CURRENT POPULATION REPORTS
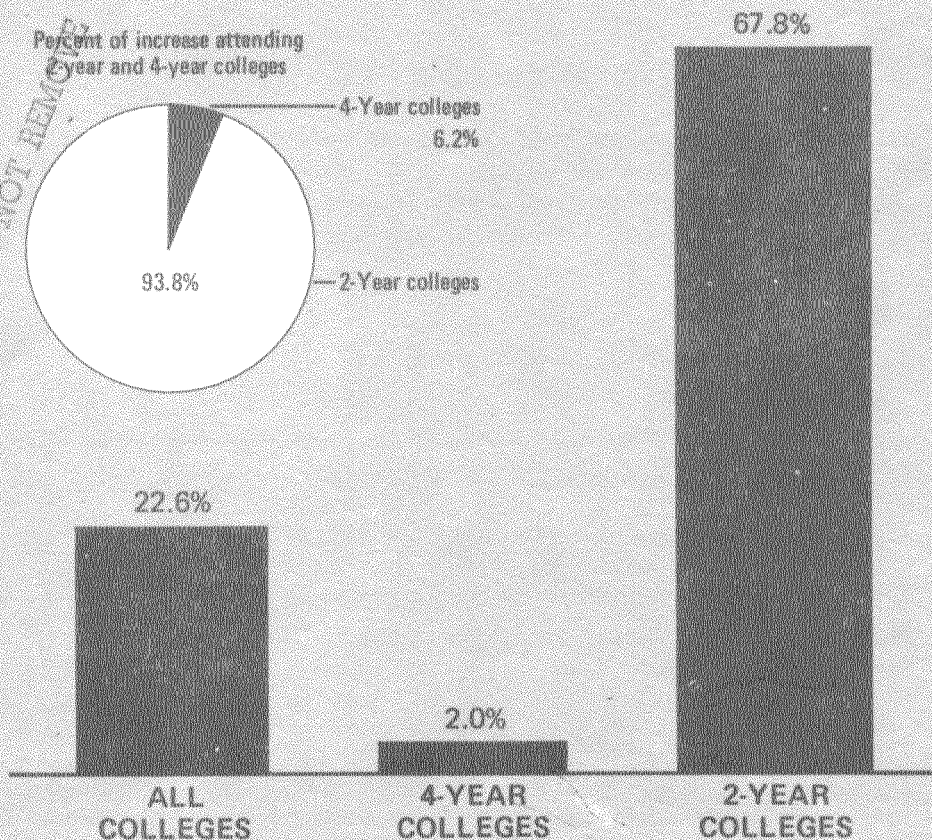
Population Characteristics

UNDERGRADUATE ENROLLMENT IN 2-YEAR AND 4-YEAR COLLEGES: OCTOBER 1972

Increase in Number of First and Second Year College Students: October 1966 to October 1972
(Based on number reporting type of college)

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UNDERGRADUATE ENROLLMENT IN 2-YEAR AND 4-YEAR COLLEGES: OCTOBER 1972

There have been considerable gains in the number of students enrolled in college at the undergraduate level in the past several years. The gain in enrollment in 2-year colleges has been especially marked. The total number of students enrolled in the first 4 years of college increased from 5.1 million in October 1966 to 7.0 million in October 1972, or by 37 percent.[1] Enrollment in 2-year colleges increased from 1.0 million to 1.9 million during this time period, or by 83 percent, accounting for most of the increase in the size of the freshman and sophomore classes since 1966 (table A). The proportion of first- and second-year students who were attending 2-year colleges rather than 4-year colleges increased from 31 percent in 1966 to 43 percent in 1972. The information on social and economic characteristics of undergraduates shows that the opening of many 2-year community colleges has increased the opportunity for college education for minority students and also for older persons.

These findings are based on results from the Current Population Survey conducted by the Bureau of the Census in October 1972 and earlier years

and relate to the civilian noninstitutional population 14 to 34 years old enrolled in college. The same survey showed that about 1.3 million persons were enrolled in graduate school in 1972 as compared with about 900,000 in 1966.

