Population Characteristics

EDUCATIONAL ATTAINMENT IN THE UNITED STATES: MARCH 1973 AND 1974

Figure 1. Years of School Completed by Persons 25 Years Old and Over in the United States: 1940 to 1974

Millions

YEARS OF SCHOOL COMPLETED

16+

13-15

120

100

80

60

40

20

0

1940   1950   1957   1962   1970   1974
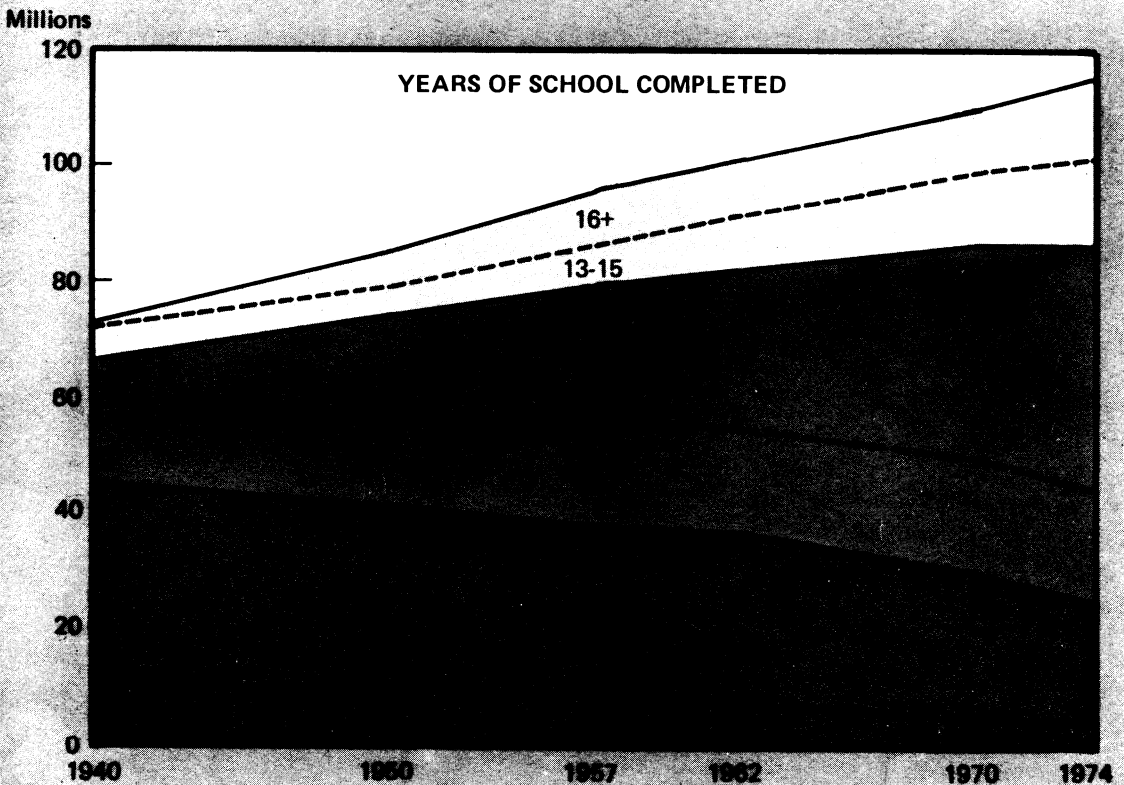
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CURRENT POPULATION REPORTS

Population Characteristics

EDUCATIONAL ATTAINMENT IN THE UNITED STATES: MARCH 1973 AND 1974

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EDUCATIONAL ATTAINMENT IN THE UNITED STATES: MARCH 1973 AND 1974

INTRODUCTION

This report contains data on years of schooling completed for persons who were 14 years old and over in March 1974. Statistical tables show data on years of schooling completed by sex, age and race; for persons of Spanish origin; and persons of metropolitan and nonmetropolitan residence. These tables follow the text of this report. Survey results for 1974 are presented in historical perspective, and the trends are analyzed in the remainder of this text.

Trends in Educational Attainment

Most indicators of educational achievement point to a steady rise over the last thirty-five years in the number of years people spend in school. Most of the males·and females, both blacks and whites, are staying in school longer than their parents did. Changes over time in the educational levels of individuals 25 to 34 years old largely represent changes in the preparation of persons for entrance into the labor market. The proportion of all Americans of this age range who have four years of high school or more has risen from 37 percent in 1940 to 63 percent in 1974 (see table A). In 1940 more women

than men 25 to 34 years old were high school graduates. By 1974 the situation has changed so that about the same percentage of males and females of these ages had a high school diploma, including those who had gone on to college.

The distribution of males and females by educational level differs greatly, however. Women are still more likely than men to complete high school but not enter college (figure 2). In 1974, 47 percent of all white females 25 to 34 years old had finished high school but had completed no college, and 33 percent had completed some college. The comparable figures for white males are 38 percent with a complete high school education but no college and 44 percent with at least some college.

