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Population Characteristics

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MOBILITY OF THE POPULATION OF THE UNITED STATES MARCH 1970 TO MARCH 1974

U. S. DEPARTMENT OF COMMERCE
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MOBILITY OF THE POPULATION OF THE UNITED STATES MARCH 1970 TO MARCH 1974

Persons moving from metropolitan areas exceeded inmigrants from nonmetropolitan areas in the period 1970-74, according to estimates from the Current Population Survey. In the period March 1970 to March 1974, the survey data indicate that 5,965,000 persons 4 years old and over moved out of metropolitan areas of the United States and 4,121,000 moved into metropolitan areas, resulting in a net migration loss from metropolitan to nonmetropolitan areas of 1,844,000.

These data for metropolitan areas refer to Standard Metropolitan Statistical Areas (SMSA's) as they were defined at the time of the 1970 census. The data do not include new SMSA's which have been created since the 1970 census or counties added to existing SMSA's.

The data do not indicate a total population loss to metropolitan areas or a decline in urbanization. The metropolitan outmigration, in combination with changes in rates of natural increase and immigration, have brought about a lower rate of metropolitan growth in recent years,[1] but not a reversal of the long-standing trend toward increasing urbanization of the population of the United States. Even during the 1960's, migration from nonmetropolitan areas accounted for a relatively small amount of population change in metropolitan areas. Between 1960 and 1970 only about one-ninth of total population growth in metropolitan areas was the result of net inmigration from nonmetropolitan parts of the United States.[2]

It is likely that a large part of the net movement from metropolitan areas represents continued urban development around the fringes of metropolitan areas. During the 1960's employment in the part of metropolitan areas outside the central cities increased faster than population.[3] As jobs increased in these areas, workers could more easily commute from communities just beyond metropolitan boundaries.

Changes in metropolitan migration since 1970 may represent only a temporary departure from previous patterns, however. Future residence changes in and around metropolitan areas are likely to reflect growth policies of individual municipalities and available means of commuting.

CITIES AND SUBURBS

In the 4-year period from March 1970 to March 1974, central cities of metropolitan areas continued to experience net outmigration (5,889,000 persons 4 years and over), just as they had in the 1960's.[4] The mostly suburban part of metropolitan areas outside the central cities continued to experience net inmigration (4,045,000) in the 1970-74 period. Data for central cities relate to city boundaries existing at the time of the 1970 census.

Persons moving to central cities were slightly younger than persons moving from central cities. In the 1970-74 period the median age of inmigrants to central cities was 24.8 years, compared with a median age of 27 among outmigrants.

Blacks were relatively more numerous in the migration stream to central cities than in the stream from central cities. In the 1970-74 period, blacks constituted 12.1 percent of inmigrants (4 years old and over) to central

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[1] For rates of population change in SMSA's for 1950-60 and 1960-70, see table 32 in U.S. Bureau of the Census, Census of Population: 1970, Vol. 1, Characteristics of the Population, Part A, Number of Inhabitants, Section 1 - United States. Washington, D.C.: U.S. Government Printing Office, 1972. For estimated population change in SMSA's for 1970-72, see U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 505, "Estimates of the Population of Metropolitan Areas, 1971 and 1972." Washington, D.C.: U.S. Government Printing Office, 1973.

[2] U.S. Bureau of the Census, Census of Population and Housing: 1970, PHC(2)-1 General Demographic Trends for Metropolitan Areas, 1960 to 1970, United States Summary. Washington, D.C: U.S. Government Printing Office, 1971. Table 7.

[3] U.S. Bureau of the Census, Special Economic Reports, Series ES20(72)-1, "Employment and Population Changes--Standard Metropolitan Statistical Areas and Central Cities." Washington, D.C.: U.S. Government Printing Office, 1972. Table A.

[4] U.S. Bureau of the Census, Census of Population and Housing: 1970, PHC(2)-1, General Demographic Trends for Metropolitan Areas, 1960 to 1970, United States Summary. Washington, D.C.: U.S. Government Printing Office, 1971. Tables 11 and 11A.

cities and 7.6 percent of outmigrants. A continuation of this migration pattern would contribute to raising the percent black in central cities. Differences in rates of natural increase also contribute to altering the percent black.