FACTORS RELATED TO 2-YEAR COLLEGE ATTENDANCE

Race and Spanish origin. Ethnic origin has only a limited effect on the likelihood that an undergraduate was attending a 2-year rather than a 4-year college. For example, in October 1972, 46 percent of undergraduates of Spanish origin were enrolled in 2-year colleges, compared with 27 percent of all undergraduates. However, this high rate of 2-year college attendance for persons of Spanish origin may reflect the residence rather than the ethnicity of persons of Spanish origin; a large proportion of persons of Spanish origin live in the West region where 2-year college enrollment is more likely for all persons (table 5).[2] The proportion of Negro undergraduates attending 2-year colleges was somewhat higher than for whites in 1972.[3]

Sex. Overall, the number of women undergraduates increased by 49 percent between 1966 and 1972 while the number of men increased by 29 percent. This resulted in a decline in the sex ratio from 153 men per 100 women in 1966 to 132 men per 100 women in 1972 for all undergraduates (tables C and D). However, the decline in the sex ratio occurred only within 4-year colleges. In October 1966 the sex ratio was about the same for students enrolled in 2-year colleges as it was for freshmen and sophomores in 4-year colleges--141 men per 100 women. In October 1972, however, the sex ratio of students enrolled in 2-year colleges was still at about the 1966 level--143 men per 100 women--but the sex ratio of freshmen and sophomores in 4-year colleges had declined to 114 men per 100 women.

Table A. Undergraduate College Enrollment of Persons 14 to 34 Years Old by Type of College and Sex: October 1972 and 1966

(Numbers in thousands. Civilian noninstitutional population)

Level of college and sex	1972	1966	Increase	
			Number	Percent
ALL COLLEGES				
Total......	6,992	5,113	1,879	36.7
Male............	3,982	3,095	887	28.7
Female..........	3,010	2,018	992	49.2
TWO-YEAR COLLEGES				
Total......	1,910	1,046	864	82.6
Male............	1,125	612	513	83.8
Female..........	785	435	350	80.5

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[1] Information on 2-year and 4-year colleges was first collected in October 1966 and has been collected every year since 1970.

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[2] Thirty-seven percent of persons of Spanish origin and 53 percent of persons of Mexican origin lived in the West region in 1970. See U.S. Bureau of the Census. Census of Population: 1970. Subject Reports, Final Report PC(2)-1C. "Persons of Spanish Origin," table 1.

[3] The difference is statistically significant at the 85 percent confidence level.

Table B. Undergraduate College Enrollment of Persons 14 to 34 Years Old by Type of College, Year, Race, Spanish Origin, and Age: October 1972

(Numbers in thousands. Civilian noninstitutional population)

Age, race, and Spanish origin	Total under-graduates	2-year colleges[1]	Type of college		Not reported
			4-year colleges		
			1st and 2nd year	3rd and 4th year	
14 to 34 years old					
Total......................	6,992	1,910	2,349	2,506	227
White...........................	6,245	1,670	2,088	2,308	180
Negro...........................	640	200	229	168	43
Spanish origin[2]................	223	102	53	56	11
Percent					
Total......................	100.0	27.3	33.6	35.8	3.2
White...........................	100.0	26.7	33.4	37.0	2.9
Negro...........................	100.0	31.3	35.8	26.3	6.7
Spanish origin[2]................	100.0	45.7	23.8	25.1	4.9
35 years old and over					
Total......................	434	216	83	131	4
Percent................	100.0	49.8	19.1	30.2	0.9

[1]Includes 154,000 persons in 2-year colleges enrolled in the third year of college.
[2]Persons of Spanish origin may be of any race.

Table C. Enrollment in the First Two Years of College of Persons 14 to 34 Years Old by Type of College and Sex: October 1972, 1971, and 1966

(Number in thousands. Civilian noninstitutional population)

Year and sex	Total	Type of college		Percent distribution		
		2-year colleges	4-year colleges	Total[1]	Type of college	
					2-year colleges	4-year colleges
1972						
Total........	4,105	1,756	2,349	100.0	42.8	57.2
Male..............	2,280	1,031	1,249	100.0	45.2	54.8
Female............	1,825	725	1,100	100.0	39.7	60.3
1971						
Total........	4,189	1,830	2,359	100.0	43.7	56.3
Male..............	2,387	1,087	1,300	100.0	45.5	54.5
Female............	1,802	743	1,059	100.0	41.2	58.8
1966						
Total........	3,349	1,046	2,303	100.0	31.2	68.8
Male..............	1,959	612	1,347	100.0	31.2	68.8
Female............	1,390	435	955	100.0	31.3	68.7

[1]Excludes those who did not report on type of college in 1972 and 1971.

