

EXAMINATION OF CENSUS 2000 INITIAL RESPONSE RATES AND THE '90 PLUS FIVE PROJECT

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Introduction

For three decades participation in the Decennial Census of Population and Housing declined steadily. The national response rate went from 78 percent in 1970 to 75 percent in 1980 and 65 percent in 1990. To promote Census 2000 participation, the Census Bureau implemented a national campaign: *How America Knows What America Needs (HAKWAN)*. *HAKWAN* was used in conjunction with other Census Bureau initiatives, including a paid advertising campaign, formation of partnerships with national and local organizations, a coordinated media outreach, special events, and direct mail pieces. Designed to help locally elected leaders in encouraging constituents to answer the census, the campaign informed communities about census data uses and the importance of accurate local level information.

The *HAKWAN* campaign included two components. The *'90 Plus Five* component sought to encourage residents to return their census forms by challenging communities to increase their response rates by at least five percentage points over their 1990 rates. The second component, *Because You Count*, sought to educate the public about the enumerators who would visit non-responding households and the importance of cooperating with these census workers.

The *'90 Plus Five* component is this paper's focus. Discussed within are actions taken to recruit program participants, a description of what official participation entailed, methods used to calculate "Census 2000 Initial Response Rates," measures taken to make available internet updates of these rates, a comparison of 1990 and 2000 response rates for all entities¹ with a time-sensitive focus at the national level, and an examination of the effect that official participation in the *HAKWAN* program might have had upon response rates.

Attracting Participants and Encouraging Response

Within the context of *HAKWAN*, the Census

Bureau implemented several measures to encourage participation in the program and to promote responding to the census.

To inform the highest elected local officials of the *HAKWAN* campaign, the Census Bureau sent preliminary invitation letters on December 11, 1999. Formal invitational letters (signed by the Census Bureau director) were mailed to the highest elected local officials in mailback jurisdictions on January 11, 2000. Local officials could enroll in *HAKWAN* by returning a postcard, calling a toll-free phone number, or visiting the campaign's internet site: www.hakwan.com.

In October 1999, prior to contacting local officials, the Census Bureau developed the "turnkey kit." Elected officials could use the turnkey kit to supplement other Census 2000 promotional efforts. Thousands of communities across the nation already had established Complete Count Committees, and the *HAKWAN* turnkey kit provided the members of these committees with materials that aided in their efforts.

The turnkey kit included:

- promotional flyers,
- sample letters to newspaper editors and op-ed pieces,
- mattee articles for use in organizational or community publications,
- sample media announcements about the community signing up for *HAKWAN*,
- sample speeches and talking points for use by elected officials or other community leaders,
- promotional event ideas and suggestions, and
- scripts from Census Bureau public service announcements.

Turnkey kits were available in hard copy and CD-ROM formats and could be downloaded from the campaign's internet site.² Kits were distributed to communities that signed up for *HAKWAN*, members of Congress, State Data Centers (which help businesses and

¹ In this paper "entity" refers to any geographic unit (state, city, American Indian land, etc.) included in the *'90 Plus Five* program. The program required the entity be a functioning governmental unit, a county, or both.

² Until late April 2000, on-line access to the turnkey kit materials was restricted using password protection to the offices of highest elected officials.

the public use census data), governors' liaisons (state employees who coordinated communication efforts for Census 2000), and the 12 regional census directors.

The Census Bureau appointed a national advisor -- Ann Azari -- to serve as advocate for *HAKWAN*.

The Census Bureau sought to obtain the official support of several public interest groups with a stake in the collection of accurate census data. By the time the formal invitational letters were sent in January, nine organizations had already signed on as official supporters of the *HAKWAN* campaign: the International City/County Management Association, the National Association of Counties, the National Association of Secretaries of State, the National Association of Towns and Townships, the National Conference of State Legislatures, the National Congress of American Indians, the National League of Cities, the Council of State Governments, and the United States Conference of Mayors. These organizations played the role of explaining to their constituents the importance of participation in Census 2000. With the help of a Census Bureau contractor, they released information about the census in their publications and on their internet sites, encouraged their leaders to promote the census both to members and external organizations, distributed Census 2000 promotional materials, and invited Census Bureau speakers to their conferences.