There is a sizeable difference, however, between blacks and whites in the percent of those 25 to 34 years old who have finished high school. In 1974, 82 percent of white males and 67 percent of black males of these ages had a high school diploma, a difference of 15 percentage points. Yet, the gap between blacks and whites in rates of high school graduation has decreased substantially, especially in the last 4 or 5 years. In 1940, a differential of 27 percentage points separated the

Table A. Percent of Persons 25 to 34 Years Old Who Have Completed Four Years of High School or More, by Race and Sex: 1940 to 1974

Year	White		Black		Black-white differential	
	Males	Females	Males	Females	Males	Females
1974....................	82.3	81.0	67.0	63.9	15.3	17.1
1973....................	80.2	79.7	62.3	60.5	17.9	19.2
1972....................	79.7	78.3	59.1	61.6	20.6	16.7
1971....................	78.4	76.5	52.6	58.8	23.1	17.7
1970....................	77.0	75.3	49.4	57.0	27.6	18.3
1969....................	75.2	74.7	53.9	52.8	21.3	21.9
1968....................	73.4	73.6	52.0	50.0	21.4	23.6
1967....................	72.9	72.3	49.9	54.5	23.0	17.8
1966....................	72.5	71.6	44.3	46.4	28.2	25.2
1965....................	71.0	70.5	45.2	45.8	25.8	24.7
1960....................	59.3	62.8	30.1	35.8	29.2	27.0
1950....................	51.5	55.4	18.4	22.2	33.1	32.8
1940....................	36.1	40.9	8.9	12.3	27.2	28.6

proportions of white and black men 25 to 34 years old who were high school graduates. This differential decreased by about 6 percentage points between 1940 and 1968 and decreased another 6 percentage points from that point to 1974 (figure 3). The latter decrease is significant at the .90 level of probability. A similar trend toward equality between the races in rates of high school graduation occurred for females.

The annual increase in the proportion of those 25 to 34 years old who have a high school diploma has been fairly constant at an average of less than 2 percentage points a year for white males since the middle 1960's. The corresponding rate of increase for black males averaged 2 percentage points a year in the late 1960's and 4 percentage points a year in the early 1970's. If the proportion

of those ages 25 to 34 who have completed high school were to continue to increase at a higher rate for blacks than for whites, it would not be many years before the gap between the races in attainment of high school graduation would disappear.

Quartiles of the distribution of years of school completed, presented in table B, briefly summarize the entire distribution of educational attainment in the United States. The three quartiles divide the population into four equal amounts of educational attainment. The first quartile is the point below which the lowest 25 percent fall. The second quartile is the median, or the point at which half the people have more and half have less education. The third quartile marks the point at which three-fourths of the population has less education and one-fourth has more.

Figure 2. Years of School Completed for White Men and Women 25 to 34 Years Old: 1974
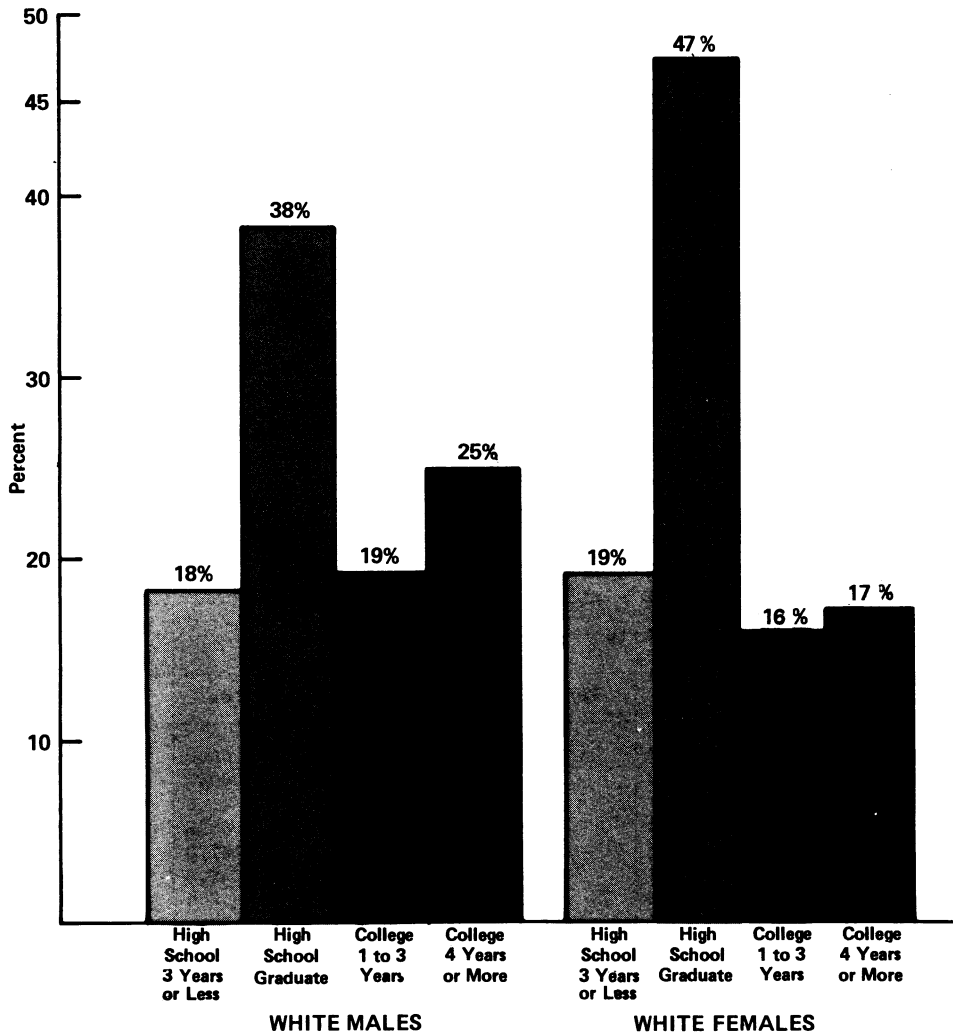
Table B shows the quartiles of the distribution of years of schooling completed by men and women 25 to 34 years old for selected years since 1940. Among males in 1940 there was about a 5-year gap between the first and third quartile, with half of the black males having between four and nine years of school and half of the white males having between eight and thirteen years of school. By 1974 one-fourth of all white males 25 to 34 years old were completing at least a four-year college education. The educational level for the highest 25 percent of black men was one year of college.