Table D. Sex Ratio of Undergraduate College Students 14 to 34 Years Old, by Type of College and Year: October 1972 and 1966

(Men per 100 women. Civilian noninstitutional population)

Type of college and year	1972	1966
All colleges.....	132	153
2-year colleges........	143	141
4-year colleges........	130	157
1st and 2nd year.....	114	141
3rd and 4th year.....	148	181

The decline in the ratio of men to women in 4-year colleges occurred as the increasing numbers of freshmen and sophomore women were more likely to attend 4-year colleges than were men. About the same proportion of men and women freshmen and sophomores were attending 4-year colleges in 1966 (69 percent), but by 1972, male freshmen and sophomores enrolled in 4-year colleges had dropped to 55 percent, while female freshmen and sophomores increased to 60 percent. (table C). Forty-five percent of men and 40 percent of women were in 2-year colleges.

Age. Undergraduates of 1972 were somewhat older than those of 1966. Between 1966 and 1972, the median age of all undergraduates increased from 19.9 years to 20.5 years. In 1966, the median age of students in 2-year colleges was 19.4 years, but by 1972 had risen to 20.4 years, or about the same as for all undergraduates. Much of the increase in the median age of 2-year college students reflects the increasing proportion who are 20 to 34 years old (above the typical ages of college freshmen and sophomores). The proportion of men 2-year college students of this age increased from 40 percent of the total in 1966 to 58 percent in 1972. For women, the corresponding increases were from 25 percent in 1966 to 48 percent in 1972.

In addition, half of the 434,000 undergraduates 35 years old and over in 1972 were attending 2-year colleges. Students of this age made up about 11 percent of all 2-year college students but only 4 percent of freshmen and sophomores enrolled in 4-year colleges.

Education of family head. The college undergraduates in October 1972 were somewhat more likely than the undergraduates in October 1966 to be members of families whose head was at least a high school graduate. This was true for both 2-year and 4-year college students

Table E. Undergraduate College Enrollment of Persons 14 to 34 Years Old by Type of College, Age, and Sex: October 1972 and 1966

(Numbers in thousands. Civilian noninstitutional population)

Sex and age	All colleges		2-year colleges	
	1972	1966	1972	1966
MALE				
Total, 14 to 34 years old............	3,982	3,095	1,125	612
Percent Distribution				
Total, 14 to 34 years old............	100.0	100.0	100.0	100.0
14 to 19 years old........................	37.8	46.7	42.3	60.1
20 to 34 years old........................	62.2	53.3	57.7	39.9
FEMALE				
Total, 14 to 34 years old............	3,010	2,018	785	435
Percent Distribution				
Total, 14 to 34 years old............	100.0	100.0	100.0	100.0
14 to 19 years old........................	48.8	59.4	51.7	75.4
20 to 34 years old........................	51.2	40.6	48.3	24.6

and probably reflects a general increase in the proportion of parents with children of college age who have at least a high school education. For example, between March 1966 and March 1972, the proportion of all persons 45 years old and over who had completed at least a high school education increased from 38 percent to 48 percent.

The increased likelihood of a college undergraduate being enrolled in a 2-year college occurred among students from families whose head had completed 4 or more years of college as well as among students whose family head had not completed high school. In October 1972, 17 percent of the undergraduate students whose family head had completed 4 or more years of college were enrolled in 2-year colleges as compared with 11 percent in 1966 (table F). Of those undergraduates whose family head had not graduated from high school, the proportion attending 2-year colleges increased from 25 percent in 1966 to 32 percent in 1972. However, in both 1966 and 1972, undergraduate students whose family head was not a high school graduate were more likely to be attending 2-year colleges than were undergraduate students whose family head had 4 or more years of college.

