Appendix

DEFINITIONS AND EXPLANATIONS

Population coverage. The figures shown are for the civilian population excluding the relatively small number of inmates of institutions.

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, and Vermont.

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

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

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

College enrollment. The college enrollment statistics are based on replies to the enumerator's inquiry as to whether the person was enrolled in college. Enumerators were instructed to count as enrolled anyone who had been enrolled at any time during the current term or school year in any type of regular college or university. Attendance may be on either a full-time or part-time basis and during the day or night. Thus, regular college is a school that may advance a person toward a college or university degree.

Major field of study. Field of study of college students was determined by responses to the following question:

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39. What is ...'s major field of study?

Agriculture or forestry ...  ○        Health or medical prof. .....  ○
Biological sciences .....  ○          Law .................  ○
Business or commerce ...  ○           Mathematics or statistics ..  ○
Education .............  ○            Physical or earth sciences .  ○
Engineering ...........  ○            Social sciences (history,
English or journalism ...  ○             psychology, economics, etc.)  ○
Other humanities                      Vocational-technical studies
   (fine arts, religion, etc.)  ○        Computer Science .........  ○
                                      Other (Specify below) ......  ○
                                      Don't know ..............  ○
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Two-year and four-year college. Students enrolled in the first three years of college were asked to report whether the college in which they were enrolled was either a 2-year college (junior or community college) or a four year college or university.

Public or private school. In this report, a public school is defined as any educational institution operated by publicly elected or appointed school officials and supported by public funds. Private schools include educational institutions established and operated by religious bodies, as well as those which are under other private control. In cases where enrollment was in a school or college which was both publicly and privately controlled or supported, enrollment was counted according to whether it was primarily public or private.

Full-time and part-time attendance. College students were classified, in this report, according to whether they were attending school on a full-time or part-time basis. A student was regarded as attending college full time if he was taking 12 or more hours of classes during the average school week, and part time if he was taking less than 12 hours of classes during the average school week.

Age. The age classification is based on the age of the person as of October 1, 1974.

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.

Spanish origin. Information on origin or descent was obtained by asking "What is (this person's) origin or descent?" Responses generally refer to a person's perceived national or ethnic lineage and do not necessarily indicate the country of birth of himself or his parents. The category Spanish origin includes persons of Mexican, Puerto Rican, Central or South American, and other Spanish origin.

Marital status. The marital status category shown in this report, "married, spouse present," includes persons who are currently married and living with their spouse.

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.

Head of family. One person in each family residing together was designated as the head. The head of a family is usually the person regarded as the head by members of the family. Women are not classified as heads if their husbands are resident members of the family at the time of the survey.

Dependent family members. For the purpose of this report, a dependent family member is a relative of the household head, excluding the head's wife or any other relative who is married with a spouse present. Such persons are generally sons and daughters of the household head. However, members who are living away from home while attending college are also counted as dependent family members, if they are not married with a spouse present.

Years of school completed. Data on years of school completed in this report were derived from the combination of answers to two questions: (a) "What is the highest grade of school he has ever attended?" and (b) "Did he finish this grade?"

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.

Family income. Income as defined in this report represents the combined total money income of the family before deductions for personal taxes, Social Security, bonds, etc. It is the algebraic sum of money wages and salaries, net income from self-employment, and income other than earnings received by all family members during the 12 months prior to the surveys. It should be noted that although the family income statistics refer to receipts during the previous 12 months, the characteristics of the person, such as age, marital status, etc., and the composition of families refer to the date of the survey.

The income tables include in the lowest income group (under $5,000) those who were classified as having no income in the previous 12 months and those reporting a loss in net income from farm and nonfarm self-employment or in rental income.

The income tables in this report include a separate category for families for whom no income information was obtained. In most of the other Current Population Survey Reports showing income data, the missing income data have been allocated.

The money income level of families shown in this report may be somewhat understated. Income data from the October control card are based on the respondent's estimate of total family money income for the preceding 12 months coded in broad, fixed income intervals. Income data collected in the March supplement to the Current Population Survey are based on responses to 8 direct questions asked of all persons 14 years old and over identifying 14 different sources of income and cover the preceding calendar year.

Previous research has shown that the use of broad income intervals to record money income tends to reduce the rate of nonreporting while increasing the likelihood that the amounts reported will be significantly understated as compared with results from more detailed questions.

Rounding of estimates. Individual figures are rounded to the nearest thousand without being adjusted to group totals, which are independently rounded. With few exceptions, percentages are based on the rounded absolute numbers.

SOURCE AND RELIABILITY OF THE ESTIMATES

Source of data. The estimates in this report are based on data obtained in October of each of the years 1974, 1972, and 1966. The following table provides a description of some aspects of the Current Population Survey design.