The difference between men and women in the distribution of years of school completed changed drastically from 1940 to 1974. In 1940 the top quarter of all white males and females 25 to 34 years old finished about 12.5 years of schooling. By 1974, males in the top quartile had completed four years or more of college while their female counterparts had finished only two years of college. Furthermore, there was a greater difference in educational levels of the top one-half and top one-fourth for white men than for white women which in this case illustrates the greater tendency for white men to attend college once they graduated from high school. This difference is not apparent from examination of a summary index such as median years of school completed.

There was little difference in 1974 between males and females in median years of schooling completed.

Occupations and Educational Attainment

A high school diploma was a greater advantage to persons seeking work in 1940 when only one in three white men and only one in twelve black men 25 to 34 years old had finished high school than it was in 1974 when four out of five white men and two out of three black men held a high school diploma at those ages. In 1940, the high school graduate typically had more jobs in white collar occupations open to him or her than would a person with no training past high school entering the job market in 1974. A recent analysis of occupational changes, performed by the National Planning Association (1973) using the 1960 and 1970 Censuses of Population, has shown that workers with high school diplomas or some college education traditionally found employment in white collar occupations but more are now entering blue collar and service occupations.[1] The educational

[1]Harold Wool, The Labor Supply for Lower Level Occupations, National Planning Association, 1973, pg. 146.

Figure 3. Percent of Persons 25 to 34 Years Old Who Have Completed High School, by Race and Sex: 1940–1974

Table B. Quartiles of the Distribution of Educational Attainment by Race and Sex, for Persons 25 to 34 Years Old: 1940 to 1974

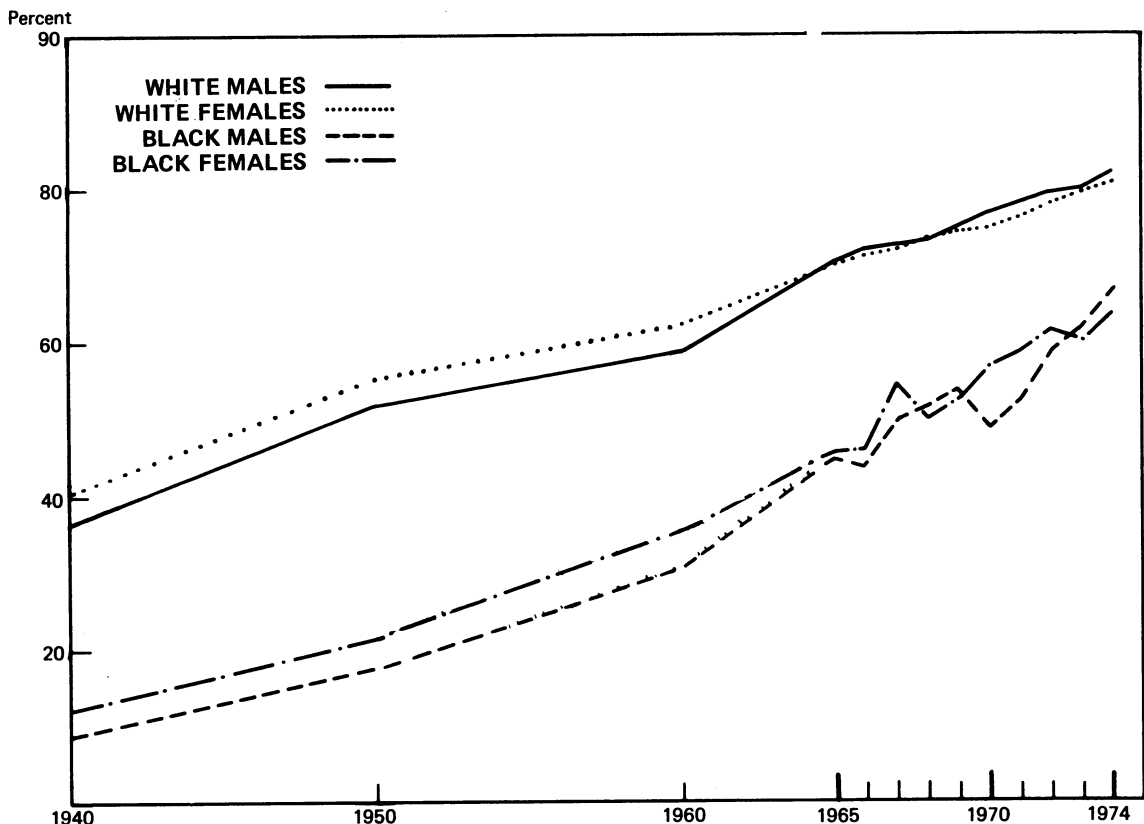| Sex and year	White			Black		
	1st quartile	2nd quartile (median)	3rd quartile	1st quartile	2nd quartile (median)	3rd quartile
MALE						
1974......................	12.2	12.8	16.0	11.1	12.4	13.0
1973......................	12.1	12.8	15.3	10.5	12.3	12.9
1970......................	12.0	12.7	14.9	9.6	11.9	12.7
1965......................	11.2	12.5	14.3	8.7	11.5	12.7
1960......................	9.8	12.3	13.7	7.3	9.8	12.3
1950......................	8.9	12.0	12.9	5.3	8.0	11.0
1940......................	8.3	10.1	12.5	3.6	6.3	8.6
FEMALE						
1974......................	12.1	12.7	14.3	10.8	12.3	12.9
1973......................	12.1	12.6	13.9	10.5	12.3	12.9
1970......................	12.0	12.5	13.1	10.4	12.2	12.8
1965......................	11.3	12.4	12.9	9.3	11.6	12.7
1960......................	10.4	12.3	12.9	8.3	10.6	12.4
1950......................	9.3	12.1	12.8	6.1	8.6	11.6
1940......................	8.5	10.6	12.6	5.1	7.3	9.5

attainment of workers rose greatly from 1960 to 1970. The rate of growth in white collar occupations did not keep pace. A college education has become more common since 1940 and also more necessary for competition for many professional and managerial jobs in the 1970's.