Family income. In both 1966 and 1972, undergraduates attending 4-year colleges were from families with higher incomes than undergraduates attending 2-year colleges. The median income of the families of 2-year college students was $12,000 and of 4-year college students, $14,000 (table G). Families with incomes of $15,000 or more were less likely than families with less income to send their children to 2-year colleges rather than 4-year colleges. However, for families at that income range with undergraduate college children, the proportion attending 2-year colleges increased between 1966 and 1972, indicating that 2-year colleges are attended more frequently by members of upper income as well as lower income families (table H).

RELATED REPORTS

Data on 2-year and 4-year college enrollment for October 1971, 1970, and 1966 were presented in Series P-20, Nos. 236, 231, and 183.

Data on school enrollment for all levels for October 1971 were presented in Series P-20, No. 241. Statistics on school enrollment for October in the years prior to 1971 have been published in other reports in Series P-20. Statistics on living arrangements of college students can be found in "Living Arrangements of College Students: October 1971," Current Population Reports, Series P-20, No. 245. Statistics on college attendance and related factors, including type of college, living arrangements, marital status, field of specialization and college rank, can be found in "Characteristics of Students and Their Colleges: October 1966," Current Population Reports, Series P-20, No. 183.

Table F. Undergraduate College Enrollment of Dependent Family Members 14 to 34 Years Old by Type of College and Years of School Completed by the Family Head: October 1972 and 1966

(Numbers in thousands. Civilian noninstitutional population)

Years of school completed by family head and year	Total under- graduates	Type of college		Percent in 2-year colleges
		2-year colleges	4-year colleges	
1972				
Total dependent family members.......	4,720	1,180	3,540	25.0
Less than 4 years high school..............	1,069	343	726	32.1
4 years of high school.....................	1,709	445	1,264	26.0
1 to 3 years of college.....................	695	178	517	25.6
4 years or more of college.................	1,247	214	1,033	17.2
1966				
Total dependent family members.......	4,008	804	3,204	20.1
Less than 4 years high school..............	1,201	300	901	25.0
4 years of high school.....................	1,337	276	1,061	20.6
1 to 3 years of college.....................	647	140	507	21.6
4 years or more of college.................	824	89	735	10.8

Table G. Undergraduate College Enrollment of Dependent Family Members 18 to 24 Years Old by Type of College and Family Income: October 1972 and 1966

(Civilian noninstitutional population)

Family income and year	Total under-graduates	Type of college		Family income and year	Total under-graduates	Type of college	
		2-year colleges	4-year colleges			2-year colleges	4-year colleges
1972				**1966[3]**			
Total family members...(thous)..	[1]4,541	1,099	3,326	Total family members...(thous)..	3,702	720	2,982
Percent[2].....	100.0	100.0	100.0	Percent[2].....	100.0	100.0	100.0
Under $3,000.........	3.1	4.2	2.7	Under $3,000.........	3.0	3.6	2.9
$3,000 to $4,999.....	5.4	6.6	5.0	$3,000 to $4,999.....	5.2	6.5	4.8
$5,000 to $7,499.....	9.8	11.4	9.3	$5,000 to $7,499.....	12.2	15.2	11.5
$7,500 to $9,999.....	11.1	11.8	10.9	$7,500 to $9,999.....	16.0	19.7	15.0
$10,000 to $14,999...	29.3	33.8	27.8	$10,000 to $14,999...	27.5	30.0	26.9
$15,000 and over.....	41.2	32.6	44.3	$15,000 and over.....	36.1	24.9	38.8
Median[2].....dollars..	13,477	12,362	13,984	Median[2].....dollars..	12,472	10,821	12,928

[1]Includes 116,000 students who did not report on type of college.
[2]Based on number reporting on family income.
[3]In 1972 dollars.

Table H. Percent of Undergraduate Dependent Family Members 18 to 24 Years Old Attending 2-Year Colleges by Family Income: October 1972 and 1966

(Numbers in thousands. Civilian noninstitutional population)

Family income	1972		1966[1]	
	Undergraduates	Percent in 2-year colleges	Undergraduates	Percent in 2-year colleges
Total family members............	4,541	24.2	3,702	19.5
Under $3,000.........................	129	33.3	101	23.8
$3,000 to $4,999.....................	227	29.5	172	25.0
$5,000 to $7,499.....................	411	27.7	407	24.6
$7,500 to $9,999.....................	466	26.0	532	24.4
$10,000 to $14,999..................	1,223	28.2	917	21.6
$15,000 and over....................	1,722	19.3	1,202	13.6
Not reported........................	365	21.1	370	16.5

[1]In 1972 dollars.

