DOCUMENT RESUME

ED 296 705 IR 013 388

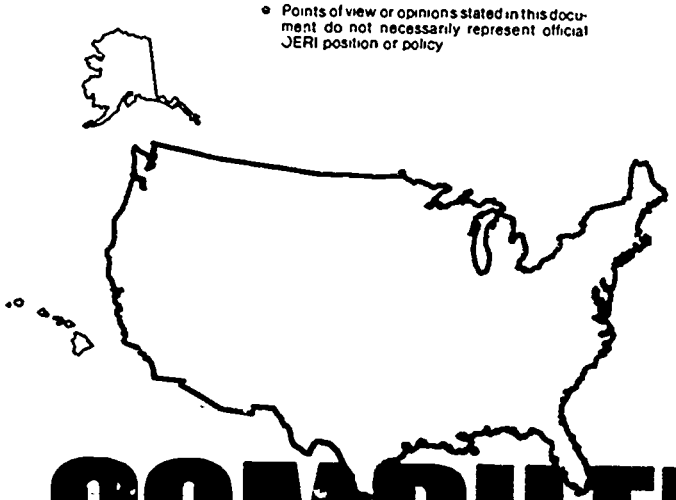
AUTHOR Kominski, Robert
INSTITUTION Bureau of the Census (DOC), Suitland, Md. Population Div.
TITLE Computer Use in the United States: 1984.
PUB DATE Mar 88
NOTE 44p.
AVAILABLE FROM Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.
PUB TYPE Statistical Data (110) -- Reports - Descriptive (141) -- Tests/Evaluation Instruments (160)
JOURNAL CIT Current Population Reports; Series P-23 n155 Mar 1988

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Computer Literacy; *Computers; *Family (Sociological Unit); *Individual Characteristics; National Surveys; Office Automation; Racial Factors; Sex Differences; *Socioeconomic Influences; *Use Studies

ABSTRACT

This report provides statistical information on computer use in the United States in 1984, including home, work, and school use, and use according to socioeconomic status, race, and sex. The data show that over 15 million American adults owned home computers, but only 53% actually use them. About 8% of U.S. households, or 6.98 million, had a computer in 1984, and households with school age children were three times more likely to have a computer. Students aged 10 to 13 were the most likely to use a computer at school. Among adults, 63% of the men and 43% of the women used the computer if it was present in the house. Households with incomes of $50,000 or more were the most likely to own a computer (23%), while households with incomes of $10,000 or less were the least likely (2%). Although blacks were less likely to have home computers, black children who did have them used them more than white children. Survey data are presented in three text tables and five detailed tables. Appendixes provide additional tables and information on the survey itself, including its reliability and the survey instrument. (EW)

CURRENT POPULATION REPORTS
Special Studies
Series P-23 No. 155



COMPUTER USE IN THE UNITED STATES: 1984

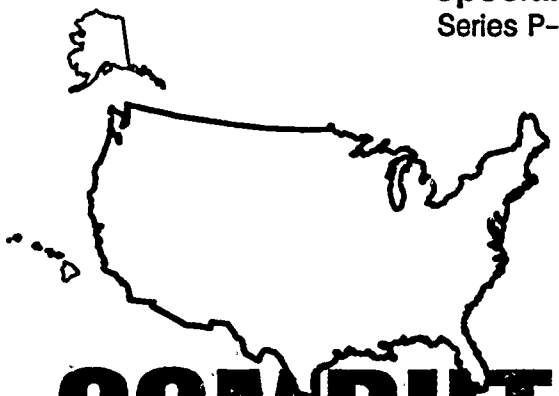
U.S. Department of Commerce
BUREAU OF THE CENSUS

Acknowledgments

This report was prepared in the Education and Social Stratification Branch of the Population Division, under the general direction of **Paul M. Siegel,** Chief. Overall direction was provided by **Arthur J. Norton,** Assistant Chief, Population Division.