Schooling acts as an important criterion for admission into most occupations. This can be seen from table D which gives the distribution of individuals with different amounts of schooling into major occupational categories. Those occupations with the highest schooling requirements also tend to be those with the highest incomes. It can be seen from this table that men with less than four years of high school tend to be operatives or craftsmen, while their female counterparts tend to be operatives and service workers. As educational level increases so does the proportion in white collar occupations like sales or clerical workers, managers and administrators, or professional, technical, and kindred workers. Almost three out of four women and one out of two men with college degrees are in professional jobs and one out of four men with some college training is in a managerial occupation. In all educational categories females tend to be concentrated in one or two major occupational categories, whereas males tend to be more evenly distributed across a wider range of occupational categories (see table D).

Trends in College Attendance

The proportion of all high school graduates who complete at least a year of college is a measure of how many of those who are eligible to attend college actually do so. Young adults (20 to 21 years old) who are high school graduates can be used as the base for calculating the percent of recent graduates who complete some college, since they will have been out of high school long enough to complete one or more years of college. This figure underestimates college attendance to some extent since it does not include those who initiate their college enrollment when they are over 21 years old or those who drop out before the end of the first year. In 1940, 30 percent of all white male high school graduates aged 20 and 21 had completed some years of college. The comparable proportion rose fairly steadily to 61 percent in 1968 for young (20 and 21 years old) white males (table C). Between 1970 and 1974, this figure dropped 10 percentage points to 51 percent. The pattern of college attendance was similar for black men (20 to 21 years old) with a peak in the late

1960's and a decline of 5 percentage points to 1974, although this decline was not statistically significant. The percent of high school graduates who have completed some college had reached 42 percent for this group in 1969 and dropped to 37 percent in 1974. No such decline occurred for young females of either race.

These changes in the percent of males 20 and 21 years old who completed at least one year of college appear to have resulted in part from changes in the size of the Armed Forces and the effect those changes have on CPS figures. Persons in the Armed Forces were excluded from the CPS unless they were living off post or were married and living on post with their families. This coverage of members of the Armed Forces in the Current Population Survey appears to have raised the average educational attainment in the CPS above that for the population as a whole, at least in 1970. See the Methodological Note at the end of the text for further discussion of this point.

It appears that about half of the decrease between the late 1960's and 1974 in the proportion of young, male high school graduates who completed some college was due to a decrease in the proportion of this age group who were in the Armed Forces. Nevertheless, these figures indicate that there has been a drop of about 5 to 8 percentage points from the late 1960's to 1974 in the proportion of young adult male high school graduates who completed some college.

There is a large difference in the proportion of blacks and whites 20 and 21 years old who completed high school and then completed some college. In 1974, 51 percent of white male high school graduates 20 and 21 years old had completed some college, versus 37 percent for blacks,

a differential of 14 percentage points. The corresponding differential between races is not as wide for females as for males, however; this difference, approximately 3 percentage points is in the same direction but is not statistically significant.

The decline in the percent of high school graduates who completed some college that was noted for males did not occur among females of either race. There has been a steady increase in the proportion of female high school graduates completing some college among high school graduates since 1940. In that year 24 percent of all white females 20 and 21 years old who finished high school completed at least one year of college. This figure increased to 46 percent in 1974. The figures for black females follow the same pattern. In 1940, 27 percent of all black female high school graduates 20 and 21 years old went on to complete some college, about the same rate as white females; in that year 17 percent of black women and 52 percent of white women of those ages had graduated from high school. The proportion of black female high school graduates who had completed some college reached 32 percent in 1970 and 43 percent in 1974.

Educational Attainment and Age

The median number of years of school completed by Americans has been rising since at least 1940. The rise has occurred because young people are staying in school somewhat longer than their parents and much longer than their grandparents did (see table 7).

Table C. Percent of High School Graduates 20 and 21 Years Old Who Completed One Year of College or More, by Race and Sex: 1940 to 1974

Year	All Races		White		Black	
	Male	Female	Male	Female	Male	Female
1974......................	49.5	45.7	50.6	46.1	36.9	42.8
1972......................	52.7	42.4	53.9	42.8	40.9	38.2
1971......................	56.2	46.4	57.6	47.1	41.0	37.5
1970......................	58.7	44.3	60.6	45.3	40.2	32.4
1969......................	57.6	41.5	58.7	42.0	42.3	33.7
1968......................	58.8	43.8	60.5	44.5	40.1	34.6
1960......................	41.8	33.6	42.9	34.1	[1]28.1	[1]28.9
1950......................	37.1	29.8	37.4	29.8	28.0	29.9
1940......................	30.3	24.4	30.3	24.3	26.9	26.6

[1]Figures for 1960 are for Negro and other races.

