

## COSTS, RESPONSE RATES, AND OTHER ASPECTS OF DATA COLLECTION IN THE 1970 CENSUS

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**Introduction.**--The Nineteenth Decennial Census of the United States, conducted as of April 1, 1970, was the first in which a mail-out/mail-back technique was employed to collect the information from the majority of the nation's population. Almost two-thirds of the households located in the larger metropolitan areas and some adjacent counties received their census questionnaires by mail containing a request to complete them and mail them back to a local census office in a postage-free envelope provided in the mailing piece. For the balance of the country, the traditional house-to-house canvass by enumerators was used, prefaced as in 1960 by the distribution to all households shortly before Census Day of a questionnaire containing the 100-percent population and housing items and a request that the householder fill in the answers and hold it for the enumerator's visit.

The extensive use of the mails was the culmination of a series of pretests which actually began with an initial experiment in the 1950 census and the experience with self-enumeration in the 1960 census. The 1970 mail collection technique was tested and developed through a series of six pretests conducted during the period 1961 through 1967 and given its final operational rehearsal in three dress rehearsals during 1968 representing the three basic data collection systems used in the 1970 census.

It is obvious that the feasibility of the mail system depends in large measure on the degree of public cooperation in filling out the questionnaires. In the five full-scale mail tests--Louisville (1964); Cleveland (1965); New Haven (1967); Madison (1968); and Trenton (1968), the percent of households who mailed back their census forms was, respectively, 88, 80, 78, 91, and 66. These rates cover both 100 percent (short) and sample (long) form returns which did not differ substantially. On the average the return rate from sample households was about six percentage points below the short form response.<sup>1</sup>

**The Collection Systems.**--For the mail-out/mail-back areas, some 35 million individual address labels were printed from computer tapes containing city-type residential addresses, up-dated at three different points in time by the Post Office through a "casing" check. These were supplemented by some six million addresses in the non-city delivery portions of the metropolitan areas collected in a special address listing operation by census employees a few months before the census. The operation yielded hand-written address registers for control purposes similar to the computer address register print-outs and hand-addressed mailing pieces comparable to the computer produced

materials.

Two variants of the mail-out/mail-back system were used in 1970. Under one approach--designated as "decentralized"--the mail returns for the particular enumeration district were given to the enumerator to be checked in against the address register, reviewed for acceptability, and as necessary, followed-up by telephone, if possible, or by personal visit. The enumerator was also responsible for visiting all addresses from which a mail return was not received.

Under the other approach--designated as "centralized"--the mail returns were checked in, reviewed for acceptability, and as necessary, followed-up by telephone, if possible, by a clerical staff in the local temporary field office. The only work which the enumerator had to do was the personal visits to (a) nonresponse addresses and (b) the households with unacceptable mail returns which could not be resolved by telephone. The centralized procedure had certain potential quality advantages but constituted a difficult office management problem. Therefore, it was used only in the very large metropolitan areas. Furthermore, the centralized-procedure offices were managed by experienced Bureau personnel rather than by new temporary employees as is generally (and necessarily) the case for the other types of decennial field offices.

The "conventional" enumeration system was used in the balance of the country where it was not considered feasible or economical to operate and control the mail system. In the nonmail areas, a collection process much like the 1960 "single-stage" approach was used. A few days prior to Census Day, the mail men left an unaddressed short form (100 percent) questionnaire at every housing unit identical in content with the one used in the mail areas, and also a FOSDIC document to be used for final processing. The purpose of this advance distribution was to obtain the advantages of self-enumeration for the 100-percent items. At every fifth unit, the 1970 enumerator completed the same long-form (15-percent or five-percent) questionnaire as was used in the mail areas. A check was made in selected States by local letter carriers of the conventional enumerators' listings, a coverage review comparable to the check used in mail areas. When the enumerator completed his field collection work he was instructed to prepare cards containing the address of each housing unit he had visited. These cards were then turned over to the post offices for this check of coverage.

Of the 393 temporary district offices established for the 1970 census, 45 were "centralized" mail-out/mail-back offices in large

cities where approximately 7,000,000 housing units and their residents were enumerated. The average workload for these offices was 153,000 housing units. There were 167 "decentralized" mail-out/mail-back offices responsible for covering approximately 36,700,000 housing units with an average workload of about 220,000 per office. The balance of the enumeration was handled in 181 "conventional" offices with a total anticipated workload of 26,400,000 housing units and having an average workload of 146,000.