REGIONAL PATTERNS

For the period March 1970 to March 1974, the direction of regional migration patterns was the same as in 1970-73.[5] The South and the West had net inmigration and the Northeast and North Central regions had net outmigration of persons 4 years old and over in 1970-74.

During the latter half of the 1950-60 decade the South changed from its long-standing pattern of net outmigration to net inmigration.[6] This change was brought about as more whites moved to the region than moved from it between 1955 and 1960. Since 1960 the South has continued to experience net inmigration of whites.

During the 1960's the traditional pattern of black outmigration from the South continued. In the 1965-70 period the ratio of black outmigrants (5 years old and over) to black inmigrants (5 years old and over) was 2.339 for the South, indicating that black outmigrants were about 2-1/3 times as numerous as black inmigrants to the South. The ratio of outmigrants to inmigrants was less in the 1970-74 period (0.873), which may indicate a smaller difference between the number of black inmigrants and outmigrants. However, due to the small sample size, this difference is not statistically significant.

The South's changeover from net outmigration to net inmigration has resulted from a combination of several forces: (1) a reduction in the tendency of the population born in the region to move to other regions, (2) an increase in the rate of movement to the South by persons born outside the South, and (3) increased return migration of Southern-born persons who had previously left the South.[7] The data from the March 1974 survey do not allow the separate identification of each of these factors.

MIGRATION DIFFERENTIALS

Persons engaging in the different forms of residential mobility typically differ from persons who do not move and may, as a result, have an impact on areas of origin and destination greater than their numbers alone would imply. Highest mobility rates are usually found among persons in their twenties; this movement reflects the establishment of new households by young adults who have just finished school, recently married, or newly entered the labor force. Although 37 percent of all persons 4 years old and over moved during the 4-year period, the rate reached 67 percent among persons 25 to 29 and 62 percent for persons 20 to 24. Children 4 to 14 had higher mobility rates (reflecting the younger age of their parents) than persons 15 to 19 years old.

Migration patterns differ by race as well, with blacks moving shorter distances than whites. Although whites and blacks have nearly the same percent movers (37.0 and 38.2 percent, respectively), blacks are more likely to move within the same county and whites are twice as likely to move to a different county.

Educational attainment also influences the likelihood of migration. College graduates are more likely to move between counties or States than high school graduates who, in turn, migrate twice as often as persons with only a grade school education. Among persons 18 years

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[5]U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 262, "Mobility of the Population of the United States: March 1970 to March 1973." Washington, D.C.: U.S. Government Printing Office, 1974. Estimated components of population change--natural increase and net migration--are given for individual States for the 1970-73 period in U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 521, "Estimates of the Population of States with Components of Change, 1970 to 1973." Washington, D.C.: U.S. Government Printing Office, 1974.

[6]Estimates of net migration by race for each region for decades from 1870 to 1950 may be found in Hope T. Eldridge, and Dorothy Swaine Thomas. Population Redistribution and Economic Growth, United States, 1870-1950, Demographic Analyses and Interrelations, Volume III. Philadelphia, Pa.: American Philosophical Society, 1964. For 1950 to 1960 see Hope T. Eldridge. Net Intercensal Migration for States and Geographic Divisions of the United States, 1950-1960, Methodological and Substantive Aspects. Philadelphia, Pa.: Population Studies Center, University of Pennsylvania, 1965. Also, Gladys K. Bowles and James D. Tarver, Net Migration of the Population, 1950-60 by Age, Sex, and Color, Volume II--Analytical Groupings of Counties. Washington, D.C.:U.S. Government Printing Office, 1965.

[7]Data on the role played by these three forces in changing Southern migration between 1955-60 and 1965-70 may be found in Larry H. Long and Kristin A. Hansen, "Trends in Return Migration to the South," paper presented at the annual meeting of the Southern Regional Demographic Group, Atlanta, Georgia, October 17-19, 1974.

old and over, 25.8 percent of those with 4 or more years of college moved to a different county between March 1970 and March 1974, compared with 14.9 percent of those with 4 years of high school and 7.3 percent of those with only 8 years of education or less.