Table D. Level of School Completed by Employed Persons 25 to 64 Years Old,
by Major Occupation Group and Sex: March 1974

Occupation group and sex	Total	Not high school graduate	High school graduate		
			No years of college	1 to 3 years of college	4 years of college or more
Male, 25 to 64 years................	100.0	100.0	100.0	100.0	100.0
Prof., technical, and kindred workers......	15.7	0.9	6.3	17.1	54.1
Farmers and farm managers..................	2.9	5.7	3.2	1.6	1.0
Managers, and adm., except farm............	16.2	5.5	15.5	24.2	26.3
Clerical and kindred workers...............	6.1	2.9	8.3	10.0	3.1
Sales workers..............................	5.9	1.3	5.9	10.6	8.3
Craft and kindred workers..................	22.6	25.4	29.4	18.7	3.9
Operatives, including transport workers....	17.3	29.7	19.3	8.9	1.1
Service workers............................	6.7	10.6	7.3	6.4	1.6
Farm laborers and supervisors..............	1.2	4.7	0.6	0.4	0.2
Laborers, except farm......................	5.2	13.4	4.2	2.2	0.4
Female, 25 to 64 years..............	100.0	100.0	100.0	100.0	100.0
Prof., technical, and kindred workers......	17.1	1.0	1.6	22.5	71.4
Farmers and farm managers..................	0.3	0.5	0.2	0.3	0.3
Managers, and adm., except farm............	6.0	2.9	5.2	7.7	6.8
Clerical and kindred workers...............	32.6	6.5	19.0	46.8	13.5
Sales workers..............................	6.2	3.7	7.4	5.0	3.0
Craft and kindred workers..................	1.9	2.7	3.0	1.2	0.5
Operatives, including transport workers....	14.1	35.1	27.9	4.4	1.3
Service workers............................	19.9	42.9	33.0	11.0	3.1
Farm laborers and supervisors..............	1.1	3.5	1.1	0.4	0.2
Laborers, except farm......................	0.8	1.4	1.5	0.7	–

- Represents zero.

Young people have completed more years of school, on the average, than have older people. Table 1 shows the distribution of educational attainment by age for March 1974. People 25 to 34 years old in 1974 have a higher rate of college graduation and a lower proportion of high school dropouts than any older age group. The proportion not graduating from high school increases with advancing age. Almost three-fourths of the whites and nine-tenths of the blacks 75 years old and over in 1974 did not finish high school. The comparable figures for those 25 to 34 years old in 1974 are 18 percent for whites and 35 percent for blacks. As older people with low levels of schooling die and are replaced by those with more education, the average educational level of the population has been rising.

METHODOLOGICAL NOTE

Changes mentioned in this report in the percent of males 20 and 21 years old who have completed at least one year of college may have been affected by changes from 1965 to 1974 in the Armed Forces population of this age group. The Current Population Survey excludes members of the Armed Forces who are living outside the United States or who are unmarried and living on post. In 1970, 25 percent of all males 20 and 21 years old were in the Armed Forces, stationed inside and outside the United States. By 1974 this had decreased to less than 10 percent. In 1970, members of the Armed Forces were more likely to be just high school graduates than the total population but were less likely to have completed a year or more of

college than others in their age group. Table E shows the educational distribution of males in the Armed Forces living inside the United States and those in the civilian population as shown in the 1970 Census of Population.

Table E. Percent Distribution of Years of School Completed for Males 20 and 21 Years Old: 1970 Resident Armed Forces and Civilian Population

Years of school completed	Total	Armed Forces (resident)	Civilian
Total......	100	100	100
Not high school graduates.......	21	16	22
High school grad-uates...........	35	61	30
1 year or more of college........	44	23	48

The exclusion from the CPS of a substantial proportion of the members of the Armed Forces appears to increase the proportion of the CPS population with some college and decrease the proportion who finished high school but went no further, at least in 1970. In 1974 with the end of the draft and the initiation of the Volunteer Army, this situation may have changed.

Table F shows the proportion of high school graduates who completed some college for three different groups of men 20 to 21 years old in 1970.

Table F. Percent of Male High School Graduates Who Completed Some College: 1970

Race	1970 census		March 1970 CPS
	Total population including resident Armed Forces	Civilian population	
All races.....	55.4	60.8	58.7
White.........	57.2	62.8	60.6
Black.........	34.5	37.7	40.2

Current Population Survey and Census Data

Apart from the different dates at which the statistics were collected, the education data from the Current Population Survey may differ from those from the 1970 census and from projections based on the census for the following reasons: (1) Members of the Armed Forces in the United States living off post or with their families on post are included in the survey, but all other members of the Armed Forces are excluded. All members of the Armed Forces in the United States are included in the census data. (2) inmates of institutions are excluded from the survey, but are included in the census data. (3) Statistics from both the census and CPS are subject to sampling and response errors. There are differences in coverage, enumeration techniques (self-enumeration versus direct enumeration), and the methods of allocating nonresponses.

A comparison of data from the 1970 census and the March 1970 Current Population Survey on years of school completed for persons 25 years old and over, shows that the median educational level as given in the CPS in 1970 was about the same as that in the 1970 census--12.2 years and 12.1 years, respectively. There are, however, some differences in the distributions from the two sources. The CPS shows more persons having completed the terminal grade (or year) of a given level than does the census. For example, the March 1970 Current Population Survey shows that 13.4 percent of the population 25 years old and over had completed exactly 8 years of elementary school, as compared with 12.8 percent shown by the 5-percent sample of the 1970 census. Comparable figures for exactly 4 years of high school were 34.0 percent in the CPS and 31.0 percent in the 1970 census. For 4 years of college, the corresponding figures were 6.8 percent and 6.1 percent, for the CPS and 1970 census, respectively.

Because of the differences mentioned above, some care should be exercised in comparing the CPS data with those from the 1970 census.

