

APPENDIX

DEFINITIONS AND EXPLANATIONS

Population coverage. This report includes the civilian noninstitutional population of the United States and members of the Armed Forces in the United States living off post or with their families on post, but excludes all other members of the Armed Forces.

Mobility status. The population of the United States, 1 year old and over, was classified according to mobility status on the basis of a comparison between the place of residence of each individual at the time of the March 1976 CPS and the place of residence 1 year earlier. Nonmovers are all persons who were living in the same house at the end of the period as at the beginning of the period. Movers are all persons who were living in a different house at the end of the period than at the beginning of the period. Movers from 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.

Metropolitan-nonmetropolitan residence. The population residing in standard metropolitan statistical areas (SMSA's) constitutes the metropolitan population. Except in New England, an SMSA is a county or group of contiguous counties which contains 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 county. In New England SMSA's consist of towns and cities, rather than counties. The metropolitan population in this report is based on SMSA's as defined in the 1970 census and does not include any subsequent additions or changes. The terms "nonmetropolitan" and "outside SMSA's" are synonymous. The "balance of the SMSA" refers to the remainder of the SMSA, outside the central city or cities.

Size of SMSA. The term "size of SMSA" refers to the number of persons living in the SMSA at the time of the 1970 Census of Population.

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.

Age. This classification is based on the age of the person at his or her last birthday.

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

Spanish origin. Persons of Spanish origin in this report were determined on the basis of a question that asked for self-identification of the person's origin or descent. Respondents were asked to select their origin (or the origin of some other household member) from a "flash card" listing ethnic origins. Persons of Spanish origin, in particular, were those who indicated that their origin was Mexican, Puerto Rican, Cuban, Central or South American, or some other Spanish origin.

Marital status. The marital status classification identifies four major categories: single, married, widowed, and divorced. These terms refer to the marital status at the time of the enumeration.

The category "married" is divided into "married, spouse present," and "married, spouse absent." A person was classified as "married, spouse present" if the husband or wife was reported as a member of the household, even though he or she may have been temporarily absent on business or on vacation, visiting, in a hospital, etc., at the time of the enumeration. The group "married, spouse absent" includes married persons living apart because either the husband or wife was employed and living at a considerable distance from home, was serving away from home in the Armed Forces, was residing in an institution, had moved to another area, had separated from their spouse because of marital discord, or had a different place of residence for any other reason.

Household. A household consists of all the persons who occupy a housing unit. A house, an apartment or other group of rooms, or 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, 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 rooming houses, college dormitories, military barracks, institutions, and other group quarters. Inmates of institutions (mental hospitals, rest homes, correctional institutions, etc.) were not included in the 1976 survey.

Family. The term "family," as used in this report, refers to a group of two or more persons related by blood, marriage, or adoption and residing together; all such persons are considered as members of the same family. Thus, if the son of the head of the household and the son's wife are in the household, they are treated as part of the head's family. On the other hand, a lodger and his wife not related to the head of the household or an unrelated caretaker and his wife who are members of the household are considered as additional families, and not a part of the household head's family. The term "size of family" refers to the number of persons who are living together and are related to each other by blood, marriage, or adoption. A primary family is a family that includes among its members the head of a household. A husband-wife family is a family with a head who is "married, wife present."

Head of household, or family. One person in each household (and in each family) is designated as the "head." The number of heads, therefore, is equal to the number of households (or 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.

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

Related persons and family members. In the classification of households by number of related persons, the head of the household and all persons in the household related to the head are included. In the classification of families by number of family members, the head of the family and all other persons in the family are included. The number of family members is the same as the size of the family.

Unrelated individual. The term "unrelated individuals," as used in this report refers to persons 14 years old and over (other than inmates of institutions) who are not living with any relatives. An unrelated individual may constitute a

one-person household, may be part of a household including one or more other families or unrelated individuals, or may reside in group quarters such as a rooming house. Thus, a widow living by herself or with one or more other persons not related to her, a lodger not related to the head of the household or to anyone else in the household, and a servant living in an employer's household with no relatives are examples of unrelated individuals.

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.

Labor force. Persons are classified as in the labor force if they were employed as civilians, unemployed, or in the Armed Forces during the survey week. The "civilian labor force" is comprised of all civilians 14 years old and over classified as employed or unemployed.

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 nor 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 14 years old and over 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 occupation groupings used here are mainly the major groups used in the 1970 Census of Population. The composition of these groups is shown in the 1970 Census of Population, PC(1)-C Series, **General Social and Economic Characteristics**. The categories used are combinations of detailed classifications.