It is of interest to note that despite the successful completion of all of the preparatory operations prior to Census Day, the actual distribution and collection phase was in substantial jeopardy for several days prior to April 1 because of the possibility of a nationwide strike by letter carriers. To lessen the possible impact of such an event, postal authorities moved the mail date from March 28 to March 23 and 24. While this earlier mailing made for some confusion in the radio and TV publicity it had no appreciable effect on the returns. The walkout which occurred in a number of the major mail distribution centers did delay the delivery of the returns to the census offices in several instances and was no doubt responsible for the failure to receive the mailing pieces in the pre-designated arrangements and sequences in many instances. This had the effect of delaying the follow-up of non-responses to some degree.

Costs.--Although the total anticipated cost of a decennial census is developed well in advance of the actual decennial census period as an overall proposed budget for the entire program, funds are provided annually based upon yearly appropriation requests which are subject to review by the Secretary of Commerce, and the Office of Management and Budget before being acted upon by each Congressional body as a part of the total appropriation for the Department of Commerce. While this procedure presents some limitations to the assurance that the entire program can be carried out as planned, it does provide the possibility of revising the budget in the light of unanticipated events as the work progresses to either increase or decrease the funds required.

In the initial consideration of the 1970 census budget the assumption was made that the costs should not exceed those of the 1960 census updated for cost and workload increases. Later, funds were requested and approved for coverage and data improvements.

The currently estimated cost of the Population and Housing census program is slightly more than \$205,000,000. This puts the per capita cost of the 1970 Census of Population and Housing at about \$1.00 for the entire process from initial planning and pretesting through the final publication of special subject reports at the close of the census period. The comparable per capita cost for the 1960 census was almost

\$.60 in 1960 dollars, or \$.90 when adjusted to 1970 cost level.<sup>2/</sup>

The 1960 adjusted costs including workload increases, pay and price increases, and other factors were calculated to be \$194,000,000 as compared to the actual cost of \$105,200,000 for the 1960 Census. Cost changes resulting from new census methods employed in 1970 for the mail-out/mail-back data collection technique represent a reduction in this adjusted 1960 cost of a little over \$15,000,000. This yields a net base census program cost of about \$179,000,000 for 1970 to which program improvements including special coverage improvement procedures, detailed place-of-work data, additional tabulations and publications, improved availability of unpublished data, and other items were added in the amount of \$26,000,000 for a total estimated cost of \$205,000,000.

The great bulk of the census cost, of course, is consumed in the data collection phase which was initiated with the opening of the temporary field offices in January 1970, peaking in April and being essentially completed by the end of June. Almost 65 percent of the total cost is chargeable to data collection including the necessary preparatory field work, the preparation and control of mailing lists, and the printing and distribution of questionnaires, field instructions, and operational and administrative forms. Data processing including the manual coding of many of the sample items, tabulations, geographic identification, map preparation, evaluation studies, improvements in the availability of unpublished data through summary computer tapes and microfilm and the provisions of public use samples of census returns, and the series of publications of the census results represent 25 percent of the cost of the program. Mail feasibility tests, content pretests, dress rehearsals, and general planning, administration and capital outlay represent the remaining 10 percent of the overall costs.

Work accomplished to date has been within planned costs essentially despite the fact that tabulations and publications are two to three months behind originally established time schedules. It is anticipated that some of the time loss can be recovered in the next calendar year.

One month ago the census met its primary legal requirement when the final State population totals and the number of representatives to be apportioned to each State in the House of Representatives based on these totals were delivered to the President and announced in the press. These State totals including U. S. military and civilian personnel overseas for purposes of Congressional apportionment and the District of Columbia add to a 1970 U. S. population total of 204,765,770.

The Enumeration Experience.--The logistics of establishing 393 temporary census field offices,

providing them with the necessary supplies, equipment, and census materials was accomplished successfully before the census date and the planned complements of temporary personnel were initially recruited as required in most offices. Recruiting was very difficult in a number of the offices located in the cores of the large cities.

With the questionnaires in the hands of the respondents a few days in advance of Census Day, April 1, approximately 90 percent of the mail response was made within three days after Census Day. In the conventional areas, about 6 percent of the enumeration was completed by mid-April. By the end of April nearly 85 percent of the conventional assignments had been completed. The enumeration of the conventional areas was virtually complete by May 30, and the last conventional office was closed on June 23.

