are excluded from the rate.

This paper will examine mail return rates from Census 2000 in these mailback areas at various geographic levels, for different types of enumeration areas (TEAs), and for different form types (short forms v. long forms) in order to evaluate the success of Census 2000 in gaining cooperation from the American public. Data collected through self-reporting and in a timely fashion through mail returns generally are considered to be of a higher quality than data collected later by enumerators in nonresponse followup (NRFU). For example, there is usually a higher rate of item nonresponse in personal visit followup interviews than in self-enumerated mail returns. An analysis of these mail return rates is invaluable for determining the success of the data collection operations of Census 2000.

## B. Methodology

Return rate refers to the number of occupied housing units with corresponding questionnaires checked in by the time of the late cut for NRFU that are not blank over the number of occupied housing units that were in the mailback universe, expressed as a percentage rounded to the nearest tenth percentage point. Those non-blank questionnaires can come in the form of an actual mail return questionnaire, a Be Counted Form (BCF), an internet return, or a response via Telephone Questionnaire Assistance (TQA).

The denominator for a given return rate is determined using a multiple step process. First, we generate a base universe consisting of distinct housing units according to the variables that correspond to the elements described above (form type, TEA, and the geographic divisions of tract, state, and county). Each housing unit must contain a population of at least one person and be in a mailback TEA in order to qualify for a return rate denominator.

Once the denominator was set, the return rate numerator was determined. To qualify for the numerator, a housing unit must be in the denominator. In addition, the housing unit is in the numerator if it returned its questionnaire by the start of the nonresponse followup operation, April 18, 2000. This numerator includes questionnaires returned by mail, through the internet, or from interviews during the telephone questionnaire assistance program. Return rates were calculated by dividing the numerator by the denominator, multiplying by 100, and rounding to the nearest tenth of a percentage point.

Users of the rates also should keep in mind that there will be some noise in the data with respect to the April 18, 2000 date. That is, mail, internet, and telephone questionnaire assistance return status was not set instantaneously at midnight of April 18 for all housing units. The actual cut might have fallen on either side of that date for some housing units.

## C. Results and Conclusions

The mail return rates for Census 2000 were calculated at the national, state, county, and census tract levels in order to measure the level of respondent cooperation in the census. Mail return rates nationwide decreased between 1990 and 2000. The national mail return rate declined by approximately 4 points from 74 percent to 69.6 percent. Table 1 shows Census 2000 mail return rates for the entire United States and for each of the four major regions of the country as defined by the U.S. Census Bureau. Table 2 contains these rates at the state level and lists 1990 rates for comparison.

- Table 1 shows that the Midwest region had the highest mail return rate (74.3%) and the South had the lowest rate (66.2%).
- Comparisons at the state level between 1990 and 2000 (see Table 2) should take into consideration the changes in the method of enumeration. In 1990, approximately 5.7 million housing units were enumerated using List/Enumerate (L/E) methodology, which is not a mailback method and hence is not a component in creating return rates. In 2000, only 500,000 housing units were in L/E areas. Thus, some differences in state rates reflect TEA changes rather than a difference in level of respondent cooperation.
- The three states with the highest 2000 mail return rates (see Table 2) were Iowa (77.9%), Wisconsin (77.7%), and Nebraska (76.6%). In 1990, the highest mail return rates were in Wisconsin (85%), Iowa (84%), and Minnesota (84%).
- The three states with the lowest mail return rates were Vermont (61.2%), Alaska (61.7%), and Maine (62.3%). The lowest mail return rates in 1990 were in Alaska (65%), the District of Columbia (66%), and Nevada (69%).
- With about a 12 percentage point decline, Delaware's return rate dropped the most between the two censuses. Connecticut and Massachusetts both showed a slight increase in their mail return rates.

Table 3 shows Census 2000 mail return rates by form type, crossed by Type of Enumeration Area (TEA). The table shows the mail return rates for Mailout/Mailback, Update/Leave, and Urban Update/Leave areas. The highest return rate of 72.2 percent was for the Mailout/Mailback areas that included mostly city-style addresses. Update/Leave and Urban Update/Leave areas had lower levels of resident cooperation, as measured by the return rates. The return rate for the Update/Leave areas was 59.4 percent and for Urban Update/Leave areas was 56.0 percent.

The national mail return rate for the short form questionnaire was 72.1 percent, about 14 percentage points greater than the long form return rate of 57.8 percent. This difference by form type was substantially greater than that observed in 1990, when the short form return rate was 74.9 percent and the long form return rate was 70.4 percent. Two reasons for this change may be the reduced response burden of the short form in 1990 and negative publicity about the long form in 2000. As the table shows, the gap between the two types of forms was greater in Mailout/Mailback areas than in Update/Leave or Urban Update/Leave areas.