Income. For each person in the sample 14 years old and over, questions were asked on the amount of money income received in the preceding calendar year. Although the income statistics refer to receipts during the preceding year the characteristics of the person, such as age, labor force status, etc., and the composition of families refer to the time of the survey. The income of the family does not include amounts received by persons who were members of the family during all or part of the income year if these persons no longer resided with the family at the time of enumeration. On the other hand, family income includes amounts reported by related persons who did not reside with the family during the income year but who were members of the family at the time of enumeration.

Receipt of public assistance. Families are classified as "with public assistance" if one or more persons in the family received any public assistance or welfare payments in the preceding calendar year.

Poverty status. Families and unrelated individuals are classified as being above or below the poverty level, using the poverty index adopted by a Federal Interagency Committee in 1969. This index provides a range of income cutoffs or "poverty thresholds" adjusted to take into account such factors as family size, sex and age of the family head, the number of children, and farm-nonfarm residence. The poverty cutoffs for farm families have been set at 85 percent of the nonfarm levels. These income cutoffs are updated every year to reflect the changes in the Consumer Price Index. The average poverty threshold for a nonfarm family of four was \$5,500 in 1975. For a detailed explanation of the poverty definition, see **Current Population Reports**, Series P-60, No. 102, "Characteristics of the Population Below the Poverty Level: 1974."

Mean. The mean (average) number of persons per family is the value obtained by dividing the number of persons having the characteristics under consideration by the appropriate number of families. The mean number of own children is the number of own children of the age under consideration divided by the total number of families with own children.

Median. The median is presented in connection with the data on age, years of school completed, and income. It is the value which divides the distribution into two equal parts, one-half of the cases falling below this value and one-half of the cases exceeding this value.

Rounding. Detailed data in the tables may not agree with the totals because of independent rounding. Furthermore, calculations such as means, medians, and percentages are based on the unrounded figures and therefore may not agree with those derived from rounded figures in the table.

Symbols. A dash "—" represents zero or rounds to zero. (B) means that the base is less than 75,000.

SOURCE AND RELIABILITY OF THE ESTIMATES

Source of data. Most of the estimates in this report are based on data collected by the Current Population Survey (CPS). Other information in the report are from journal articles and from decennial censuses of population. The sources of non-CPS data are footnoted in the text. The CPS sample was initially selected from the 1970 census files and is updated continuously to reflect new construction where possible (see Section "Nonsampling Variability" below). This sample is spread over 461 areas comprising 923 counties and independent cities. These areas are chosen to provide coverage in each State 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 for CPS data involves the inflation of weighted sample results to independent estimates of the civilian noninstitutional population of the United States by age, race, and sex. For October 1971 to the present the independent estimates are based on statistics from the 1970 Census of Population; statistics on births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces.

Decennial census of population. Decennial census data in this report are based on a 15-percent sample. Sampling errors for all data from the 15-percent sample of the decennial census shown in this report are small enough to be disregarded.

Reliability of the estimates. Since the CPS estimates in this report are based on samples, 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. There are two types of errors possible in an estimate based on a sample survey—sampling and nonsampling. For estimates in this report, indications of the magnitude of sampling error are provided, but the extent of nonsampling error is unknown.

Nonsampling variability. As in any survey work, the results are subject to errors of response and nonreporting in addition to sampling variability. Nonsampling errors can be attributed to many sources, e.g., inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness to provide correct information on the part of respondents, inability to recall information, mistakes made in collection, such as, in recording or coding the data, mistakes made in processing the data, mistakes made in estimating values for missing data, and failure to represent all units with the sample (undercoverage). The approximate magnitude of two sources of undercoverage in CPS is known and is described next.

Approximately 600,000 conventional new construction units were issued building permits prior to the 1970 census but building was not completed by the time of the census (i.e., April 1970); these units have no representation in the CPS sample. Conventional new construction, for which building permits were issued after the census, is represented. In addition to undercoverage of conventional new construction, CPS misses at least 200,000 new mobile homes. These are missed because there is no systematic sampling procedure to provide representation of mobile homes constructed since the 1970 census.

Sampling variability. The standard errors given in the tables are primarily measures 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, as such, 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 about 95 out of 100 that the difference would be less than twice the standard error.

All statements of comparison involving CPS data 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 the use of the phrase, "some evidence") have a level of significance between 1.6 and 2.0 standard errors. Comparisons involving data or statements from journal articles or publications not published

under the auspices of the Bureau of the Census do not necessarily meet these statistical standards.