In the 1960 census, by the end of the first week of enumeration, about one-third of the population had been enumerated. By the end of the second week, almost three-fourths (73.8 percent) had been counted, and by the end of the sixth week 99.1 percent of the population had been enumerated. All of the census district offices were closed by the end of July 1960.

Despite the rapid response overall in the mail areas, the follow-up for non-response fell behind schedule due to difficulties in recruiting and retaining qualified people in many of the centralized offices in the large cities. Due to these difficulties only 50 percent of the follow-up work was completed at the end of May. By the end of June work in the decentralized offices was virtually completed.

At the end of July, some 14 weeks after non-response follow-up was initiated in the centralized offices, 13 of these 45 offices were still striving to complete the enumeration of more than 600,000 housing units. The last centralized office was closed on September 17.

Response Rates.--The higher the response rate by mail and the higher the quality of response from the respondents the less the need for personal follow-up to collect the census questionnaires, the possibility of less cost in the process, and the closer to a true inventory of the population, the characteristics and its housing at a single point in time. Here the evidence of success is clear. The actual response and the quality of response, as shown in the following table, equaled or exceeded our expectations which were based on our pretest experience.

Type of Questionnaire	% of Mail Response		% of Responses Needing Follow-up	
	Exp.	Act.	Exp.	Act.
Short Form (100%)	84	88	11	14
Long Form (100% plus sample)	76	83	71	56
TOTAL	82	87	22	20

The experience in the 1970 census with the mail procedure leads us to hope that it can be extended beyond city delivery areas in the future. We shall soon initiate discussions with the Post Office to explore ways in which suitable address lists linked to the specific geography can be developed for rural areas.<sup>3/</sup>

While there was no overall official tally of the extent to which respondents in conventional areas completed their short form questionnaires they received by mail, the census field staff checked a small sample of the 160 enumerator assignments and found that 63-percent of the households had completed their form, another 16 percent had partially filled it out, and only 21-percent had made no attempt to complete it or had mislaid it. In fact the conventional offices received many telephone calls from people who were disappointed when the enumerator did not appear at their door on April 1st.

Census Mail Extension Test.--As a part of the Bureau's philosophy of testing innovations on a small scale in one census to determine their feasibility for incorporation in future censuses, ten census districts essentially rural in character, were selected from the conventional offices for a feasibility test of using the mail technique in non-city delivery areas. The pairing of these ten districts on like population, housing, and geographic characteristics and the random selection of one pair member to a mail area was done to provide a lower estimate of the sample variance, and allow us to make meaningful comparisons of cost, completeness of coverage, timing, coordination and control, and to some extent, data quality, between mail and non-mail techniques when used in highly similar rural type areas. In addition, the mail extension test is expected to provide insight into the operational and logistical problems which might be present in a program to achieve greater use of the mail-out/mail-back procedures. The 5 districts designated as mail areas contained a total population of 2,000,000 in 1960 while the 1960 population of the 5 control districts totaled some 2,350,000.

The analysis of this test will be completed in the early spring of 1971.

Quality Control and Coverage Improvement Efforts in 1970 Census.--In addition to the coverage improvement afforded by the existence of control lists of addresses, a major quality check in the 1970 census was a special audit of housing units reported as "vacant" by census enumerators. This audit was conducted immediately after the field canvass on a sample basis by the regular interviewers on the Bureau staff who are more experienced in interviewing and who have received more training than the census enumerators. This intensive follow-up audit found a certain percentage of the units that, according to proper application of the census residence rules, should have been classified as occupied and the inhabitants enumerated. The improvement achieved

by this check had a measurable impact, adding about 1 million persons or one-half of one percent of the total count, well dispersed over all areas.

Another quality effort was the post-enumeration check by the Post Office in areas in which the mail-back procedure was not used. The addresses listed by the enumerators as they canvassed their areas were transcribed to cards and turned over to the Post Office, where they were sorted down to carrier routes. Each carrier was then asked to review the cards and to prepare a blue card for each address on his route for which he was not given a white card. The blue cards then became the basis for follow-up to make sure the household was added to the census rolls if it had actually not been recorded by the enumerator. Because this procedure is both time consuming and relatively expensive it was used in 16 States where earlier experience indicated this procedure would most likely be useful. This procedure added about .8 percent to the total population count for these 16 States.