The mail return rate of 69.6 percent includes mail return that were received by the Census Bureau by April 18, 2000. However, many residents continued to mail back questionnaires during the following months. These mail returns were data captured but not in time to prevent the need to send out enumerators for personal visit interviews at these housing units. The final return rate, defined as the mail return rate with a numerator that includes all returns through the end of 2000, was 73.7 percent. Over four percent of households who received forms in mailback areas has mail returns after April 18.

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\*This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone a Census Bureau review more limited in scope than that given to official Census Bureau publications. This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress.

**Table 1: Census 2000 Mail Return Rates  
National and Regional Data**

Geography		2000 Mail Return Rate
National		69.6 %
Region	Northeast	69.9 %
	South	66.2 %
	Midwest	74.3 %
	West	70.2 %

**Table 2: Comparison of the 1990 and 2000 Censuses  
Mail Return Rates  
National and State Data  
Preliminary Data**

Geography	1990 Mail Return Rates	2000 Mail Return Rates	Difference between 1990 and 2000 Rates
<b>National</b>	74%	69.60%	4.4%
<b>State</b>			
Alabama	72%	63.90%	8.1%
Alaska	65%	61.70%	3.3%
Arizona	74%	64.70%	9.3%
Arkansas	76%	66.00%	10.0%
California	72%	71.70%	0.3%
Colorado	77%	71.10%	5.9%
Connecticut	73%	73.70%	-0.7%
Delaware	76%	64.30%	11.7%
District of Columbia	66%	64.50%	1.5%
Florida	74%	65.50%	8.5%
Georgia	73%	68.40%	4.6%
Hawaii	70%	62.70%	7.3%
Idaho	77%	72.00%	5.0%
Illinois	77%	72.60%	4.4%
Indiana	81%	74.10%	6.9%
Iowa	84%	77.90%	6.1%
Kansas	81%	73.50%	7.5%
Kentucky	79%	68.30%	10.7%
Louisiana	71%	64.00%	7.0%
Maine	73%	62.30%	10.7%
Maryland	77%	72.30%	4.7%
Massachusetts	72%	72.30%	-0.3%
Michigan	80%	73.30%	6.7%
Minnesota	84%	75.60%	8.4%
Mississippi	72%	66.00%	6.0%

**Table 2: Comparison of the 1990 and 2000 Censuses  
Mail Return Rates  
National and State Data  
Preliminary Data**

<b>Geography</b>	<b>1990 Mail Return Rates</b>	<b>2000 Mail Return Rates</b>	<b>Difference between 1990 and 2000 Rates</b>
Missouri	80%	71.60%	8.4%
Montana	75%	67.30%	7.7%
Nebraska	81%	76.60%	4.4%
Nevada	69%	65.40%	3.6%
New Hampshire	75%	68.10%	6.9%
New Jersey	75%	70.30%	4.7%
New Mexico	72%	63.60%	8.4%
New York	72%	66.40%	5.6%
North Carolina	73%	64.40%	8.6%
North Dakota	81%	74.10%	6.9%
Ohio	82%	75.40%	6.6%
Oklahoma	77%	65.50%	11.5%
Oregon	74%	72.60%	1.4%
Pennsylvania	81%	74.20%	6.8%
Rhode Island	72%	68.20%	3.8%
South Carolina	70%	62.60%	7.4%
South Dakota	81%	75.30%	5.7%
Tennessee	73%	66.70%	6.3%
Texas	74%	64.90%	9.1%
Utah	75%	69.30%	5.7%
Vermont	70%	61.20%	8.8%
Virginia	78%	71.50%	6.5%
Washington	75%	70.60%	4.4%
West Virginia	77%	65.40%	11.6%
Wisconsin	85%	77.70%	7.3%
Wyoming	74%	71.40%	2.6%

**Table 3  
Census 2000 National Mail Return Rates  
by Type of Enumeration Area and Form Type**

		<b>Mail Return Rates</b>		
		<b>Total</b>	<b>Short form</b>	<b>Long form</b>
<b>United States</b>	<b>Total</b>	69.6%	72.1%	57.8%
	<b>Mailout/Mailback</b>	72.2%	74.3%	60.4%
	<b>Update/Leave</b>	59.4%	62.2%	51.6%
	<b>Urban Update/Leave</b>	56.0%	57.9%	45.2%