The presence and ages of children in a family influence the likelihood of moving. Among married men who were 25 to 34 years old and living with their wives at the survey date, those with no children under 18 were more residentially mobile than those with children under 18. Also, the husband-wife families whose children were all under six years old were more residentially mobile than those with children over six years. Thus, the presence of school-age children acts to reduce the geographic mobility of these families.

The data in this report are for individuals and therefore do not relate directly to the migration of families. For many purposes, however, the mobility of family heads can be used as an adequate indication of the mobility of families because most of the family members usually have the same mobility status as the head. However, some families were formed during the migration interval, and others were dissolved. Still other families experienced change in composition as a result of persons joining the family or leaving it.

RELATED REPORTS

Statistics on the mobility of the population have been collected in the Current Population Survey since 1948. Tables similar to those in this report were published for the period 1970-1973 in Series P-20, No. 262. Figures for 1970-1971 were issued in Series P-20, No. 235, and similar statistics were published in this series each year beginning with the report for 1947-1948.

Statistics on geographic mobility of the population for cities, counties, SMSA's, urbanized areas, State economic areas, States, divisions, regions, and the United States appear in Volume I of the 1970 Census of Population (based on State of birth or residence 5 years before the census). Detailed statistics on mobility status by race and sex for State economic areas, SMSA's, States, divisions, regions, and the United States appear in Volume II, Subject Reports: PC(2)-2A, State of Birth; PC(2)-2B, Mobility for States and the Nation; PC(2)-2C, Mobility for Metropolitan Areas; PC(2)-2D, Lifetime and Recent Migration; PC(2)-2E, Migration Between State Economic Areas; and PC(2)-7E, Occupation and Residence in 1965. Some other subject reports of the 1970 census present statistics on mobility status in relation to the main subject of the report.

DEFINITIONS AND EXPLANATIONS

Coverage. The population in this report includes the civilian noninstitutional population of the United States plus approximately 1,067,000 members of the Armed Forces in the United States living off post or with their families on post in 1974, but excludes all other members of the Armed Forces.

Geographic Regions. The four major regions of the United States for which data are presented in this report represent groups of States, as follows:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.

North Central: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin.

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia.

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

Standard Metropolitan Statistical Areas. Except in New England a standard metropolitan statistical area (SMSA) is a county or group of contiguous counties which contain at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county or counties containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, SMSA's consist of towns and cities, rather than counties.

The figures shown in this report for standard metropolitan statistical areas (SMSA's) are based on the SMSA's as defined on the basis of the 1970 census.

Central cities. The population inside SMSA's is further classified as in "central cities" and in the "balance of the SMSA." With a few exceptions, central cities are determined according to the following criteria:

1. The largest city in an SMSA is always a central city.

2. One or two additional cities may be secondary central cities on the basis and in the order of the following criteria:

a. The additional city or cities have at least 250,000 inhabitants.

b. The additional city or cities have a population of one-third or more of that of the largest city and a minimum population of 25,000.

The figures in this report for central cities of SMSA's are based on the boundaries of those cities as they existed in 1970. The "balance of the SMSA" refers to the remainder of the SMSA, outside the central city or cities.

Metropolitan-nonmetropolitan residence. The population residing in SMSA's constitute the metropolitan population. The terms "nonmetropolitan" and "outside SMSA's" are synonymous.

Mobility status. The population of the United States 4 years old and over has been classified according to mobility status on the basis of a comparison between the place of residence of each individual at the survey date and the place of residence 4 years earlier.

In the classification, three main categories are distinguished:

1. Nonmovers are all persons who were living in the same house at the end of the period as at the beginning of the period.
2. Movers are all persons who were living in a different house in the United States at the end of the period than at the beginning of the period.

3. Migrants are all persons who were living in a different county in the United States at the end of the period than at the beginning of the period.
4. Persons abroad include all persons, either citizens or aliens, whose place of residence was outside the United States at the beginning of the period, that is, in an outlying area under the jurisdiction of the United States or in a foreign country.