Another significant innovation adopted for the 1970 census was the employment of full time community educators to work with organized minority groups well in advance of Census Day. Twenty community educators were appointed in our regional offices to call in person on prominent members of minority groups, including religious leaders, community leaders, elected officials and radio personalities. Particular efforts were made to reach the black community, the Mexican-American, Puerto Rican-Americans, Chinese-speaking people, and American Indians. Strong support and cooperation was received from the Urban League, the Cabinet Committee on Opportunity for the Spanish-speaking, and the Puerto Rican Government, as well as many community organizations, members of the clergy, the press, and the entertainment industry. While the impact of this effort cannot be quantified, the belief is that it helped significantly in reducing the under-representation among minority groups identified in our post-analysis of the 1960 census. We plan to expand this activity in future census efforts.

Other measures introduced or greatly expanded in 1970 to improve the quality of census coverage included: (1) a special check in large cities of the coverage of persons moving from one address to another within the period immediately preceding and following the census date--a class of persons more subject than most to potential omission in the census; (2) special foreign language translations of questionnaires and instruction sheets used in appropriate areas; (3) telephone assistance centers; (4) locally organized personal assistance centers; (5) bilingual enumerators to aid the householders in completing their census reports where needed; and (6) smaller enumerator assignments, smaller supervisory assignments, and higher pay rates in difficult-to-enumerate areas together with a manifold increase in the

deployment of experienced census staff to assist temporary workers in preparing for and executing the work.

The Undercount.--Places of all sizes are much more concerned over the 1970 population counts than previous census, since the decade of the '60s has seen the establishment of 22 new Federal funding programs which base their grants or assistance, in whole or in part, on the population of the area involved. Of equal impact is the Supreme Court "one-man-one-vote" decision effecting all levels of districting for the purpose of voting for elective offices.

Most of the concerns over possible undercounts are based on a serious effort to reconcile the census figures with other data related to local growth. A city official who knows that the number of housing units has increased, school enrollment is higher, water meters are more numerous and automobile registrations greater, is naturally concerned when the census shows a lesser increase in total population or no gain at all. The Bureau too, is concerned since we know the importance of the census results. However, the census is a name-by-name accounting of each dwelling unit or other place of abode for the entire population. It is not an estimate. No process that projects a population count over a 10-year period from the last census by means of indirect indicators can be as accurate as the census count. Rising affluence, changes in family size, changes in living arrangements all operate to lessen the reliability of indirect indicators of population change. Often indirect indicators of activity relate to the broad local area, whereas census figures for a city relate to the area within its corporate limits, which often experiences changes that are at variance with those in its suburban areas.

In spite of the improvements in the 1970 field collection procedures, there have been a large number of expressions of concern by local officials concerning the quality of the census in particular areas. More than 500 localities, large and small, registered formal complaints concerning the preliminary counts announced by the census district managers at the conclusion of the field canvass. As the preliminary counts were announced, a "Were You Counted?" campaign was conducted by the census district office by placing a form in the newspapers which anyone who thought he had not been enumerated could fill out and turn in. These were checked against the records and if not found, this person was enumerated. Country-wide this effort added less than 100,000 to the count. Communities who thought they had not been properly counted were given the opportunity to conduct additional campaigns to determine that everyone was enumerated. The Bureau stipulated that specific names and addresses had to be furnished in order that such claims could be individually checked against the census records. Such claims were accepted up to early November and whenever these indicated that some small area had been

omitted such as a block or a small neighborhood, such possibilities were immediately field checked by Bureau personnel. Overall these local efforts produced about 75,000 claims of missed households. Checks of these claims resulted in the addition of about seven persons per 10,000 originally enumerated or about five-one hundredths of one percent to the national total.

Three places have brought suit against the Bureau concerning an alleged undercount of their population. Two of these have been dismissed by the court. The third was scheduled for court action on December 9, 1970.

The Census Evaluation Program.--A total of 23 evaluation studies have been established for the 1970 census. Some have been initiated during the field collection phases. Others must await access to the questionnaires before certain comparisons can be made with independent records. It is anticipated that the results and analysis of most of these studies will be issued in the summer and fall of 1971.

Seven of the studies are concerned with population and housing unit coverage, ten others are concerned with content and sample bias. The content studies include a CPS-Census match, a comparison with IRS income data, an employer record check on occupation and industry entries, and several other subject items. A reinterview of a national sample of 10,000 households was conducted during August and September. The reconciliation of these returns with the census reports for these households and the analysis of differences will take several months.