Statistics on school enrollment for cities, standard metropolitan statistical areas, States, regions, and the United States appear in reports of the decennial censuses. Detailed statistics on school enrollment by age and socioeconomic characteristics for regions and the United States are presented in Subject Reports of the 1970 census, especially in PC(2)-5A, School enrollment.

Figures on school enrollment from the October Current Population Survey differ from decennial census data for reasons in addition to the difference in the dates. In the first place, the survey data exclude the institutional population and members of the Armed Forces. These two groups were included in the census. Second, there were differences in field work. The small group of Current Population Survey enumerators were more experienced and had more intensive training and supervision than the large number of temporary Census enumerators and may have more often obtained more accurate answers from respondents. Third, the census was taken in April and

relates to enrollment since February 1, whereas the surveys were taken in October and relate to enrollment in the current term. This difference in months of the year affects not only the extent of school enrollment (through "dropouts" during the school year, etc.) but also the level of school in which persons of a given age are enrolled.

Data from school systems. Information on college enrollment is also collected and published by Federal, State, and local governmental agencies, and by independent research organizations. This information is generally obtained from reports of school systems and institutions of higher learning, and from other surveys and censuses. These data are only roughly comparable with data collected by the Bureau of the Census by household interviews, however, because of differences in definitions, subject matter covered, and enumeration methods. The census data are subject to sampling variability, which may be relatively large where numbers for specific age or population groups, or for given school categories, are small.

DEFINITIONS AND EXPLANATIONS

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

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.

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 school that may advance a person toward a college or university degree. The statistics on college enrollment shown in this report refer only to undergraduate enrollment, that is to enrollment in the first four years of college.

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 a 2-year college (junior or community college). Those who replied "yes" were classified as enrolled in a two-year college. Those who replied "no" were classified as enrolled in a 4-year college.

Public or private college. In this report, a public college is defined as any institution of higher education operated by publicly elected or appointed officials and supported by public funds. Private colleges included institutions established and operated by religious bodies, as well as those which are under other private control. In cases where enrollment was in a 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 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.

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 $3,000) 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 (table I). 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.

Table I. Money Income Categories for October 1972 Control Card

Under $1,000	$7,500 to $9,000
$1,000 to $1,999	$10,000 to $11,999
$2,000 to $2,999	$12,000 to $14,999
$3,000 to $3,999	$15,000 to $19,999
$4,000 to $4,999	$20,000 to $24,999
$5,000 to $5,999	$25,000 and over
$6,000 to $7,499	

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 for 1972 are based on data obtained in the Current Population Survey (CPS) of the Bureau of the Census. The sample was 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 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 estimates for 1966 in this report were based on data obtained in October 1966 in the Current Population Survey of the Bureau of the Census. The sample was spread over 357 areas comprising 701 counties and independent cities, with coverage in each of the 50 States and the District of Columbia. Approximately 35,000 occupied housing units were designated for interview each month.

The estimation 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. The independent estimates for 1972 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 in this report are based on a sample, they may differ somewhat from the figures that would have been obtained from a complete census, using the same schedules, instructions and enumerators. As in any survey work, the results are subject to errors of response and of reporting as well as being subject to sampling variability.

The standard error is primarily a measure of sampling variability, that is, of the variations that occur by chance because a sample rather than the whole of the population is surveyed. As calculated for this report, the standard error also partially measures the effect of 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 than the standard error, and the chances are about 95 out of 100 that the difference would be less than twice the standard error.

Table J. October CPS Control Card Family Income and March CPS Supplement Family Income for 1967 Through 1972

Year	Median family income, October control card	Percent change	Median family income, March supplement	Percent change	October-March ratio
1967.................................	$6,811	(X)	$7,974	(X)	0.85
1968.................................	7,189	+5.5	8,632	+8.3	0.83
1969.................................	7,770	+8.1	9,433	+9.3	0.82
1970.................................	8,268	+6.4	9,867	+4.6	0.84
1971.................................	8,680	+5.0	10,285	+4.2	0.84
1972.................................	9,275	+6.9	11,116	8.1	0.83

X Not applicable.