Movers are subdivided in terms of type of mobility in the following ways:

1. Within or between the central cities and the balance of SMSA's.
2. Within and between SMSA's and the area outside SMSA's.
3. Same county or different county. Persons moving between counties are classified by whether the two counties were in the same or different States.

Age. Age refers to age at last birthday.

Race. The population is divided into three groups on the basis of race: white, Negro, and "other races." The last category includes Indians, Japanese, Chinese, and any other race except white and Negro. In this report "other races" are included in the totals but not shown separately.

Marital status. The marital status classification identifies four major categories: single, married, widowed, and divorced.

In this report a person was classified as "Married, wife present" if the wife was reported as a member of the household, even though she may have been temporarily absent on business or on vacation, visiting, in a hospital, etc., on the survey date.

Household. A household consists of all the persons who occupy a housing unit. A house, an apartment, or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is either (1) direct access from the outside or through a common hall or (2) a kitchen or cooking equipment for the exclusive use of the occupants.

A household includes the related family members and all the unrelated persons, if any, such as lodgers, boarders, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit, or a group of unrelated persons sharing a housing unit as partners, is also counted as a household. The count of households excludes group quarters.

Group quarters. Group quarters as presented here include noninstitutional living arrangements for groups containing five or more persons unrelated to the person in charge. Inmates of institutions (starting in 1972) are not included in the Current Population Survey.

Family. The term "family," as used here, refers to a group of two persons or more related by blood, marriage, or adoption and residing together; all such persons are considered as members of one family. A lodger and his wife who are not related to the head of the household, or a resident employee and his wife living in, are considered as a separate family and not as part of the head's family. Thus, a household may contain more than one family. However, if the son of the head of the household and the son's

wife are members of the household, they are treated as part of the head's family. A household head living alone, or with unrelated persons only, is regarded as a household but not as a family. Thus, some households do not contain a family.

Primary family. A primary family is a family that includes among its members the head of a household.

Primary individual. A primary individual is a household head living alone or with nonrelatives only.

Head of household or family. One person in each household or family is designated as the "head." The number of household heads, therefore, is equal to the number of households and the number of family heads equals the number of families. The head is usually the person regarded as the head by the members of the group. Married women are not classified as heads if their husbands are living with them at the time of the survey.

Own children. "Own" children in a family are sons and daughters, including stepchildren and adopted children, of the family head. The count of own children under 18 years old is limited to single (never married) children.

Years of school completed. Data on years of school completed in this report were derived from the combination of answers to questions concerning the highest grade of school attended by the person and whether or not that grade was finished. The questions on educational attainment apply only to progress in "regular" schools. Such schools include graded public, private, and parochial elementary and high schools (both junior and senior high), colleges, universities, and professional schools, whether day schools or night schools. Thus, regular schooling is that which may advance a person toward an elementary school certificate or high school diploma, or a college, university,or professional school degree. Schooling in other than regular schools was counted only if the credits obtained were regarded as transferable to a school in the regular school system.

Civilian labor force. The "civilian labor force" is comprised of all civilians classified as employed or unemployed during the survey week.

Employed. Employed persons comprise (1) all civilians who, during the specified week, did any work at all as paid employees or in their own business or profession, or on their own farm, or who worked 15 hours or more as unpaid workers on a farm or in a business operated by a member of the family, and (2) all those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, or labor-management dispute, or because they were taking time off for personal reasons, whether or not they were paid by their employers for time off, and whether or not they were seeking other jobs. Excluded from the employed group are persons whose only activity consisted of work around the house (such as own home housework, painting or repairing own home, etc.) or volunteer work for religious, charitable, and similar organizations.

Unemployed. Unemployed persons are those civilians who, during the survey week, had no employment but were available for work and (1) had engaged in any specific jobseeking activity within the past 4 weeks, such as registering at a public or private employment office, meeting with prospective employers, checking with friends or relatives, placing or answering advertisements, writing letters of application, or being on a union or professional register; (2) were waiting to be called back to a job from which they had been laid off; or (3) were waiting to report to a new wage or salary job within 30 days.