Description of the Current Population Survey

Time of data collection	Number of sample areas	Number of counties	Households occupied		Households visited, not interviewed
			Interviewed	Not interviewed	
October 1974 and October 1972............	461	923	45,000	2,000	8,000
October 1966.............	357	701	33,500	1,500	6,000

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 reporting as well as being subject to sampling variability.

The reliability of an estimate is described in terms of standard errors which 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 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 the 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. Most are significant at a level of more than 2.0 standard errors. Thus, 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.

The figures presented in tables A-1 through A-4 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 items. Table A-1 contains standard errors of estimated numbers of persons in the total population or, separately, the white population. Table A-3 contains standard errors of estimated numbers of persons who are Negro or of other races.

Table A-1. Standard Errors for Estimated Numbers of Persons, Total or White Population

(68 chances out of 100. Numbers in thousands)

Size of estimate	Standard error	Size of estimate	Standard error
50.........	10.2	4,000.....	89.5
100.......	14.4	5,000.....	99.6
250.......	22.7	6,000.....	108.7
500.......	32.1	7,000.....	116.9
1,000......	45.3	8,000.....	124.5
2,000......	63.8	9,000.....	131.5
3,000......	77.8		

Note: The standard errors for both total population and white population are equal, consequently, only one table has been presented.

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

The reliability of an estimated percentage, computed by using sample data for both the numerator and the denominator, depends upon both the size of the percentage and the size of the total upon which the percentage is based. Tables A-2 and A-4 show the standard errors of estimated percentages.

Table A-5 provides factors which should be multiplied with the standard errors of tables A-1 through A-4 to obtain standard errors for the different population characteristics of this report.

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. The smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs.

Illustration of the use of tables of standard errors. Table A shows that there were approximately 327,000 college students 14 to 34 years old who were in the Biological Sciences in October 1974. Table A-5 shows that the factor for this educational characteristic is 1.0.

Table A-2. Standard Errors for Estimated Percentages of Persons, Total or White Population

(68 chances out of 100)

Base of percentage (thousands)	Estimated percentage							
	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	35 or 65	50
75...........	1.7	2.3	3.6	5.0	5.9	7.2	7.9	8.3
100..........	1.4	2.0	3.1	4.3	5.1	6.2	6.9	7.2
250..........	0.9	1.3	2.0	2.7	3.2	3.9	4.3	4.5
500..........	0.6	0.9	1.4	1.9	2.3	2.8	3.1	3.2
1,000........	0.5	0.6	1.0	1.4	1.6	2.0	2.2	2.3
2,000........	0.3	0.4	0.7	1.0	1.1	1.4	1.5	1.6
3,000........	0.3	0.4	0.6	0.8	0.9	1.1	1.3	1.3
4,000........	0.2	0.3	0.5	0.7	0.8	1.0	1.1	1.1
5,000........	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.0
7,500........	0.2	0.2	0.4	0.5	0.6	0.7	0.8	0.8
9,000........	0.15	0.2	0.3	0.5	0.5	0.7	0.7	0.8

Note: The standard errors for both total population and white population are equal, consequently, only one table has been presented.

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

Multiplying this factor, 1.0, with the value obtained by interpolating in table A-1 shows the standard error on 327,000 to be approximately 26,000. The chances are 68 out of 100 that the estimate would differ from a complete census figure by less than 26,000. The chances are 95 out of 100 that the estimate would differ from a complete census figure by less than 52,000, i.e., this 95 percent confidence interval would be from 275,000 to 379,000.

Table B shows that 20.7 percent of the 1,029,000 college students 35 years old and over were in Education in October 1974. Table A-5 again shows the appropriate factor for an educational characteristic to be 1.0. Multiplying the factor 1.0 with the value obtained by interpolating in table A-2 shows the standard error of the estimated 20.7 percent to be approximately 1.8 percent. Consequently, chances are 68 out of 100 that the estimated 20.7 percent would be within 1.8 percentage points of a complete census figure, and chances are 95 out of 100 that the estimate would be within 3.6 percentage points of a census figure. That is, this 95 percent confidence interval would be between 17.1 and 24.3 percent.

