

Photo by [Quinn Dombrowski](#)

The [2010 census](#) appears to be on its way to be a major success for New York City. We should be grateful for the unprecedented engagement of community, neighborhood and ethnic organizations, as well as adequate funds for communication, outreach and advertising. This all led to a substantial increase in the rate of initial mail response for New Yorkers. When the state population counts that determine the number of seats in Congress are released on Dec. 28t and the block level data for reapportionment for legislative districts are released in March, New York City should do quite well.

The initial response rate rose from 57 percent in 2000 to 60 percent in 2010 in New York City. The overall national rate stayed the same at 72 percent.

The increased initial participation in the city means both better data and cheaper data collection. When people respond to the initial mailing, the Census Bureau does not have send out enumerators to knock on doors and collect the information, saving money.

While some households that do not respond become "hard to count," the largest fraction of households visited by enumerators easily provided information when contacted, some even apologizing for not sending in their form on time. Other housing units whose residents did not respond proved to be vacant. Enumerators revisited any vacant units to confirm that no one lived there.

Filling in the Gaps

Of course, in any huge operation like the census there are bound to be glitches here and there, but the Census Bureau established built in checks to assure accuracy. Most of the error and difficulties encountered by some census enumerators will be corrected during the quality control phase. For instance, any home that had an incorrect address was rechecked, and a small sample of households is being reinterviewed to validate the accuracy of the original count. Checks also exist to eliminate duplicate responses for those who filled out the form in more than one residence.

Despite the relative success and the efforts at quality control, some groups are very difficult to interview, leaving some missed homes and some incorrect or inconsistent information. To address this, the Census Bureau has a number of procedures it follows when it cannot get an interview or the response is either not complete or inconsistent with other responses from the household. These technique, based on statistical methods, come under the heading "imputation and allocation. "

There are two types of imputation and allocation:

Whole unit imputation comes into play when there is no answer for a unit known to be occupied. In such cases, the census applies what is known as the "hot deck" procedure and determines -- or imputes -- the characteristics of the household from those of other nearby households.

The term "hot deck" harkens back to the time when computers used punched cards. The hot deck contained information on those who were recently tabulated from the same neighborhood living in the same type of unit. Such data still exists -- even if the hot deck does not -- and is used to fill in information on nearby, missing with similar known characteristics.

Census Likely to Offer Accurate Count of New Yorkers

by {ga=abeveridge}

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The other method is "item and person allocation," where a household has provided answers, but they either incomplete answers or include inconsistencies. Here the information on the occupants that do exist is used to impute, much as the "hot deck" was for the vacant unit So one can impute sex by using first name, if it is known. A Committee of the National Academy of Sciences [discussed and reviewed](#) these census procedures.

The New York Data

In the past, New York City has relied more on imputed data than the U.S. as whole has. The table below presents information on the imputation of basic characteristics in the city in 2000. The census reported that 4.7 percent of the housing units' vacancy statuses were imputed. In 8.9 percent, it imputed whether or not the unit was owned or rented. This compares with 2.6 percent for vacancy and 4.8 percent for owned or rented nationally.

United States	New York City	Bronx	Kings
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Overall Person Imputations			
Any Item Imputed	10.9%	20.0%	26.4%

Population Substituted	1.2%	3.9%	5.7%
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Specific Imputations			
One or more items Imputed	9.6%	16.1%	20.7%

Race Imputed	4.0%	7.4%	12.3%
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Hispanic Impurtd	4.4%	6.5%	6.8%
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Sex Impurtd	1.1%	1.8%	2.0%
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Age Impurtd	3.7%	5.8%	5.9%
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Relationship Impurtd	2.1%	3.6%	3.9%
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Housing Imputations Vacancy Impurtd	2.6%	4.7%	5.5%
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Tenure Impurtd	4.8%	8.9%	12.4%
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Source: Census 2000 Tabulation From Summary File 1.

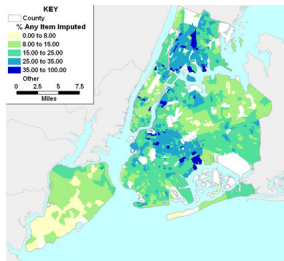
As to imputation for persons, some 20 percent of New York City's 2000 population had at least one item imputed, compared with 10.8 percent for the United States as a whole. For example, in New York City 11.3 percent of people had their race imputed, versus 5.2 percent for the United States. In the Bronx, the figures are 26.4 percent for any imputation, and 16.0 percent for race..

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Imputation varies widely throughout the city, as the table and map show. Areas with high proportions of poor and minority households, such as much of the Bronx, Bedford Stuyvesant, Flatbush and Harlem, as well as heavily immigrant area like Northwest Queens have high levels of imputation. In most of Staten Island and parts of Queens, and of Manhattan levels of imputation are low.



Imputation makes up for many of the problems in data collection, including non-response and inaccurate or misleading information. It improves the quality of the census and the overall results by filling in holes and fixing other problems.

Since 1980, many have argued for statistical adjustment of the Census based upon sampling of the "hard to count" population. The Supreme Court has [ruled](#) against adopting this approach. The census has used imputation and allocation since 1960. So in a [later ruling](#) the court found that such methods were a legitimate means to improve the count.

What then of the 2010 census? First, it seems to have done even better in New York than the 2000 Census. Like the 2000 census, 2010 will prove to be better than the 1990 census, which missed on the order of 400,000 New Yorkers. Second, the various quality control methods will help assure accurate information. Third, the use of allocation and imputation means that even where there are gaps or inconsistencies in the collected data, the data will be improved, so the census will be even more reliable. In short, the 2010 Census is shaping up to be very accurate and reliable.

You can count on it!

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[Andrew A. Beveridge](#) has taught sociology at Queens College since 1981, done demographic analyses for the New York Times since 1993, and been in charge of Gotham Gazette's demographics topic page since 2000. The opinions expressed are his alone.