Not in the labor force. All civilians who are not classified as employed or unemployed are defined as "Not in the labor force." This group who are neither employed or seeking work includes persons engaged only in own home housework, attending school, or unable to work because of long-term physical or mental illness; persons who are retired or too old to work; seasonal workers for whom the survey week fell in an off season, and the voluntarily idle. Persons doing only unpaid family work (less than 15 hours) are also classified as not in the labor force.

Occupation. The data on occupation of employed persons refer to the civilian job held during the survey week. Persons employed at two or more jobs were reported in the job at which they worked the greatest number of hours during the week.

The major groups used here are mainly the major groups used in the 1970 Census of Population. The composition of these groups is shown in Volume I, Characteristics of the Population.

Income. For each person 14 years old and over in the sample, questions were asked on the amount of money income received in the preceeding calendar year from each of the following sources: (1) money wages or salary; (2) net income from nonfarm self-employment; (3) net income from farm self-employment; (4) Social

Security; (5) dividends, interest (on savings or bonds), income from estates or trusts, or net rental income; (6) public assistance or welfare payments; (7) unemployment or workman's compensation, government employee pensions, or veterans' payments; (8) private pensions, annuities, alimony, regular contributions from persons not living in the household, net royalties, and other periodic income.

The amounts received represent income before deductions for personal taxes, Social Security, bonds, etc. It should be noted that although the income statistics refer to receipts during the preceding year the characteristics of the person, such as age and marital status refer to the survey date.

SOURCE AND RELIABILITY OF THE ESTIMATES

Source of data. The estimates are based on data obtained in March of 1974 in the Current Population Survey of the Bureau of the Census. The sample is spread over 461 areas comprising 923 counties and independent cities with coverage in each of the 50 States and the District of Columbia. Approximately 47,000 occupied households are eligible for interview each month. Of this number 2,000 occupied units, on the average, are visited but interviews are not obtained because the occupants are not found at home after repeated calls or are unavailable for some other reason. In addition to the 47,000, there are also about 8,000 sample units in an average month which are visited but are found to be vacant or otherwise not to be interviewed.

The estimating procedure used in this survey involved the inflation of the weighted sample results to independent estimates of the civilian noninstitutional population of the United States by age, race, and sex. These independent estimates were based on statistics from the 1970 Census of Population; statistics of births, deaths, immigration and emigration; and statistics on the strength of the Armed Forces.

Reliability of the estimates. Since the estimates are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and enumerators. As in any survey work, the results are subject to errors of response and of reporting, as well as being subject to sampling variability.

The standard error is primarily a measure of sampling variability, that is, of the variations that occur by chance because a sample rather than the whole of the population is surveyed. As calculated for this report, the standard error also partially measures the effect of certain response and enumeration errors, but it does not measure any systematic biases in the data. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census figure by less than the standard error. The chances are about 90 out of 100 that this difference would be less than 1.6 times the standard error, and the chances are about 95 out of 100 that the difference would be less than twice the standard error.

All statements of comparison appearing in the text are significant at a 1.6 standard error level or better, and most are significant at a level of more than 2.0 standard errors. This means that for most differences cited in the text, the estimated difference is greater than twice the standard error of the difference. Statements of comparison qualified in some way (e.g., by use of the phrase "some evidence") have a level of significance between 1.6 and 2.0 standard errors.

Table A. Standard Errors of Estimated Number of Total Persons or Nonmovers

Educational Attainment, Labor Force Status, Marital Status, Personal Income and One Per Household Type Characteristics

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error	Size of estimate	Standard error
10.....	4	2,500.....	67
25.....	7	5,000.....	93
50.....	10	7,500.....	112
100.....	12	10,000.....	126
250.....	22	15,000.....	148
500.....	30	25,000.....	173
1,000.....	43	50,000.....	164

Note: See the text for a description of which table of standard errors to use.

The figures presented in tables A, B, C, and D are approximations to the standard errors of various estimates shown in this report. In order to derive standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, the tables of standard errors provide an indication of the order of magnitude of the standard errors rather than the precise standard error for any specific item.