Table A-3. Standard Errors for Estimated Numbers of Persons, Negro and Other Races

(68 chances out of 100. Numbers in thousands)

Estimate	Standard error
10....................	5.3
20....................	7.5
30....................	9.1
40....................	10.6
50....................	11.8
75....................	14.4
100...................	16.7
200...................	23.5
300...................	28.6
400...................	33.0
500...................	36.7
750...................	44.6
1,000................	51.0

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

Table A-4. Standard Errors for Estimated Percentages of Persons, Negro and Other Races

(68 chances out of 100)

Base of percentage (thousands)	Estimated percentage							
	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	35 or 65	50
75	1.9	2.7	4.2	5.8	6.9	8.4	9.2	9.6
100	1.7	2.3	3.6	5.0	6.0	7.2	8.0	8.4
125	1.5	2.1	3.3	4.5	5.3	6.5	7.1	7.5
150	1.4	1.9	3.0	4.1	4.9	5.9	6.5	6.8
175	1.3	1.8	2.8	3.8	4.5	5.5	6.0	6.3
200	1.2	1.7	2.6	3.5	4.2	5.1	5.6	5.9
250	1.1	1.5	2.3	3.2	3.8	4.6	5.0	5.3
300	1.0	1.4	2.1	2.9	3.4	4.2	4.6	4.8
400	0.8	1.2	1.8	2.5	3.0	3.6	4.0	4.2
500	0.7	1.0	1.6	2.2	2.7	3.2	3.6	3.7
750	0.6	0.9	1.3	1.8	2.2	2.6	2.9	3.1
1,000	0.5	0.7	1.2	1.6	1.9	2.3	2.5	2.6

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 square of the standard error 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 B shows that 12.4 percent of the 5,098,000 college students between the ages of 14 and 21 were in Education in October 1974. The apparent difference between the proportion of students who were in Education and were 35 years old and over with the proportion who were between the ages of 14 and 21 is 20.7 - 12.4 = 8.3 percent.

Table A-5 shows the appropriate factor for this education characteristic to be 1.0. Multiplying the factor 1.0 with the value obtained by interpolating in table A-2 shows the standard error of 12.4 percent to be approximately 0.6 percent. The standard error on the estimated 20.7 percent is 1.8 percent as shown above. The standard error of the estimated difference of 8.3 percent is about $1.9 = \sqrt{(0.6)^2 + (1.8)^2}$. This means the chances are 68 out of 100 that the estimated difference based on the sample would differ from the change derived using complete census figures by less than 1.9 percent.

The 68 percent confidence interval around the change is from 6.4 to 10.2 percent, i.e., 8.3 ± 1.9.

The 95 percent confidence interval is 4.5 percent to 12.1 percent, i.e., 8.3 ± 2 (1.9). Since this 95 percent confidence interval does not contain the number 0, we can conclude with 95 percent confidence that the proportion of students 35 years old and over in Education is higher than the proportion of students 14 to 21 years old in Education.

Standard error of a ratio. Table A of this report shows data for the percent change between years. The standard error of a percent change can be obtained as the standard error of a ratio $\frac{x}{y}$. Here, x might represent the number of students in some category in the more recent of the two years being looked at, and y might represent the number of persons in the same category in the earlier of the two years. The formula for the standard error of $\frac{x}{y}$ is:

$$\sigma_{\frac{x}{y}} = \sqrt{\left(\frac{x}{y}\right)^2 \left[\left(\frac{\sigma_y}{y}\right)^2 + \left(\frac{\sigma_x}{x}\right)^2 - 2\rho \left(\frac{\sigma_x}{x}\right)\left(\frac{\sigma_y}{y}\right)\right]}$$

In this formula, x and y are as defined above and σ_x and σ_y represent the standard errors of the numbers x and y which can be obtained by use of tables A-1 to A-5. The value ρ can be assumed to be equal to zero for the entries in table A.

Table A-5. Factors to Be Applied to Tables A-1 Through A-4 to Estimate Standard Errors
for the Various Characteristics in This Report

Type of characteristic[1]	Factor[2][3]	Type of characteristic[1]	Factor[2][3]
EDUCATION (INCLUDES FIELD OF STUDY)		GEOGRAPHIC RESIDENCE	
Total or white.............	1.0	Total or white...........	1.4
Negro and other races......	1.0	Negro and other races.....	1.6
Family income..............	0.7	TYPE OF OCCUPATION	
Education of Spanish.......	1.4		
		Total or white...........	
MARITAL STATUS		Both sexes only.........	0.7
		Male only or female	
Total or white.............	1.3	only..................	0.6
Negro and other races......	1.3	Negro and other races.....	0.6

[1]For cross tabulations defined by different characteristics with one of the characteristics being education, use the education factor of this table. An example of a cross tabulation defined by different characteristics is the number of married law students defined by the characteristics marital status and education.

[2]For the October 1966 data, also multiply by the factor 1.2 in addition to the relevent factors from this table.

[3]Education, Marital Status, Geographic Residence and Type of Occupation have separate factors for Total or White Population characteristics and Negro and Other Races characteristics. The Total or White factors should be multiplied only by standard errors from tables A-1 and A-2, while the Negro and Other Races factors should only be multiplied by standard errors from tables A-3 and A-4.