DEFINITIONS AND EXPLANATIONS

Population coverage. The figures in this report for March 1974 are sample survey data and relate to the noninstitutional population of the 50 States and the District of Columbia. Members of the Armed Forces living off post or with their families on post are included, but all other members of the Armed Forces are excluded.

Age. The age classification is based on the age of the person at his 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.

Persons of Spanish origin were persons who reported themselves as Mexican-American, Chicano, Mexican, Mexicano, Puerto Rican, Cuban, Central or South American, or other Spanish origin. However, all persons who reported themselves as Mexican-American, Chicano, Mexican, Mexicano were combined into the one category: Mexican. Persons of Spanish origin may be of any race.

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.

The median years of school completed is defined as the value which divides the population into two equal parts--one-half having completed more schooling and one-half having completed less schooling than the median. This median was computed after the statistics on years of school completed had been coverted to a continuous series of numbers (e.g., completion of the first year of high school was treated as completion of the 9th year and the completion of the first year of college as completion of the 13th year). The persons completing a given school year were assumed to be distributed evenly within the interval from .0 to .9 of the year (for example, persons completing the 12th year were assumed to be distributed evenly between 12.0 and 12.9). In fact, at the time of the March survey, most of the enrolled persons had completed about three-fourths of a school year beyond the highest grade completed, whereas a large majority of persons who were not enrolled had not attended any part of a grade beyond the highest one completed. The effect of the assumption is to place the median for younger persons slightly below, and for older persons slightly above, the true median. Because of the inexact assumption as to the distribution within an interval, this median is more appropriately used for comparing groups and the same group at different dates than as an absolute measure of educational attainment.

Assignment of educational attainment for those not reporting. When information on either the highest grade attended or completion of the grade was not reported in the March survey, entries for the items were assigned using an edit in the computer. The general procedure was to assign an entry for a person that was consistent with entries for other persons with similar characteristics. The specific technique used in the March survey was as follows:

1. The computer stored reported data on highest grade attended by race (white and all other) and age, and on completion of the grade by age and highest grade attended, for persons 14 years old and over in the population.

2. Each stored value was retained in the computer only until a succeeding person having the same characteristics (e.g., same race and age, in the case of assignments for highest grade attended) and having the item reported, was processed through the computer. Then the reported data for the succeeding person were stored in place of the one previously stored.

3. When one or both of the education items for a person 14 years old and over was not reported, the entry assigned to this person was that stored for the last person who had the same characteristics.

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 city. 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 population inside SMSA's is further classified as "in central cities" and "outside central cities." 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.

Farm-nonfarm residence. The farm population refers to rural residents living on farms. The method of determining farm-nonfarm residence in the Current Population Surveys since March 1960 is the same as that used in the 1960 census but differs from that used in earlier census.

The nonfarm population, as the term is used here, comprises persons living in urban areas and rural persons not on farms.

According to the current definition, the farm population consists of all persons living in rural territory on places of less than 10 acres yielding agricultural products which sold for $250 or more in the previous year, or on places of 10 acres or more yielding agricultural products which sold for $50 or more in the previous year. Rural persons in institutions, motels, and tourist camps, and those living on rented places where no land is used for farming, are not classified as farm 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, 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: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, Alaska, and Hawaii.

The North as used in this report includes the combined Northeast and North Central regions.

Employed. Employed persons comprise those civilians who, during the survey week, were either (1) "at work"--those who did any work for pay or profit, or worked without pay for 15 hours or more on a family farm or business; or (2) "with a job but not at work"--those who did not work and were not looking for work but had a job or business from which they were temporarily absent because of vacation, illness, industrial dispute, or bad weather, or because they were taking the week off for various other reasons.

Occupation. Data on occupation are shown for the employed and relate to the 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 generally the major groups used in the 1970 Census of Population. The composition of these groups is shown in 1970 Census of Population reports PC(1)-C1, General Social and Economic Characteristics, U.S. Summary.

Four occupation divisions. The major groups are arranged in four divisions as follows:

White collar. Professional, technical, and kindred workers; managers and administrators, except farm; sales workers; and clerical and kindred workers.

Blue collar. Crafts and kindred workers; operatives, except transport; transport equipment operatives; and laborers, except farm.

Farm workers. Farmers and farm managers, farm laborers and farm supervisors.

Service workers. Service workers including private households.

The sequence in which these four divisions appears is not intended to imply that any division has a higher social or skill level than another.

Income. For each person in the sample 14 years old and over, questions were asked on the amount of money income received in 1973 from (1) money wages or salary, (2) net income from self-employment and (3) other income. Wage or

salary income in 1973 is defined as the total money earnings received for work performed as an employee during the calendar year 1973. It includes wages, salary, Armed Forces pay, commissions, tips, piece-rate payments, and cash bonuses earned, before deductions were made for taxes, bonds, pensions, union dues, etc. Net income from self-employment is defined as net money income (gross receipts minus operating expenses) from a business, partnership professional enterprise, or farm in which the person was engaged in his own account. Other money income includes money income received from the following sources: (1) Social Security, veterans payments, or other government or private pensions; (2) interest (on bonds or savings), dividends, and income from annuities, estates, or trust; (3) net income from boarders or lodgers, or from renting property to others; (4) all other sources such as unemployment benefits, public assistance, alimony, etc.

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 1973 the characteristics of the person, such as age, labor force status, and occupation, and the characteristics and composition of the family refer to March 1974. Income of farm persons does not include income "in kind" such as the value of farm produce consumed at home, or rental value of the home they own. Furthermore, the cost of living is generally higher in urban areas, requiring higher incomes to maintain a similar level of living.