Table B. Standard Errors of Estimated Number of Total Persons or Nonmovers

All Other Characteristics, Total or White

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error	Size of estimate	Standard error
10.....	7	7,500.....	182
25.....	11	10,000.....	209
50.....	15	15,000.....	251
100.....	21	25,000.....	317
250.....	34	50,000.....	415
500.....	48	75,000.....	465
1,000.....	67	100,000.....	480
2,500.....	106	150,000.....	474
5,000.....	149		

Note: See the text for a description of which table of standard errors to use.

Table C. Standard Errors of Estimated Number of Total Persons or Nonmovers

All Other Characteristics, Negro and Other Races

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error	Size of estimate	Standard error
10.....	7	1,000.....	68
25.....	11	2,500.....	104
50.....	16	5,000.....	140
100.....	22	7,500.....	157
250.....	35	10,000.....	166
500.....	49	15,000.....	160

Note: See the text for a description of which table of standard errors to use.

Table D. Standard Errors of Estimated Number of Movers

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error	Size of estimate	Standard error
10.....	10	5,000.....	225
25.....	16	7,500.....	273
50.....	23	10,000.....	312
100.....	32	15,000.....	385
250.....	51	25,000.....	468
500.....	72	50,000.....	596
1,000.....	102	75,000.....	639
2,500.....	160	100,000.....	616

Note: See the text for a description of which table of standard errors to use.

Description of which standard error table to use. Tables A-D contain the standard errors of estimated numbers of persons. Tables A-C are to be used for estimates of total persons or of nonmovers, whereas table D is to be used for estimates of movers. Table A is for estimates of total persons or nonmovers broken down by educational attainment, marital status, labor force status, personal income, or in categories which seem likely to occur once in a household (e.g., female, age 25-34). Tables B and C are for all other estimates of total persons or nonmovers; B is for total or white persons, and C is for persons of Negro or other races. Table D is for all movers, regardless of race or category.

The following are examples showing how to decide which standard error table to use for a particular estimate.

1. For the estimate of the total number of white nonmovers 4 years and over (98,390,000 in table 1), use the standard error table B.

2. For the estimate of the number of white nonmovers 18 and over who have completed 0 to 8 years of school (19,089,000 in table 7), use standard error table A since this is an educational attainment breakdown.

3. For the estimate of the total number of Negro nonmovers 4 years and over (12,416,000 in table 1), use standard error table C.

4. For the estimate of the total number of Negro persons that moved inside SMSA's in a different county (1,352,000 in table 27), use standard error table D.

The reliability of an estimated percentage, computed by using sample data for both numerator and denominator, depends upon both the size of the percentage and the size of the total upon which the percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. Tables E, F, G, and H contain the standard errors of estimated percentages. The same criteria as those described above for the standard errors of the estimated number of persons should be followed in determining which table to use. When the numerator and denominator of the percentage are in different categories, use the table indicated by the numerator.

Table E. Standard Errors of Estimated Percentages of Total Persons or Nonmovers

Educational Attainment, Labor Force Status, Marital Status, Personal Income and One Per Household Type Characteristics

(68 chances out of 100)

Estimated percentage	Base of percentage (thousands)									
	50	100	250	500	1,000	2,500	5,000	10,000	25,000	50,000
2 or 98	2.7	1.9	1.2	0.9	0.6	0.4	0.3	0.2	0.1	0.1
5 or 95	4.2	3.0	1.9	1.3	0.9	0.6	0.4	0.3	0.2	0.1
10 or 90	5.8	4.1	2.6	1.8	1.3	0.8	0.6	0.4	0.3	0.2
20 or 80	7.7	5.5	3.5	2.4	1.7	1.1	0.8	0.5	0.3	0.2
25 or 75	8.4	5.9	3.7	2.6	1.9	1.2	0.8	0.6	0.4	0.3
35 or 65	9.2	6.5	4.1	2.9	2.1	1.3	0.9	0.7	0.4	0.3
40 or 60	9.5	6.7	4.2	3.0	2.1	1.3	0.9	0.7	0.4	0.3
50	9.6	6.8	4.3	3.1	2.2	1.4	1.0	0.7	0.4	0.4

Note: See the text for a description of which table of standard errors to use.