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 K, L, M, and N 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, rather than the precise standard error for any specific item. Tables K and L contain the standard errors of estimated numbers for a given age-sex group of persons. The figures presented in table O are estimates of the total numbers of persons in age-sex-race groups which are to be used in the calculation of standard errors from Tables K, L, M, and N.

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 M and N contain the standard errors of the estimated percentages.

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.

Table K. Standard Errors for Estimated Numbers, Total or White Population: 1972

(Numbers in thousands. 68 chances out of 100)

Estimated number of persons	Total persons in age-sex group									
	100	250	500	1,000	2,500	5,000	10,000	25,000	50,000	100,000
10...........	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
20...........	6.0	6.3	6.3	6.4	6.4	6.4	6.4	6.4	6.4	6.4
30...........	6.9	7.6	7.7	7.8	7.8	7.8	7.8	7.8	7.8	7.8
40...........	7.4	8.6	8.8	8.9	9.0	9.0	9.0	9.0	9.0	9.0
50...........	7.5	9.5	9.8	10.0	10.1	10.1	10.1	10.1	10.1	10.1
75...........	6.5	10.9	11.9	12.1	12.3	12.3	12.4	12.4	12.4	12.4
100..........	-	11.6	13.4	13.9	14.1	14.2	14.3	14.3	14.3	14.3
200..........	-	9.5	16.0	19.0	20.0	20.0	20.0	20.0	20.0	20.0
300..........	-	-	16.0	22.0	24.0	24.0	25.0	25.0	25.0	25.0
400..........	-	-	13.0	23.0	27.0	28.0	28.0	28.0	29.0	29.0
500..........	-	-	-	24.0	30.0	31.0	32.0	32.0	32.0	32.0
750..........	-	-	-	21.0	34.0	38.0	38.0	39.0	39.0	39.0
1,000........	-	-	-	-	37.0	42.0	44.0	45.0	45.0	45.0
2,000........	-	-	-	-	30.0	52.0	60.0	63.0	63.0	64.0
3,000........	-	-	-	-	-	52.0	69.0	76.0	77.0	78.0
4,000........	-	-	-	-	-	42.0	74.0	86.0	88.0	89.0
5,000........	-	-	-	-	-	-	75.0	95.0	98.0	100.0
7,500........	-	-	-	-	-	-	65.0	109.0	119.0	121.0
10,000.......	-	-	-	-	-	-	-	116.0	134.0	139.0
20,000.......	-	-	-	-	-	-	-	95.0	164.0	190.0
30,000.......	-	-	-	-	-	-	-	-	164.0	217.0
40,000.......	-	-	-	-	-	-	-	-	134.0	232.0
50,000.......	-	-	-	-	-	-	-	-	-	237.0
75,000.......	-	-	-	-	-	-	-	-	-	205.0

Note: To estimate standard errors for 1966 estimates, multiply these standard errors by 1.2.

Illustration of the use of tables of standard errors. Table A of this report shows that 1,910,000 persons 14 to 34 years old in October 1972 were enrolled in 2-year colleges. Table O shows there are 67,770,000 persons 14 to 34 years old. Interpolation in table K shows the standard error on 1,910,000 in an age-sex group containing 67,770,000 to be approximately 62,000. The chances are 68 out of 100 that the estimate would differ from a complete census figure by less than 62,000. The chances are 95 out of 100 that the estimate would differ from a complete census figure by less than 124,000, i.e., this 95 percent confidence interval would be from 1,788,000 to 2,034,000. Of these 1,910,000 students, 785,000 or 41.1 percent were females. Interpolation in table M shows the standard error on 41.1 percent on a base of 1,910,000 to be approximately 1.7 percent. Consequently, chances are 68 out of 100 that the 41.1 percent would be within 1.7 percentage points of a complete census figure, and chances are 95 out of 100 that the estimate would be with 3.4 percentage points of a complete census figure, i.e., this 95 percent confidence interval would be from 37.7 to 44.5 percent.

