

Island, Georgia, and Mississippi. It is estimated that, for the 1980 census, block statistics will be available

for 2.5-3 million blocks (in comparison to the approximately 1.5 million blocks in 1970).

Journey-to-Work Data from the 1980 Census

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The 1980 census will be expanded to include more extensive coverage of journey-to-work subject matter. This paper presents an overview of the new and revised data the transportation planner can expect and describes the development of new coding resource materials that should facilitate the processing of incomplete responses and improve the quality of place-of-work coding to census tracts and blocks within metropolitan areas.

Because of the growing need for data related to transportation use and commuting behavior that is one of the results of post-1970 energy shortages, the journey-to-work subject-matter area will be greatly expanded in the 1980 census. Plans include additional transportation-related questions on the sample (long-form) questionnaire, development of new processing techniques for place-of-work coding, and preparation of tabulations that will contain information of greater use to transportation planners. This paper presents a brief overview of these aspects of the 1980 journey-to-work statistics program.

JOURNEY-TO-WORK QUESTIONS

The 1970 census contained two population items related to the journey to work: place of work and means of transportation to work. It also contained one transportation-related housing item: a question that asked the number of passenger automobiles owned or regularly used by members of the household.

In contrast, the 1980 census sample questionnaire will not only contain inquiries on place of work and means of transportation to work (as in 1970) but also include new questions on carpooling arrangements, number of persons in the carpool, and travel time to work. The housing question on the number of automobiles available will also be repeated in 1980, and there will be a new companion question on the availability of trucks and vans.

DEVELOPMENT OF NEW PROCESSING TECHNIQUES FOR PLACE-OF-WORK CODING

The 1980 census question on place of work will require extensive hand coding to translate the written addresses given by respondents into machine-readable geographic codes for computer tabulation. However, the 1970 experience showed that the most serious problem encountered in place-of-work coding was the inadequate place-of-work address information given by many respondents. This was not so much a case of refusal to answer as of a lack of knowledge as to the exact street address of the workplace. In other instances, especially for persons working in very large buildings or plants, the place of work simply had no street address that could be reported.

Therefore, one important objective of the pretest and dress-rehearsal activity has been the development of extensive lists of buildings, shopping centers, colleges and universities, military installations, and such establishments and the geographic coding of them for use in coding incomplete responses. Most notable among these materials is the standard statistical establishment list, which has been prepared for the economic censuses program.

The contribution of these materials toward improving the quality of place-of-work coding in small geographic areas in the pretests has been significant, and the plan is to prepare such lists for each standard metropolitan statistical area (SMSA) in 1980. In the final 1980 census pretest, the 1977 census of Oakland, California, about 87 percent of the persons enumerated on sample questionnaires who worked within the pretest blocked area were successfully coded to census tract and block of work.

Another objective of the pretest activity has been to test the feasibility of coding the place-of-work responses in the approximately 410 census district offices where the data-collection operation will be performed. However, the pretest results have demonstrated that it will not be efficient to complete the place-of-work processing at that level of decentralization in 1980. The coding will therefore be carried out in the Jeffersonville, Indiana; Laguna Niguel, California; and New Orleans, Louisiana, processing centers.

Although it has been determined that district-office place-of-work coding will not be feasible in 1980, two other approaches to using local knowledge in carrying out this work are being considered. The first possibility is the use of the lists of major-traffic-generator names and addresses prepared by local metropolitan planning organizations (MPOs) for the U.S. Department of Transportation. These lists would be used by Census Bureau staff to check the coverage of the place-of-work coding materials and supplement them where necessary. The second, which will be tested in the Richmond, Virginia, dress-rehearsal census, involves contacting the Richmond MPO staff by telephone from the New Orleans processing facility for assistance in coding any frequently reported worksite addresses that cannot be coded from census resource materials. Should this technique prove worthwhile, it will be implemented in the 1980 coding operation.

TABULATIONS OF JOURNEY-TO-WORK DATA

At present, tabulations of sample data such as those related to the journey to work are in the planning stage. Subject-matter specialists in the Census Bureau are reviewing the content of 1970 tabulations in conjunction with recommendations received from transportation planners, other data users, and members of the Fed-

eral Agency Council on the 1980 census. It is possible, however, to make a few general observations on the status of these deliberations.

First, it certainly is safe to say that a wider variety of journey-to-work data will be published and available on computer summary tapes in 1980 because of the new questionnaire items on the subject. In addition to information on place of work and means of transportation to work, statistics on travel time to work, the incidence of carpooling, and carpool occupancy should be available by worker residence (census tract, state, county, place, and statistical area). Proposals are also being considered to produce similar tabulations of the number and characteristics of persons by place of work. Such tabulations would probably be made available on microform or as part of special-subject reports.