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

SOURCE AND RELIABILITY OF THE ESTIMATES

Source of data. The data for this report for the years 1965-1974 are based on results obtained in the Current Population Survey (CPS) of the Bureau of the Census. The data for 1940, 1950, and 1960 are based on the Decennial Censuses of those years. The current CPS 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 housing units 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.

CPS has undergone many changes in its sample size and sample design since being placed on a probability sampling basis in 1943. The table below summarizes these changes dating from 1963, as 1965 data was the earliest CPS data used in this report.

Year of full initiation	Sample size	Number of sample areas
1973	47,000	461
1971	47,000	449
1967	50,000	449
1963	35,000	357

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 prior Census of Population; statistics of births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces.

Reliability of the estimates. Estimates which are based on a sample may differ somewhat from the figures which would have been obtained from a complete census, using the same schedules, instructions, and enumerators. Care should be exercised in the interpretation of figures based on a relatively small number of sample cases as well as small differences between estimates. As is the case with 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 entire population is surveyed. As calculated for this report, the standard error partially measures the effect of certain response and interviewer errors but does not measure any systematic biases in the data. The chances are about 68 out of 100 that an estimate from the survey differs 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 chances are 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 the use of the phrase "some evidence") have a level of significance between 1.6 and 2.0 standard errors.

The figures presented in tables G, H, I, and J are approximations to the standard errors of various estimates from CPS shown in this report. In order to derive standard errors that will 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. For CPS estimates for the years 1965 and 1966, the standard errors in these tables should be multiplied by 1.23. Measures of the reliability of the estimates from a census can be found in the appropriate census volume. The standard

errors on census estimates are generally much smaller than on CPS estimates, and thus can be assumed to be zero when comparisons are being made between census and CPS estimates.

Standard errors of estimated numbers. Tables G and H show standard errors for estimated numbers. Linear interpolation in these tables may be used to obtain standard errors for intermediate values not shown in these tables.

Standard errors of estimated Percentages. 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 I and J contain the standard errors of the estimated percentage. Linear interpolation in these tables may be used to obtain standard errors for intermediate values.

Table G. Standard Errors for Estimated Numbers of Persons Enrolled in School, Total or White Population

(68 chances out of 100)

Estimated number of persons	Total persons in age group (thousands)									
	100	250	500	1,000	2,500	5,000	10,000	25,000	50,000	100,000
10............	4.4	4.6	4.6	4.6	4.6	4.7	4.7	4.7	4.7	4.7
20............	5.9	6.3	6.5	6.5	6.6	6.6	6.6	6.6	6.6	6.6
30............	6.8	7.6	7.8	7.9	8.0	8.0	8.1	8.1	8.1	8.1
40............	7.2	8.5	8.9	9.1	9.2	9.3	9.3	9.3	9.3	9.3
50............	7.4	9.3	9.9	10.2	10.3	10.4	10.4	10.4	10.4	10.4
75............	6.4	10.7	11.8	12.3	12.6	12.7	12.7	12.7	12.7	12.8
100............	-	11.4	13.2	14.0	14.4	14.6	14.7	14.7	14.7	14.7
200............	-	9.3	16.1	18.6	20.0	20.4	20.6	20.7	20.8	20.8
300............	-	-	16.1	21.3	23.9	24.7	25.1	25.4	25.4	25.5
400............	-	-	13.2	22.8	27.0	28.3	28.9	29.2	29.3	29.4
500............	-	-	-	23.3	29.5	31.2	32.1	32.6	32.8	32.9
750............	-	-	-	20.2	33.8	37.2	38.8	39.7	40.0	40.2
1,000........	-	-	-	-	36.1	41.7	44.2	45.6	46.1	46.3
2,000........	-	-	-	-	29.5	51.0	58.9	63.2	64.5	65.2
3,000........	-	-	-	-	-	51.0	67.5	75.7	78.2	79.5
4,000........	-	-	-	-	-	41.7	72.2	85.4	89.4	91.3
5,000........	-	-	-	-	-	-	73.7	93.2	98.8	101.5
7,500........	-	-	-	-	-	-	63.9	106.7	117.6	122.7
10,000........	-	-	-	-	-	-	-	114.1	131.8	139.7
20,000........	-	-	-	-	-	-	-	93.2	161.4	186.3
30,000........	-	-	-	-	-	-	-	-	161.4	213.5
40,000........	-	-	-	-	-	-	-	-	131.8	228.2
50,000........	-	-	-	-	-	-	-	-	-	232.9
75,000........	-	-	-	-	-	-	-	-	-	201.7

Note: For CPS estimates for the years 1965 and 1966, the standard errors in these tables should be multiplied by 1.23.

- Represents zero.

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 Surveys and censuses 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. Detailed table 1 of this report indicates that there were 1,342,000 white males 20 or 21 years of age who have completed high school and it also shows that there were 3,135,000 total white persons in that age group. Table G shows that the standard error on an estimate of this size is about 37,000. The chances are 68 out of 100 that the estimate would have shown a figure differing from a complete census figure by less than 37,000. The chances are 95 out of 100 that the estimate would have shown a figure differing from a complete census figure by less than 74,000, i.e., this 95 percent confidence interval would be from 1,268,000 to 1,416,000. $\left[1,342,000 \pm 2\ (37,000) \right]$

Table 1 shows that there are 12,804,000 25-to-34 year old white females in the population. Table A shows that 81.0 percent of these females have completed 4 years of high school or more. Table I shows the standard error of 81.0 percent to be approximately 0.5 percentage points. Chances are 68 out of 100 that the estimated 81.0 percent would be within 0.5 percentage points of a complete census figure, and chances are 95 out of 100 that the estimate would be within 1.0 percentage points of a complete census figure, i.e., this 95 percent confidence interval would be from 80.0 to 82.0 percent.