Meanwhile, the Census Bureau's office of the Associate Director for Communications worked to inform internal constituents of the campaign. In late December, the Associate Director for Communications issued memoranda to the Census Bureau's executive staff and division chiefs that provided an explanation of the campaign and an update on the campaign's implementation. Likewise, the Department of Commerce, to which the Census Bureau reports, was informed of the campaign and the public announcement of the initiative, slated for January 11. Census Bureau national and local partners were informed of the initiative via their regular quarterly newsletter.

The Census Bureau's 12 regional directors and their media and partnership specialists comprised a vital group of internal constituents. They were responsible for day-to-day contact with local officials and were consequently in the best position to encourage *HAKWAN* participation. Regional directors were informed of the campaign in December 1999 by the Associate Director for Field Operations and provided with copies of the initial recruitment letter sent to highest elected local officials. In January 2000, the office of the Associate Director for Communications provided the regional directors with copies of the media kit from the campaign launch and response rate information for counties and cities falling under the jurisdiction of each of their

states.³

On January 11, 2000, the *HAKWAN* campaign was launched by Commerce Secretary William Daley and Census Bureau Director Kenneth Prewitt, in conjunction with National Advisor Ann Azari and representatives of the supporter organizations. The launch was held in the National Press Club's main ballroom and was covered by over 60 media outlets.

Setting the '90 Plus Five Target Response Rates and Creating the Census 2000 Initial Response Rates

A multiple step process generated the universes used to calculate the Census 2000 Initial Response Rates, which were posted on the internet and served as reference for the achievement of '90 Plus Five goals.

The process started with a file of entities to be considered for the '90 Plus Five program. All entities on this file had at least one housing unit in a mailback enumeration area⁴. This file was linked to a file of entities with 1990 response rates, taking into account geographical changes (mergers, splits, etc.). The target response rates for Census 2000 used as the '90 Plus Five goals were generated based on this combination of files. Each entity's target response rate was calculated by adding five percentage points to its 1990 response rate, which had been rounded to the nearest integer. If the 1990 response rate was 96 percent or higher, the target rate for Census 2000 was assigned as 100 percent. Twenty entities required this adjustment.

Some entities had a universe deemed too small for the program because of disclosure concerns. Entities with a mailback housing unit count of seven or less were removed from the file. There were 158 entities removed based on this criterion.

Six entities -- Macedonia, Alabama; Chain of Rocks, Missouri; River Bend, Missouri; Hudson, Ohio; Millsap, Texas; Whitehall, West Virginia -- were mistakenly excluded from the entity universe.

Not all Census 2000 entities had a 1990 response rate. This happened for new governments formed between 1990 and 2000 and for areas that were

³ Throughout the campaign, the Census Bureau treated the District of Columbia and the island of Puerto Rico as state-level entities; thus, the term "state" in this paper includes these areas.

⁴ "Mailback enumeration area" refers to an area that was subject to mailout/mailback or update/leave delivery treatment. In other words, the housing units were asked to return their questionnaires by mail.

not mailback enumeration areas in 1990 but were in 2000. Default rates of 65 percent were assigned for the entities that did not have a 1990 response rate, because 65 percent was the national response rate in 1990. Thus, by adding five percentage points, the Census 2000 target response rate for these entities was set at 70 percent. Of the complete universe numbering 38,147 entities, 9240 of those (about 24.2 percent) were assigned the default response rate.

Table 1 depicts a distribution of the Census 2000 target response rates for the 38,147 entities in the '90 Plus Five program.