The analysis and publication of the results of a response and enumerator variability study which was embedded in the field collection through the assignment of specific enumerator workloads in 35 district offices will not be completed until early 1972.

Publication Program.--While similar in general format to the 1960 census publication series, the 1970 census publications, with the exception of the first series containing official counts for all places, will be prepared by a computerized process at the Government Printing Office called LINOTRON wherein the table images carrying letter-press type are displayed on a cathode ray tube and captured on microfilm for ultimate offset plate preparation with much greater speed and greater data capacity per page than printing systems heretofore available. As a result, a substantially greater number of pages will be published in the 1970 program--200,000 as compared to 130,000 for the 1960 census.

All of the preliminary reports for both population and housing showing counts for States, counties, places, SMSA's and for specified areas have already been issued. Most of the Population and Housing Advance Reports containing final data from the first computer tabulations have been sent to the printer. The last of these will be issued next month.

A computerized news release is being prepared for each county in a State as the first tabulation run is completed, and is mailed to the news outlets in the appropriate cities and counties of that State.

Census Data Accessibility.--More effective utilization of census data products has been a long-term goal of the Census Bureau. Current activities directed toward the achievement of this goal have been profoundly affected by three factors: (1) pervasive need for data; (2) widespread use of general-purpose digital computers; and (3) data processing procedures used by the Census Bureau.

Bureau programs and activities with respect to improving utilization of census products stem from its interpretation of a selected number of key critical concepts. These concepts are concerned with access and confidentiality of data, data use, and data delivery.

In processing the 1970 census results, the Bureau creates two sets of basic record tape files as part of the process of arriving at the tabulations for the published reports, one for population and one for housing data. The Bureau develops a set of detailed tabulations from these basic record tapes and transfers the tabulations to intermediate tape files called summary tapes. One set of the summary tape files will be reproduced on industry-compatible tape in standard format and technical language. After being subjected to a confidentiality review procedure in order to prevent disclosure of information identifying individual respondents summary tape files are made available for public use at a cost per tape including documentation.

The Bureau will make available six sets of these public use summary tape files, referred to as "counts." These tapes contain approximately 10 times as much data as it is possible to publish. The first three counts provide information generated from the 100 percent basic record tape. The last three will contain data developed from the basic record tapes which contain the sample information. The complete set of summary files will consist of some 2,050 tape reels which may be purchased from the Census Bureau at a reproduction cost of about \$60 per reel. This price includes the accompanying technical documentation and the cost of mailing and handling.

The First Count provides statistical information for areas as small as the enumeration districts and block groups; the Second Count at the census tract and minor civil division level; the Third Count for some 1,500,000 blocks. The Fourth Count provides the sample data results at the level of minor civil divisions and tracts; the Fifth Count provides information by 3- and 5-digit ZIP code areas, and the Sixth Count gives detailed cross-tabulations for relatively large areas.

In addition to summary tapes, the census data user needs the Geographic Area Code Index, which provides the alphabetic equivalents of the numeric codes appearing on the summary tapes. Also, appropriate census maps should be acquired to be able to properly identify the small areas corresponding to the tabulations on the summary tapes.

The Bureau has prepared a display software package which the user might consider purchasing. This program, called DAULLIST, has been designed to display the contents of the First Count and is available in both FORTRAN and COBOL versions on the same tape reel. The cost of this package, including documentation and tape reel, is \$60. Plans call for the preparation of additional display programs for the other summary tape counts.

A microfilm version of the First Count has been developed and is available at an equivalent cost of approximately \$15 for each First Count reel of magnetic tape. Microfilm versions of other counts will be developed on the basis of user interest and demand.

The Bureau is making available for public use other products which it has developed for use in the 1970 census. These are maps, Address Coding Guides, and Geographic Base Files.

In order to speed up delivery of special tabulations, and to reduce their costs, a special tab generator for processing special tabulation requests is being developed to be operative late in 1971. A general extraction program is also being designed to reduce the cost of providing data for selected geographic areas from summary tapes; and a control system is being installed which would also enable the user under certain circumstances to purchase a tape reel within a file.

Release of Unpublished Summary Data.--Some 130 census summary tape processing centers throughout the country which have been recognized by the Bureau are providing copies of the census summary tapes to users and performing special tabulations from the tapes on request. The Bureau has received orders for more than 13,000 summary tapes to date from these centers as well as others who prefer to purchase direct from the Bureau.