Table H. Standard Errors for Estimated Numbers of Persons Enrolled in School, Negro and Other Races

(68 chances out of 100)

Estimated number of persons	Total persons in age group (thousands)						
	100	250	500	1,000	2,500	5,000	10,000
10.................	4.8	5.0	5.0	5.0	5.1	5.1	5.1
20.................	6.4	6.9	7.0	7.1	7.1	7.1	7.2
30.................	7.3	8.2	8.5	8.6	8.7	8.7	8.8
40.................	7.8	9.3	9.7	9.9	10.0	10.1	10.1
50.................	8.0	10.1	10.7	11.0	11.2	11.3	11.3
75.................	6.9	11.6	12.8	13.3	13.7	13.8	13.8
100.................	-	12.4	14.3	15.2	15.7	15.8	15.9
200.................	-	10.1	17.5	20.2	21.7	22.2	22.4
300.................	-	-	17.5	23.2	26.0	26.9	27.3
400.................	-	-	14.3	24.8	29.3	30.7	31.4
500.................	-	-	-	25.3	32.0	34.0	34.9
750.................	-	-	-	21.9	36.7	40.4	42.2
1,000.............	-	-	-	-	39.2	45.3	48.0
2,000.............	-	-	-	-	32.0	55.4	64.0
3,000.............	-	-	-	-	-	55.4	73.3
4,000.............	-	-	-	-	-	45.3	78.4
5,000.............	-	-	-	-	-	-	80.0
7,500.............	-	-	-	-	-	-	69.3
10,000.............	-	-	-	-	-	-	-

Note: For CPS estimates for the years 1965 and 1966, the standard errors in these tables should be multiplied by 1.23.

- Represents zero.

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 over estimate the true standard error.

Illustration of the computation of the standard error of a difference. Table 1 of this report shows that there are 398,000 black males and 488,000 black females who are 20 and 21 years old in the population in 1974. Table C shows that 36.9 percent of these black males and 42.8 percent of these black females had completed at least one year of college. Thus, the apparent difference between these proportions is 5.9 percentage points. From table J it can be seen that the standard errors of 36.9 percent and 42.8 percent are approximately 4.0 and 3.7

percentage points respectively. The standard error of the estimated difference of 5.9 percentage points is about

$$5.4 = \sqrt{(4.0)^2 + (3.7)^2}$$

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 5.4 percentage points. The 68 percent confidence interval around the 5.9 percentage points difference is from 0.5 to 11.3 percentage points. A conclusion that the average estimate of the change 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 -4.9 to 16.7 (5.9 ± 2 x 5.4), which does not exclude negative values and hence, we cannot conclude with 95 percent confidence that the proportion of 20 and 21 year old black males completing at least one year of college is actually less than the proportion of 20 and 21 year old black females in 1974.

Table I. Standard Errors of Estimated Percentages, Total or White Population

(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......	2.0	1.3	0.9	0.6	0.4	0.3	0.2	0.1	0.1	0.1
5 or 95......	3.1	2.0	1.4	1.0	0.6	0.4	0.3	0.2	0.1	0.1
10 or 90.....	4.3	2.8	1.9	1.4	0.9	0.6	0.4	0.3	0.2	0.1
25 or 75.....	6.2	4.0	2.8	2.0	1.2	0.9	0.6	0.4	0.3	0.2
50...........	7.2	4.5	3.2	2.3	1.4	1.0	0.7	0.5	0.3	0.2

Note: For CPS estimates for the years 1965 and 1966, the standard errors in these tables should be multiplied by 1.23.

Table J. Standard Errors of Estimated Percentages, 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
2 or 98........	3.3	2.3	1.5	1.0	0.7	0.5	0.3	0.2
5 or 95........	5.2	3.6	2.3	1.6	1.2	0.7	0.5	0.4
10 or 90.......	7.1	5.0	3.2	2.2	1.6	1.0	0.7	0.5
25 or 75.......	10.2	7.2	4.6	3.2	2.3	1.4	1.0	0.7
50.............	11.8	8.4	5.3	3.7	2.6	1.7	1.2	0.8

Note: For CPS estimates for the years 1965 and 1966, the standard errors in these tables should be multiplied by 1.23.

Medians and Quartiles. An explanation of the meaning of the first quartile, second quartile or median, and the third quartile is presented in the text of this report. The following discussion describes the procedure for calculating a confidence interval for a median. By replacing the word median with first quartile or third quartile and 50 percent by 25 percent or 75 percent as appropriate, the procedure for calculating a confidence interval for the first or third quartile is described.

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 table I or table J 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); and (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 the first quartile. Table B shows that the first quartile of the number of years of educational attainment for black females 25 to 34 years old in 1974 was 10.8 years. The size, or base, of the distribution from which this first quartile was determined is 1,657,000 persons as can be calculated from table 1.

1. Table J shows that the standard error of 25 percent on a base of 1,657,000 is about 1.9 percent.

2. To obtain a two standard error confidence interval on the estimated first quartile, initially add to and subtract from 25 percent twice the standard error found in step (1). This yields percentage limits of 21.2 and 28.8.

3. From table 1 it can be seen that 15.3 percent of black females had less than 10 years of school and 12.5 percent had between 10 and 11 years of school. By linear interpolation the lower limit on the estimate is found to be about:

$$10 + (11-10) \left(\frac{21.2 - 15.3}{12.5}\right) \doteq 10.5$$

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

$$11 + (12-11) \left(\frac{28.8 - 27.8}{8.2}\right) \doteq 11.1$$

Thus, the 95 percent confidence interval ranges from 10.5 to 11.1.