Note when using small estimates. Percent distributions are shown in the report only when the base of the percentage is 75,000 or greater. Because of the large standard errors involved, there is little chance that percentages would reveal useful information when computed on smaller bases. 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 base of the percentage. 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. Estimated totals are shown even though the relative standard errors of these totals are larger than those for corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs. Consequently, particular care should be exercised in the interpretation of figures based on a relatively small number of cases or on small differences between estimates.

Comparability with other data. Data obtained from the CPS are not entirely comparable with data obtained from other surveys and sources due in a large part to differences in interviewer training and experience and survey processes. These differences are additional components of error not reflected in the standard error tables. Therefore, caution should be used in comparing data from different sources.

Standard error tables and their use. Instead of providing individual standard error tables for each characteristic of interest, generalized standard error tables for estimated numbers and estimated percentages of movers and non-movers, by race, are provided to conserve space. In all the standard error tables, standard errors for intermediate values not shown may be approximated by interpolation. In addition, where two or more items have nearly equal standard errors, such as total population and White population, one table is used to represent them. As a result, the tables of standard errors (along with the factor table, which is discussed below) provide an indication of the order of magnitude of the standard errors rather than the precise standard error for any specific item.

The figures presented in tables A-1 through A-4 for non-movers and tables A-6 and A-7 for movers provide approximations to standard errors of various estimates shown in this report. Table A-5 provides factors which must be used to calculate standard errors for nonmovers for each characteristic. Factors for persons for marital status or household and family characteristics are shown by "some members" and "all members." The factor for "all members" should be used for characteristics pertaining to all persons in a household or family. The factor for "some members" should be used for characteristics pertaining to only some members of a household such as "children under 18 years of age." The factor for families, households, primary or unrelated individuals should be used for items which can appear only once in a given household, e.g., "number of household heads" or "number of female household heads." All factors

must be applied to the generalized standard errors in tables A-1 through A-4 in order to adjust for the combined effect of the sample design and the estimating procedure on the value of the characteristic. For example, to produce approximate standard errors for total or White estimates of residence for nonmovers, multiply the appropriate figures in tables A-1 or A-2 by the factor 1.4 from table A-5. The

Table A-1. Standard Errors of Estimated Numbers of Total, White or Spanish Origin Nonmovers

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error	Size of estimate	Standard error
25.....	7	2,500.....	71
50.....	10	5,000.....	100
100.....	14	10,000.....	138
250.....	23	25,000.....	204
500.....	32	50,000 ¹	251
1,000.....	45		

¹For estimates larger than 50,000,000 multiply the estimate by 0.005 to get the standard error.

Note: For a particular characteristic see table A-5 for the appropriate factor to apply to the above standard errors.

determination of the proper factor for a percentage depends upon the subject matter of the numerator of the percentage, not the denominator.

For standard errors of average annual rates over a 4-year period, multiply the standard errors by 0.75. To estimate the standard errors for 1-year periods between 1956 and 1966, multiply the standard errors in this report by 1.2; for individual years prior to 1956, multiply by 1.5.

Illustration of the use of tables of standard errors.

Table 1 of this report shows that 2,081,000 persons moved from outside SMSA's into SMSA's between March 1975 and March 1976. Interpolation in table A-6 shows the standard error (σ_x) on an estimate of this size to be approximately 144,000. The chances are 68 out of 100 that the estimate would differ from a complete census figure by less than 144,000. The chances are 95 out of 100 that the estimate would differ from a complete census figure by less than 288,000 (twice the standard error).

Table 1 also shows that of these 2,081,000 persons, 828,000, or 39.8 percent moved from outside SMSA's to central cities. Table A-7 shows the standard error of 39.8 percent on a base of 2,081,000 to be approximately 3.7 percent. Consequently, chances are 68 out of 100 that the estimated 39.8 percent would be within 3.7 percentage points of a complete census figure, and chances are 95 out of 100 that the estimate would be within 7.4 percentage points of a census figure, i.e., the 95-percent confidence interval would be from 32.4 to 47.2 percent.