Table F. Standard Errors of Estimated Percentages of Total Persons or Nonmovers

All Other Characteristics, Total or White

(68 chances out of 100)

Estimated percentage	Base of percentage (thousands)									
	250	500	1,000	2,500	5,000	10,000	25,000	50,000	100,000	150,000
2 or 98	1.9	1.3	0.9	0.6	0.4	0.3	0.2	0.1	0.1	0.1
5 or 95	2.9	2.1	1.5	0.9	0.7	0.5	0.3	0.2	0.1	0.1
10 or 90	4.1	2.9	2.0	1.3	0.9	0.6	0.4	0.3	0.2	0.2
20 or 80	5.4	3.8	2.7	1.7	1.2	0.9	0.5	0.4	0.3	0.2
25 or 75	5.9	4.1	2.9	1.9	1.3	0.9	0.6	0.4	0.3	0.2
35 or 65	6.5	4.6	3.2	2.0	1.4	1.0	0.6	0.5	0.3	0.3
40 or 60	6.6	4.7	3.3	2.1	1.5	1.0	0.7	0.5	0.3	0.3
50	6.8	4.8	3.4	2.1	1.5	1.0	0.7	0.5	0.3	0.3

Note: See the text for a description of which table of standard errors to use.

Table G. Standard Errors of Estimated Percentages of Total Persons or Nonmovers

All Other Characteristics, Negro and Other Races

(68 chances out of 100)

Estimated percentage	Base of percentage (thousands)									
	50	100	250	500	1,000	2,500	5,000	10,000	15,000	25,000
2 or 98	4.4	3.1	2.0	1.4	1.0	0.6	0.4	0.3	0.3	0.2
5 or 95	6.8	4.8	3.0	2.2	1.5	1.0	0.7	0.5	0.4	0.3
10 or 90	9.4	6.6	4.2	3.0	2.1	1.3	0.9	0.7	0.5	0.4
20 or 80	12.5	8.8	5.6	4.0	2.8	1.8	1.3	0.9	0.7	0.6
25 or 75	13.5	9.6	6.1	4.3	3.0	1.9	1.4	1.0	0.8	0.6
35 or 65	14.9	10.5	6.7	4.7	3.3	2.1	1.5	1.1	0.9	0.7
40 or 60	15.3	10.8	6.9	4.8	3.4	2.2	1.5	1.1	0.9	0.7
50	15.6	11.1	7.0	4.9	3.5	2.2	1.6	1.1	0.9	0.7

Note: See the text for a description of which table of standard errors to use.

Note when using small estimates. Percentage distributions are shown in this report only when the base of the percentage is greater than 75,000. Because of the large standard errors involved, there is little chance that percentages would reveal useful information when computed on a smaller base. Estimated totals are shown, however, even though the relative standard errors of these totals are larger than those for the corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs.

Data obtained from the Current Population Survey and from other sources indicated in this report are not entirely comparable. This is due in large part to differences in interviewer training and experience and in the differing survey processes. This is an additional component of error not reflected in the standard error tables. Therefore, caution should be used in comparing results between these different sources.

Illustration of the use of tables of standard errors. Table 1 of this report shows that 4,121,000 persons moved from outside SMSA's to SMSA's between March 1970 and March 1974. Table D shows the standard error on an estimate of this size to be approximately 202,000. The chances are 68 out of 100 that the estimate would have been a figure differing from a complete census figure by less than 202,000. The chances are 95 out of 100 that the estimate would have differed from a complete census figure by less than 404,000.

Of these 4,121,000 persons 673,000 or 16.3 percent were 25 to 29 years old. Table H shows the standard error of 16.3 percent on a base of 4,121,000 to be approximately 1.9 percent. Consequently, chances are 68 out of 100 that the estimated 16.3 percent would be within 1.9 percentage points of a complete census figure, and chances are 95 out of 100 that the estimate would be within 3.8 percentage points of a census figure, i.e., the 95 percent confidence interval would be from 12.5 to 20.1 percent.

Differences. For a difference between two sample estimates, the standard error is approximately equal to the square root of the sum of the squares of the standard errors of each estimate considered separately. This formula will represent the actual standard error quite accurately for the difference between two estimates of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. If, however, there is a high positive correlation between the two characteristics, the formula will overestimate the true standard error.