Table A of this report shows that in 1966 there were 1,046,000 persons 14 to 34 years old enrolled in 2-year colleges. Thus, the apparent change in the number of persons enrolled in 2-year colleges between 1966 and 1972 is 864,000. The standard error of 1,910,000 is 62,000 as shown above. Table O shows there were 55,322,000 persons 14 to 34 years old in 1966. Interpolation in table K shows the standard error on an estimate of 1,046,000 to be approximately 46,000. Multiplying the 46,000 by the factor 1.2 for 1966 estimates (46,000 x 1.2 = 55,000) produces an approximation to the standard error on the estimate of 1,046,000. The standard error of the estimated change of 864,000 is about

$$83,000 = \sqrt{(62,000)^2 + (55,000)^2}$$

This means the chances are 68 out of 100 that the estimated difference based on the samples would differ from the change derived using complete census figures by less than 83,000. The 68 percent confidence interval around the 864,000 change is 781,000 to 947,000, i.e. 864,000 ± 83,000. 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 698,000 to 1,030,000 and thus we can conclude with 95 percent confidence that the number of students enrolled in 2-year colleges in 1966 is actually less than those enrolled in 1972.

Table L. Standard Errors for Estimated Numbers, Negro and Other Races: 1972

(Numbers in thousands. 68 chances out of 100)

Estimated number of persons	Total persons in age-sex group						
	100	250	500	1,000	2,500	5,000	10,000
10...................	5.0	5.1	5.2	5.2	5.2	5.2	5.2
20...................	6.6	7.1	7.3	7.3	7.4	7.4	7.4
30...................	7.6	8.5	8.8	9.0	9.0	9.1	9.1
40...................	8.2	9.6	10.1	10.3	10.4	10.5	10.5
50...................	8.3	10.5	11.1	11.4	11.6	11.7	11.7
75...................	7.3	12.1	13.3	13.8	14.2	14.3	14.3
100...................	-	12.9	14.9	16.0	16.0	16.0	17.0
200...................	-	10.7	18.0	21.0	23.0	23.0	23.0
300...................	-	-	18.0	24.0	27.0	28.0	28.0
400...................	-	-	15.0	26.0	30.0	32.0	33.0
500...................	-	-	-	26.0	33.0	35.0	36.0
750...................	-	-	-	23.0	38.0	42.0	44.0
1,000...................	-	-	-	-	41.0	47.0	50.0
2,000...................	-	-	-	-	34.0	58.0	66.0
3,000...................	-	-	-	-	-	58.0	76.0
4,000...................	-	-	-	-	-	48.0	82.0
5,000...................	-	-	-	-	-	-	83.0
7,500...................	-	-	-	-	-	-	73.0
10,000...................	-	-	-	-	-	-	-

Note: To estimate standard errors for 1966 estimates, multiply these standard errors by 1.2.

Table M. Standard Errors of Estimated Percentages, Total or White Population: 1972

(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	2.7	1.9	1.4	0.9	0.6	0.4	0.3	0.2	0.1
25 or 75.....	6.2	3.9	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: To estimate standard errors for 1966 estimates, multiply these standard errors by 1.2.

Table N. Standard Errors of Estimated Percentages, Negro and Other Races: 1972

(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........	5.1	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: To estimate standard errors for 1966 estimates, multiply these standard errors by 1.2.

Table O. Independent Estimates of Age-Sex-Race Categories: October 1972 and 1966

(In thousands)

Year and age group	Total		Negro	
	Male	Female	Male	Female
October 1972				
14 to 34 years..................	32,944	34,826	3,690	4,255
14 and 15 years...............	4,217	4,077	550	552
16 to 19 years................	7,705	7,823	980	1,044
20 and 21 years...............	3,254	3,703	382	466
22 to 24 years................	4,826	5,331	538	640
25 to 34 years................	12,942	13,892	1,240	1,553
October 1966				
14 to 34 years..................	26,310	29,012	2,908	3,372
14 and 15 years...............	3,687	3,582	455	462
16 to 19 years................	6,668	6,978	786	847
20 and 21 years...............	2,251	2,875	270	332
22 to 24 years................	3,453	4,210	385	468
25 to 34 years................	10,251	11,367	1,012	1,263

Note: These figures are approximate levels of various population categories for use with Tables K, L, M and N in determining sampling errors of percentages and totals.