Table A-2. Standard Errors of Estimated Percentages of Total, White or Spanish Origin Nonmovers

(68 chances out of 100)

Base of estimated percentage (thousands)	Estimated percentage						
	2 or 98	5 or 95	10 or 90	20 or 80	25 or 75	35 or 65	50
25.....	4.0	6.3	8.6	11.5	12.4	13.7	14.4
50.....	2.8	4.4	6.1	8.1	8.8	9.7	10.2
100.....	2.0	3.1	4.3	5.7	6.2	6.9	7.2
250.....	1.3	2.0	2.7	3.6	3.9	4.3	4.5
500.....	0.9	1.4	1.9	2.6	2.8	3.1	3.2
1,000.....	0.6	1.0	1.4	1.8	2.0	2.2	2.3
2,500.....	0.4	0.6	0.9	1.1	1.2	1.4	1.4
5,000.....	0.3	0.4	0.6	0.8	0.9	1.0	1.0
10,000.....	0.2	0.3	0.4	0.6	0.6	0.7	0.7
25,000.....	0.13	0.2	0.3	0.4	0.4	0.4	0.5
50,000.....	0.09	0.14	0.2	0.3	0.3	0.3	0.3
100,000.....	0.06	0.10	0.14	0.2	0.2	0.2	0.2
200,000.....	0.04	0.07	0.10	0.13	0.14	0.15	0.2

Note: For a particular characteristic see table A-5 for the appropriate factor to apply to the above standard errors.

Table A-3. Standard Errors of Estimated Numbers of Black or Other Races Nonmovers

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error	Size of estimate	Standard error
20.....	7	500.....	37
30.....	9	1,000.....	51
40.....	11	2,500.....	76
50.....	12	5,000.....	96
100.....	17	10,000 ¹	97
250.....	26		

¹For estimates larger than 10,000,000 multiply the estimate by 0.010 to get the standard error.

Note: For a particular characteristic see table A-5 for the appropriate factor to apply to the above standard errors.

Standard error of a difference. For a difference between two sample estimates, the standard error is approximately equal to the square root of the sum of the squared standard errors of the estimates; the estimates can be of numbers, percents, ratios, medians, etc. This figure 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 between estimated numbers. Table 1 of the report shows that between March 1975 and March 1976, 2,477,000 persons moved from inside SMSA's to outside SMSA's. Thus the apparent difference between the number of persons moving into and out of SMSA's is 396,000. The standard error (σ_x) of 2,081,000 is 144,000, as shown above. Table A-6 shows the standard error (σ_y) on an estimate of 2,477,000 to be approximately 159,000. To obtain the standard error of an estimated difference, use the following formula:

$$\sigma_{(x-y)} = \sqrt{\sigma_x^2 + \sigma_y^2}$$

Therefore, the standard error of the estimated difference of 396,000 is about:

$$215,000 = \sqrt{(144,000)^2 + (159,000)^2}$$

This means the chances are 68 out of 100 that the estimated difference based on the sample estimates would vary from the difference derived using complete census figures by less than 215,000. The 68-percent confidence interval around the 396,000 difference is from 181,000 to 611,000, i.e., $396,000 \pm 215,000$. A conclusion that the average estimate of the difference derived from all possible samples of the same size and design lies within a range computed in this way would be correct for roughly 68 percent of all possible samples. The 95-percent confidence interval from -34,000 to 826,000 ($396,000 \pm 2 \times 215,000$), does not exclude negative values and hence, we cannot conclude with 95-percent confidence that the number of persons moving from SMSA's to outside SMSA's between March

Table A-4. Standard Errors of Estimated Percentages of Black or Other Races Nonmovers

(68 chances out of 100)

Base of estimated percentage (thousands)	Estimated percentage						
	2 or 98	5 or 95	10 or 90	20 or 80	25 or 75	35 or 65	50
20.....	5.2	8.1	11.2	14.9	16.2	17.8	18.7
30.....	4.3	6.6	9.2	12.2	13.2	14.6	15.3
40.....	3.7	5.8	7.9	10.6	11.4	12.6	13.2
50.....	3.3	5.1	7.1	9.5	10.2	11.3	11.8
100.....	2.3	3.6	5.0	6.7	7.2	8.0	8.4
250.....	1.5	2.3	3.2	4.2	4.6	5.0	5.3
500.....	1.0	1.6	2.2	3.0	3.2	3.6	3.7
1,000.....	0.7	1.2	1.6	2.1	2.3	2.5	2.6
2,500.....	0.5	0.7	1.0	1.3	1.4	1.6	1.7
5,000.....	0.3	0.5	0.7	0.9	1.0	1.1	1.2
10,000.....	0.2	0.4	0.5	0.7	0.7	0.8	0.8
20,000.....	0.2	0.3	0.4	0.5	0.5	0.6	0.6

Note: For a particular characteristic see table A-5 for the appropriate factor to apply to the above standard errors.

1975 and March 1976 is actually greater than those persons moving from outside SMSA's into SMSA's during that same time period.

Standard error of a median. 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. Using the appropriate percentage table (and factor table A-5 if the median is for nonmovers), calculate the standard error on a 50-percent characteristic, using the appropriate base.
2. Add to and subtract from 50 percent the standard error determined in step 1.