In regard to special-subject reports, discussions have focused on revising the content of the 1970 report Journey to Work for 1980 to include new cross-tabulations of means of transportation, travel time, and carpooling for detailing commuting flows within large SMSAs. Because of the volume of user requests, plans also call for exploring the possibility of producing a companion report in 1980 that covers small and medium-sized SMSAs as well.

Finally, discussions have been under way with respect to the creation of urban transportation planning packages (UTPPs) for individual SMSAs after the 1980 census results are available. First produced after the 1970 census, UTPPs are special tabulations of census data for traffic zones and other geographic areas of interest to transportation planners. Local planning agencies submitted specifications showing the equivalency between combinations of census tracts and blocks and the traffic zones in their SMSA, and the Census Bureau then produced a standard set of tabulations for those planning areas on a reimbursable basis.

The 1970 UTPPs consisted of four tabulations dealing with (a) the characteristics of workers and households by traffic zone of residence, (b) the characteristics of workers by traffic zone of work, (c) the characteristics of workers and households by urbanized area, and (d) workers by traffic zone of residence by traffic zone of work by means of transportation to work. The latest proposal for the 1980 UTPPs includes these same four tabulations, plus two new ones: (a) the characteristics of workers by specified block groups and (b) the characteristics of workers in county-to-county commuter flows. In addition, the content of each tabulation has been revised to accommodate new data on carpooling, vehicle occupancy, and travel time. The urbanized area tabulation has also been changed to allow the local agency to specify the SMSA, county, or central city components of the SMSA, or some other study area of interest if it is desired.

CONCLUSIONS

The journey-to-work subject-matter area will be ex-

panded in the 1980 census. New questions on carpooling arrangements, carpool occupancy, and travel time, as well as the traditional items on place of work and means of transportation to work, should provide planners with a wealth of useful transportation-related information. In addition, the development of new coding resource materials to deal with incomplete responses should significantly improve the quality of place-of-work coding to census tracts and blocks within metropolitan areas.

According to the U.S. census, there are currently 271 SMSAs having populations of less than 200 000 and 104 having populations of more than 200 000. For the 1980 census, geographic base file-dual independent map encoded (GBF/DIME) systems will be available for those parts of 277 urbanized areas that have address systems. The areal structure of census tracts in 1980 will be similar to that established for 1970: There will be no change in 75 percent of the tracts, 8 percent are splits of 1970 tracts, and 17 percent involve boundary changes.

The priority of the 1980 census will be to provide a better count of the population. Most of the new census resources are going into this effort.

There have been five pretests of the 1980 census. In each pretest, different ideas were used, and the public reaction to the questionnaire was evaluated. The Travis County (Austin), Texas, test evaluated work-trip coding at the district-office level. The results indicated that the production rate for a mass-coding effort was too low. The Camden, New Jersey, pretest again evaluated place-of-work coding at the district-office level and found the accuracy rates to be very low. In the Oakland, California, pretest, extensive resource materials were supplied to the coders and this resulted in an exceptionally good coding rate for work trips. In the Richmond, Virginia, pretest, the coding was done at one of the three national data-processing centers.

In 1980, not only the GBF/DIME file material but also other various lists will be used. A key listing will be that from the census economic survey, which includes all of the employers in the nation as of the last economic survey. Other lists will include a major-generator list, a military establishment list, hospitals, government facilities, schools and universities, and shopping centers.

It is expected that the GBF/DIME file will code 50 percent of the responses. The other lists will provide locations for an additional 40 percent, and the balance (10 percent) will be coded in cooperation with the metropolitan planning organizations (MPOs).

The accuracy of the planning package from the 1980 census data will greatly exceed that of the 1970 package because of the extra effort that is going into processing the work-trip responses. It was suggested that workshops should be provided for the states and MPOs in the use of the package.

The workshop participants recommended that the census include the following additional data items:

1. Traffic counts (including estimates of vehicle kilometers of travel),
2. Vehicle classification on major highways,
3. External origin and destination surveys,
4. Maps of transit routes and service frequencies,
5. Inventories of street systems and capacities,
6. Inventories of parking supplies and costs, and
7. Sizes of major generators.

The workshop participants also suggested that it would be desirable to have a few MPOs undertake an all-trip home-interview survey that would determine the relationships between the work trip and all other trips. Such relationships could be used in areas that do not do a survey in 1980.