A Central Users' Service has been organized within the Bureau to take summary tape orders and handle requests for special tabulations from the basic record tapes. The Service also provides consultation assistance on other census products to interested users.

Public Use Sample Tape Files.--In general, publicly available data from a census appears as statistical summaries only. However, samples of basic data from the 1970 census, with all identifying information removed, will be made available for large areas. The 1970 Public Use Sample Program is greatly expanded over that provided in 1960. The intent is to make the samples much

more appropriate for analysis of subgroups as defined by geographic or demographic considerations.<sup>5/</sup>

The basic elements of the Public Use Sample Program are as follows:

1. There will be several basic Public Use Sample Files, each of which contains sample records for 1 percent of the population, or roughly 2 million individuals.
2. No names or addresses will appear in the file. Geographic codes will identify only areas (e.g., States or SMSA's) or at least 250,000 population.
3. All of the characteristics of people and households as recorded in the census basic records will be on the Public Use Sample records, except for name, address, and geographic information as noted above.
4. Records will be organized on a household-by-household basis so that characteristics of the various family members may be inter-related.
5. The user may obtain a Public Use Sample File drawn either from 15-percent sample records or 5-percent sample records (see informational copy of the census questionnaire).
6. The user will have the option of obtaining a Public Use Sample File including "Characteristics of the Neighborhood," a set of social indicators which allows comparison of the individual's characteristics with information about the kind of neighborhood he lives in.

More than one option of geographic identification will be available. Present plans include three: (1) one identifying large SMSA's, large counties, and related groups of counties elsewhere; (2) another identifying each State and its urban and rural, metropolitan and non-metropolitan parts; and (3) one identifying large States and groups of small States with size-of-place reported and with community characteristics for each household included. Combinations of these three identifiers will not be available on a particular Public Use Sample File.

Public Use Sample Files will be available on IBM magnetic tape, 7- or 9-track, at the cost of reproduction. One 1-percent Public Use Sample File for the United States will likely take up 30 reels of tape. Smaller subfiles or subfiles of Negro headed households, will also be available on a special order basis. These samples are expected to be available near the end of 1971.

Early Results.--More than three fourths of the national growth between 1960 and 1970 occurred in metropolitan areas with suburban rings showing rapid and substantial population growth. Suburbanites now outnumber those living in central cities. Population in the suburban rings now stands at 75 million, with 63 million in the central cities, and 65 million outside the SMSA's

Population in many central cities declined sharply. Declines also occurred in the decade of the 1950's, but the number of cities showing population losses in the 1960's is greater than in the previous decade. Only 12 of the 25 largest central cities show an increase in population over 1960, and three of these are due to substantial annexations.

About one-half of the Nation's 3,000 counties lost population between 1960 and 1970. In an additional one-fourth of the counties, there was a low rate of growth. Approximately two-thirds of the counties showing a decrease in the 1960's also had lost population between 1940 and 1960.

The States with the greatest gains in numbers of people are California with 4.2 million; Florida, 1.8 million; Texas, 1.6 million; and New York, 1.4 million. The greatest percentages gainers are Nevada with 71.3 percent; Florida, 37.1 percent; and Arizona, 36.1 percent. Three States and the District of Columbia lost population during the decade. The States are West Virginia, North Dakota, and South Dakota.

Migration patterns continued much as in the past--from mid-country out, from rural to urban;

and the coastal areas continued to grow. Overall, the population shift has been to the south and west. The farm population declined by approximately one-third since 1960, dropping from about 15 million to some 10 million.

#### FOOTNOTES

- 1/ Kaplan, David L., "Plans for the 1970 Census of Population and Housing," DEMOGRAPHY, Volume 7, Number 1, Feb. 1970, p.8.
- 2/ U.S. Bureau of the Census, "1960 Censuses of Population and Housing--Procedural History," Mar. 1966, p.344.
- 3/ Brown, George H., Statement before Subcommittee on Census and Statistics, Committee on Post Office and Civil Service, U. S. House of Representatives, Sep. 1970; Bureau of Census
- 4/ Gura, Benjamin, "Census Tape Delivery; Dates, Costs, and Contents," Urban Regional Information Systems Association, Jeffersonville, Indiana, Sep. 1970.
- 5/ Bureau of the Census, "Small Area Data Notes," Vol. 5, No. 1, Jan. 1970.