Illustration of the computation of the standard error of a difference. Table 1 of the report shows between March 1970 and March 1974, 5,965,000 persons moved from SMSA's to outside SMSA's. Thus, the apparent difference between the number of persons moving into and out of SMSA's is 1,844,000. The standard error of 4,121,000 is 202,000 as shown above. Table D shows the standard error on an estimate of 5,965,000 to be approximately 244,000. The standard error of the estimated difference of 1,844,000 is about:

$$317{,}000 = \sqrt{(202{,}000)^2 + (244{,}000)^2}$$

This means the chances are 68 out of 100 that the estimated difference based on the samples would be less than 317,000 from

Table H. Standard Errors of Estimated Percentages of Movers

(68 chances out of 100)

Estimated percentage	Base of percentage (thousands)									
	100	250	500	1,000	2,500	5,000	10,000	25,000	50,000	100,000
2 or 98	4.5	2.9	2.0	1.4	0.9	0.6	0.5	0.3	0.2	0.1
5 or 95	7.0	4.4	3.1	2.2	1.4	1.0	0.7	0.4	0.3	0.2
10 or 90	9.7	6.1	4.3	3.1	1.9	1.4	1.0	0.6	0.4	0.3
20 or 80	12.9	8.2	5.8	4.1	2.6	1.8	1.3	0.8	0.6	0.4
25 or 75	14.0	8.8	6.3	4.4	2.8	2.0	1.4	0.9	0.6	0.4
35 or 65	15.4	9.7	6.9	4.9	3.1	2.2	1.5	1.0	0.7	0.5
40 or 60	15.8	10.0	7.1	5.0	3.2	2.2	1.6	1.0	0.7	0.5
50	16.1	10.2	7.2	5.1	3.2	2.3	1.6	1.0	0.7	0.5

Note: See the text for a description of which table of standard errors to use.

the difference derived using complete census figures. The 68 percent confidence interval around the 1,844,000 difference is from 1,527,000 to 2,161,000, i.e., 1,844,000 $\pm$ 317,000. A conclusion that the average estimate of the difference derived from all possible samples lies within a range computed in this way would be correct for roughly 68 percent of all possible samples. The 95 percent confidence interval is 1,210,000 to 2,478,000 and thus we can conclude with 95 percent confidence that the number of persons moving out of SMSA's was actually greater than the number of persons moving into SMSA's.

Medians. The sampling variability of an estimated median depends upon the form as well as on the size of the distribution from which the median is determined. An approximate method for measuring the reliability of a median is to determine an interval about the estimated median, such that there is a stated degree of confidence that the median based on a complete census lies within the interval. The following procedure may be used to estimate confidence limits of a median based on sample data:

(1) From the appropriate percentage table determine the standard error of a 50 percent characteristic, using the appropriate base.

(2) add to and subtract from 50 percent the standard error determined in step (1).

(3) using the distribution of the characteristic, read off the confidence interval corresponding to the two points established in step (2). A two standard error confidence interval may be determined by finding the values corresponding to 50 percent plus and minus twice the standard error determined in step (1).

Illustration of the computation of the standard error of a median. Using estimates from table 1 it can be shown that the median age of movers living in a different house in the United States was 25.8 years in 1974. The size, or base, of the distribution from which this median was determined is 72,036,000 persons.

(1) Table H shows that the standard error of 50 percent on a base of 72,036,000 is about 0.6 percent.

(2) To obtain a two standard error confidence interval on the estimated median, initially add to and subtract from 50 percent twice the standard error found in step (1). This yields percentage limits of 48.8 and 51.2.

(3) From table 1, it can be seen that 47.6 percent of the movers were younger than 25 years old and 14.6 percent of the movers were in the 25 to 29 year old age group. By linear interpolation the lower limit on the estimate is found to be about:

$$25.0 + 5.0\left(\frac{48.8 - 47.6}{14.6}\right) = 25.4$$

Similarly, the upper limit may be found by linear interpolation to be about

$$25.0 + 5.0\left(\frac{51.2 - 47.6}{14.6}\right) = 26.2$$

Thus, the 95 percent confidence interval ranges from 25.4 to 26.2 years of age.