Table 1. Distribution of '90 Plus Five Target Response Rates for Census 2000 Entities

Target Response Rate	Number of Entities in Target Range*	Percentage of Entity Universe**
5 - 25 percent	101 entities	0.3 percent
26 - 50 percent	989 entities	2.6 percent
51 - 60 percent	1949 entities	5.1 percent
61 - 69 percent	5042 entities	13.2 percent
70 percent	10,090 entities (9240 default)	26.5 percent
71 - 79 percent	9407 entities	24.7 percent
80 - 89 percent	9088 entities	23.8 percent
90 - 100 percent	1481 entities	3.9 percent

* N = 38,147

** Sum exceeds 100 percent due to rounding.

Census 2000 Initial Response Rates were calculated over the course of the mailback operation. They were posted on the internet from March 27 through April 11. Therefore, the rates were unavailable until a couple of weeks after the delivery of mailout/mailback questionnaires (March 13 through March 15) and near the end of enumerator delivery of questionnaires in update/leave areas (March 3 through March 30). After a hiatus of just over a week, Census 2000 Initial Response Rates were posted again on April 19 and a final time on April 25. The April 25 posting counted some responses that were registered after the nonresponse followup (NRFU) universe was generated, but it still reflected public participation. An additional posting of rates occurred on September 19, 2000, in order to give a final measure of response performance and achievement of '90 Plus Five goals. These rates differed from the rates in this paper, and the number of entities meeting their goals also changed.

The Census 2000 Initial Response Rate for each

entity was the quotient of the numerator and denominator -- each defined in the subsequent paragraphs of this section -- expressed as a percentage rounded to the nearest integer.

A housing unit was eligible for a given geographic entity's Census 2000 Initial Response Rate denominator if it fell under the appropriate geocode designation and it was in a mailback enumeration area. A Census Bureau file identified the mailback blocks for each entity, and this was used in conjunction with the Decennial Master Address File (DMAF) to perform the actual calculation of the Census 2000 Initial Response Rates. The data were forwarded to be checked for errors and posted on the internet assuming there was no cause for concern.

Housing units that were delivered mailback questionnaires but were not eligible for the NRFU universe (for a variety of reasons not detailed here) were not counted as part of the Census 2000 Initial Response Rate mailback universe and thus not included in the Census 2000 Initial Response Rate denominator. Also excluded from denominators for the Census 2000 Initial Response Rates were housing units designated as undeliverable before the mailout operation. These housing units were eligible for NRFU, but they did not receive a mailback form.

The United States Postal Service could not deliver questionnaires to some housing units which were included in the Census 2000 Initial Response Rate denominators. Other housing units were vacant and had no possible respondents. It is therefore feasible -- depending on the size of undeliverable and vacancy rates -- that a given entity could not reach its goal.

During the internet posting operation, Census 2000 Initial Response Rate denominators were subject to fluctuations on a couple of occasions due to updates in the DMAF. The universe used for the first internet posting reflected the DMAF update of March 23, 2000.

The Census 2000 Initial Response Rate numerator included responses from mailback questionnaires, the Telephone Questionnaire Assistance operators, and the internet. Hence, it was not strictly a mailback rate. The numerator only included a response if the corresponding housing unit was counted in the denominator. If more than one mode of response was used for a given housing unit, only the first response received was tallied for that census identification number. A housing unit was not counted more than once in any given rate's computation.

Daily Procedure for Production of Census 2000 Initial Response Rates

Each day's updated posting of Census 2000

Initial Response Rates depended upon a two day process of production and quality verification by several Census Bureau divisions.

At the end of each business day, the Data Capture Centers (DCCs) transmitted data to Census Bureau headquarters in Suitland, Maryland, so that the latest Census 2000 Initial Response Rates could be calculated. A buffer time of one day was included for actual calculation of the rates. Around six a.m. on the day following this buffer day, the calculated rates were processed for display on an internal internet site. (Thus, these rates corresponded to the state of affairs at close of business two days previous.) Census Bureau personnel reviewed these rates, and if no errors were detected, the internal internet site information was copied to the external internet site at about six p.m. on that same day.