Table A-5. Factors to Be Applied to Tables A-1 Through A-4 to Estimate Standard Errors of Specific Characteristics

Characteristic	Factor	
	Persons	Families, households, primary or unrelated individuals
Residence--regional or metropolitan/nonmetropolitan:		
Total or White.....	1.4	(X)
Black or other races.....	1.6	(X)
Spanish origin.....	2.1	(X)
Years of school completed:		
Total or White.....	1.0	(X)
Black or other races.....	1.0	(X)
Spanish origin.....	1.1	(X)
Employment or occupation:		
Total or White:		
Both sexes.....	0.8	(X)
Male only, female only.....	0.7	(X)
Black or other races.....	0.7	(X)
Spanish origin.....	0.8	(X)
Unemployment:		
All but Spanish.....	0.9	(X)
Spanish origin.....	0.8	(X)
Marital status or household and family characteristics:		
Total or White.....	(X)	0.8
Some members.....	1.3	(X)
All members.....	1.4	(X)
Black or other races.....	(X)	0.7
Some members.....	1.3	(X)
All members.....	1.6	(X)
Spanish origin.....	(X)	0.8
Some members.....	1.5	(X)
All members.....	2.1	(X)
Income:		
Total or White.....	0.9	0.7
Black or other races.....	0.7	0.6
Spanish origin.....	0.8	(X)
Poverty:		
Total or White.....	1.7	0.7
Black or other races.....	1.4	0.6
Spanish origin.....	1.5	(X)

X Not applicable.

- Using the distribution of the characteristic, calculate 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 a confidence interval for a median. Table 6 of this report shows that the median age of persons moving to a different State between March 1975 and March 1976 was 23.9 years. The size, or base, of the distribution from which the median was determined is 6,140,000 persons.

- Table A-7 shows that the standard error of 50 percent on a base of 6,140,000 is about 2.1 percent.
- To obtain a two-standard-error confidence interval on the estimated median, add to and subtract from 50 percent twice the standard error found in step 1. This yields percentage limits 45.8 and 54.2.
- From table 6, it can be seen that 34.0 percent of the reported movers were younger than 20 years old and 20.6 percent of the movers were in the 20 to 24 year-old age group. By linear interpolation, the lower limit of the estimate is found to be about:

$$19.9 + (24.9-19.9) \left(\frac{45.8 - 34.0}{20.6} \right) = 22.8$$

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

$$19.9 + (24.9-19.9) \left(\frac{54.2 - 34.0}{20.6} \right) = 24.8$$

Thus, the 95-percent confidence interval ranges from 22.8 to 24.8 years of age.

Standard error of a ratio. All mean values for own children shown in the tables of this report were calculated as the ratio of two numbers. For example, the mean number of own children under 18 is calculated by:

$$\frac{x}{y} = \frac{\text{total number of own children under 18}}{\text{total number of family heads with own children}}$$

Standard errors on these averages may be approximated using the following formula:

$$\sigma \left(\frac{x}{y} \right) = \left(\frac{x}{y} \right) \left(\frac{\sigma_x}{x} \right) = \frac{\sigma_x}{y}$$

Table A-6. Standard Errors of Estimated Numbers of Movers

(68 chances out of 100. Numbers in thousands)

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

Note: To obtain standard errors for Spanish origin movers, multiply the above standard errors by 0.9.

Table A-7. Standard Errors of Estimated Percentages of Movers

(68 chances out of 100)

Base of estimated percentage (thousands)	Estimated percentage							
	2 or 98	5 or 95	10 or 90	20 or 80	25 or 75	35 or 65	40 or 60	50
100.....	4.5	7.0	9.7	12.9	14.0	15.4	15.8	16.1
250.....	2.9	4.4	6.1	8.2	8.8	9.7	10.0	10.2
500.....	2.0	3.1	4.3	5.8	6.3	6.9	7.1	7.2
1,000.....	1.4	2.2	3.1	4.1	4.4	4.9	5.0	5.1
2,500.....	0.9	1.4	1.9	2.6	2.8	3.1	3.2	3.2
5,000.....	0.6	1.0	1.4	1.8	2.0	2.2	2.2	2.3
10,000.....	0.5	0.7	1.0	1.3	1.4	1.5	1.6	1.6
25,000.....	0.3	0.4	0.6	0.8	0.9	1.0	1.0	1.0
50,000.....	0.2	0.3	0.4	0.6	0.6	0.7	0.7	0.7
100,000.....	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5
200,000.....	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4

Note: To obtain standard errors for Spanish origin movers, multiply the above standard errors by 0.9.