The daily troubleshooting procedure was as follows. For each release of rates, summaries comparing the rates to the previous day's data were generated. In the case of a "critical error" (a non-number rate, a rate over 100, or some equally bizarre result) for any single entity, that day's entire post was to be withheld. All 38,147 rates from the previous day would then be reused until the problem could be identified and corrected. No critical errors occurred for any of the postings.

An entity list flagged as "warnings" was also created. These had a jump in Census 2000 Initial Response Rate of greater than ten percentage points from the prior day. (This threshold was based on 1990 check-in patterns.) Larger entities that experienced these jumps received extra study. Many entities showed up as warnings, but the number tapered as the operation progressed. None were determined as cause for alarm.

Independent of critical errors and warnings, "high-profile areas" -- states and large population centers -- were also monitored closely. Even at this geographic level, some anomalies were observed in daily Census 2000 Initial Response Rate progress, but these were determined to be a function of questionnaire processing rather than operational catastrophe or unexpectedly low mailback response.

Also monitored was a daily comparison of the national Census 2000 Initial Response Rate and the 1990 national response rate. The date of questionnaire mailout for each census was used as a fixed reference point to compare the rates. (In 1990, the mailout of questionnaires occurred on March 23, ten days later than the March 13 of Census 2000.) In this manner it could be ascertained if the response rate was ahead or behind of 1990 pace.

Table 2 presents the two rates over the course of the internet postings. Though Census 2000 Initial Response Rates were rounded to the nearest integer for internet presentation, this table includes the rates

rounded to the nearest tenth to provide a more accurate account of daily progress.

Table 2. Daily Progress Comparison of 1990 Response Rate and Census 2000 Initial Response Rate

Days After Mailout	1990 Response Rate, Percentage of Final Recorded 1990 Response Rate	Census 2000 Initial Response Rate (4/18/2000), Percentage of Census 2000 Initial Response Rate
12	46%, 76.7%	41.5%, 64.5%
13	50%, 83.3%	43.6%, 67.8%
14	n.a.*	46.2%, 71.9%
15	n.a.	48.8%, 75.9%
16	54%, 90%	50.2%, 78.1%
17	55%, 91.2%	51.9%, 80.7%
18	56%, 93.3%	53.3%, 82.9%
19	n.a.	54.6%, 84.9%
20	57%, 95%	55.4%, 86.2%
21	n.a.	56.8%, 88.3%
22	n.a.	58.0%, 90.2%
23	58%, 96.7%	59.0%, 91.8%
24	58%, 96.7%	59.7%, 92.8%
25	59%, 98.3%	60.4%, 93.9%
26	59%, 98.3%	60.9%, 94.7%
27	59%, 98.3%	61.7%, 96.0%
35**	n.a.	64.2%, 99.8%
36	n.a.	64.3%, 100%
41	n.a.	65.1%, 101.2%

* Not available.

** No internet posts were generated for days 28 through 34 after the mailout in 2000.

In Table 2 twelve days after the Census 2000 mailout corresponds to questionnaires checked in as of close of business on March 25. Additionally, 36 days after Census 2000 mailout corresponds to check-in through April 18. No internet post was created for check-in through April 18, but this important date is included in Table 2 because housing units that had not responded at that time reflect the workload visited during NRFU. The percentage of the Census 2000 Initial Response Rate listed in Table 2 is based upon that date, which explains why the percentage corresponding to 41 days after the mailout exceeds 100 percent. That

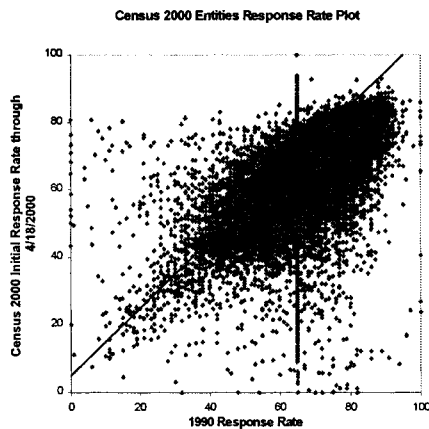
41 days after the Census 2000 mailout represented check-in though April 23.

The 1990 response rate data in Table 2 correspond to mailback questionnaires for Type 1 district offices only, which had questionnaire processing treatment most similar to that of Census 2000 and thus were a good base of comparison. However, Type 1 district offices had a national response rate in 1990 of only 60 percent, which differs from the national rate of 65 percent. Consequently, Type 1 offices were similar in processing to Census 2000 operations but not representative of the nation. This is why the percentage of the final response rates are presented in Table 2 as another means of comparison.

Based on the Table 2 information, Census 2000 mailback replies were at a slower rate relative to the entire responding 1990 universe. This could be due to the fact that -- as mentioned before -- the official Census day, April 1, was later relative to the mailout in 2000 than it was in 1990. Census 2000 respondents therefore might not have been in as much of a hurry to return their forms upon receiving them.

Census 2000 Initial Response Rates and How They Compared with 1990 Response Rates

The national Census 2000 Initial Response Rate was about 64 percent as of close of business on April 18, 2000. Thus, about 36 percent of the mailback housing units comprised the NRFU universe. The internet site was updated on April 25 with a national Census 2000 Initial Response Rate of 65 percent that reflected some responses received too late to be removed from NRFU.



The preceding chart plots the Census 2000 Initial Response Rates versus 1990 response rates for all 38,147 entities. A reference line based on goal achievement is included. All points on or above the line represent entities that met their goals. This chart reflects responses received at the DCCs through April 18. The

data points imply a positive correlation between the rates of 1990 and 2000. However, only 5532 entities (about 14.5 percent) have a Census 2000 Initial Response Rate that is greater than or equal to their '90 Plus Five goals.

The vertical streak is the 1990 response rate's 65 percent mark. Most of these points correspond to the entities assigned the default 1990 response rate, and their Census 2000 rates range across the spectrum. Entities given the default rate actually met their goals at a higher rate than those entities that were not given the default (26.5 percent compared to 10.7 percent), which indicates that entities that were new since 1990 were relatively more successful in meeting the '90 Plus Five challenge.

Entities not meeting the goal were skewed toward the higher end of the goal spectrum as compared to the entities of the entire universe. Most glaringly indicative of this trend is the fact that not one of the 1481 entities with a goal rate of 90 percent or higher met its goal. Additionally, while 52.4 percent of the entire entity universe had a goal of 71 percent or higher, of the entities that did not meet their goals 59.1 percent fell into that category.

Of the 32,615 entities that did not achieve their respective goals, 6619 of them (20.3 percent of that universe) actually duplicated or exceeded their 1990 response rates. It follows that 12,151 entities (which is 31.9 percent of the '90 Plus Five universe and includes the 5532 entities that met their goals) maintained or exceeded their 1990 response rates.

At the state level (including Puerto Rico and the District of Columbia), Census 2000 Initial Response Rates ranged from 48.6 percent to 73.2 percent. The five with the highest response rates through April 18 were Iowa (73.2 percent), Nebraska (72.3 percent), Wisconsin (72 percent), Minnesota (71.6 percent), and South Dakota (71.5 percent). The state level entities with the five lowest response rates were Puerto Rico (48.6 percent), Alaska (53.6 percent), South Carolina (56.4 percent), the District of Columbia (56.9 percent), and Hawaii (57.1 percent).

Correlation between HAKWAN Participation and the Census 2000 Initial Response Rates

For this analysis participation data consisted of the entities that had signed up for the HAKWAN program as of February 24, 2000, and as of April 20, 2000. Entities that signed up received the aforementioned turnkey kits. Due to inconsistent name information, some entities (920 total) listed as having signed up could not be matched to the original 38,147 entities. For this paper, these were not counted as HAKWAN participants.

Table 3 gives entity counts according to participation and fulfillment of goals. (For each cell a

percentage of the total count of its row, rounded to the nearest tenth, is given in parentheses.)

Table 3. Frequency of Entities by Participation in *HAKWAN* Program and Achievement of '90 Plus Five Goal

<i>HAKWAN</i> Status	Date of Sign-Up	Achieved Goal	Did Not Achieve Goal
Participated	2/24/2000 or earlier	213 (11.7%)	1615 (88.3%)
	2/25/2000 - 4/20/2000	33 (7.8%)	391 (92.2%)
	4/20/2000 or earlier	246 (10.9%)	2006 (89.1%)
Did Not Participate	not applicable	5286 (14.7%)	30609 (85.3%)

Table 3 indicates that during Census 2000 entities not participating in the *HAKWAN* program were more likely (14.7 percent as opposed to 10.9 percent) to achieve the '90 Plus Five goal than participating entities -- regardless of sign-up date. However, entities that signed up for the program earlier did achieve their goals at a higher rate of success than the entities that signed up later (11.7 percent compared to 7.8 percent).

Not a single state met its '90 Plus Five goal. Only 12 state governments signed up for participation in the *HAKWAN* program, and no causative relationship between participation and response could be concluded at the state level. Consequently, an attempt was made at linking the percentage of a states' entities that participated and the success in response as compared to 1990. However, there was apparently no correlation between those statistics either.

None of the 119 American Indian lands signed up for the *HAKWAN* program. However, 24 of them (20.2 percent) met '90 Plus Five goals, and 33 of them (27.8 percent) matched or exceeded their 1990 rates.

Conclusions

Overall, the nation maintained its 1990 response rate performance, but there was no improvement. About 14.5 percent of all entities nationwide met or exceeded their '90 Plus Five goals. No states achieved their goals. Nevertheless, because the trend of declining response rates over the past three decennial censuses was stopped, Census 2000 can be viewed as a success.

Entities that signed up earlier in the *HAKWAN* program achieved their goals at a higher rate than those entities that signed up later, though this relationship could be merely symptomatic rather than causative.

Officially participating in the *HAKWAN* program seemed to have no effect on achieving the response goals, but other factors could be linked to this phenomenon. For example, an entity that achieved its goal might have anticipated high response and seen less need to participate in the campaign.

Goals set forth might have been impossible or at least very difficult to achieve in some cases. Almost 1500 entities had a target response rate of 90 percent or higher, and not a single one of these achieved its goal. Over 9000 more entities were challenged to attain at least 80 percent, and the vast majority of these entities (99.0 percent) failed to meet their target rates. An expected nationwide vacancy rate of about 10 percent could have contributed to the failure to achieve goals.

Based on these facts, a request that entities raise their response rates by five percentage points was perhaps unrealistic. If this program is implemented again, an upper bound for what is asked of the entities that is below 100 percent and takes vacancy rates into account could alleviate the unreasonable goal problem.

The default target response rate of 70 percent was assigned to almost a quarter of the entities in the program. This could have also had an adverse effect upon the program's success. Such wide usage of the default rate could not be avoided because of the dynamic nature of the country over the past ten years, but this default rate still might not have been a fair reflection of response potential for many of the entities.

Additionally, the 1990 response rates which were used in generating the target rates were calculated long after that census. They were not entirely reflective of the mailback universe at the time of delivery. Some "killed" housing units were not included in the universe. We suggest careful maintenance of the Census 2000 Initial Response Rates so that they might be used for Census 2010 if a challenge similar to that of the '90 Plus Five program is to be implemented.

Contributors

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