Data collection was conducted by Bureau of the Census interviewers, under the overall direction of **Stanley D. Matchett,** Chief, Field Division. Computer programming was provided by **Phyllis C. Swanson,** and survey operations were coordinated by **Kathleen P. Creighton,** Demographic Surveys Division. Table preparation was provided by **Brenda R. Jeffries,** and statistical testing was performed by **Andrea A. Adams,** Population Division. **Rosalind R. Bruno** and **Phillip A. Salopek,** Population Division, reviewed the contents of the report. Statistical review of the text and appendix B were provided by **Janet Yax,** Statistical Methods Division. The staff of Publications Services Division, **Walter C. Odom,** Chief, provided publication planning, design, composition, editorial review, and printing, planning and procurement. The publication was edited and coordinated by **Paula Coupe.**

CURRENT POPULATION REPORTS
Special Studies
Series P-23 No. 155



COMPUTER USE IN THE UNITED STATES: 1984

By Robert Kominski

Issued March 1988

U.S. Department of Commerce
C. William Verity,
Secretary
Robert Ortner,
Under Secretary for Economic Affairs

BUREAU OF THE CENSUS
John G. Keane, Director

BUREAU OF THE CENSUS
John G. Keane, Director
C.L. Kincannon, Deputy Director
William P. Butz, Associate Director for Demographic Fields
Roger A. Herriot, Senior Demographic and Housing Analyst

POPULATION DIVISION
Paula J. Schneider, Chief

SUGGESTED CITATION

U.S. Bureau of the Census, Robert Kominski, Current Population Reports, Series P-23, No. 155, *Computer Use in the United States: 1984,* U.S. Government Printing Office, Washington, D.C., 1988.

For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Contents

Computer Use in the United States: 1984

HIGHLIGHTS

All percentages include 90 percent confidence intervals. For details of calculation and interpretation, see Appendix B, Source and Reliability of Estimates.

- In October 1984, 6,980,000, or 8.2 percent (±.6), of all U.S. households reported that they had a computer.
- Ownership of a computer was most likely in households with incomes of $50,000 or more (22.9 percent ±1.2), and least likely in households with incomes of $10,000 or less (1.7 percent ±.2).
- Among children ages 3 to 17, 15,542,000, or 30.2 percent (±.5) used a computer either at home or school (some in both places). At home, 15.3 percent (±.4) had a computer available, and of these children, 74.2 percent (±1.2) used it.
- About 31,099,000 persons ages 18 and above, 18.3 percent (±.2) of the adult population, reported that they used a computer somewhere—either at home, work or school (or some combination).
- Fifteen million adults (9.1 percent ±.2) had a computer at home, and of those about half (53.3 percent ±1.0) used it. Of the over 100 million employed adults, 24,172,000, or 24.6 percent (±.3) used a computer at work.
- By the fall of 1984, computers were a part of many lives: of the 221,268,000 persons ages 3 or above, 46,641,000—21.1 percent (±.2)—were reported to use a computer in some direct way.

INTRODUCTION

One of the most important technological innovations of the 20th century has been the development and use of the high-speed, multipurpose computer. While rudimentary precursors can be identified as much as 100 years earlier, the first modern multipurpose computer used in a large-scale daily operational context was the Univac I, purchased by the U.S. Census Bureau in 1951. The years since this first major application of computer technology have seen such a variety of changes and improvements, however, that early computers now seem simple by comparison. Advances in microelectronic circuitry have been one of the major innovations, allowing the physical size and cost of machines to dramatically decrease, while yielding far greater amounts of computing capacity at much faster rates of speed. While the Univac I was capable of carrying out about 2000 instructions per second (e.g., addition and division), typical large-scale computers of today can often perform in excess of 20 million instructions per second.

In the early 1970's, a series of major innovations occurred, highlighted by the development of microprocessors and the microcomputer. Although much smaller in size than conventional computing equipment then in use, these machines were still capable of performing many basic computing tasks. At first, these machines were primarily the domain of electronic and computer hobbyists, but as microelectronic technology and parts became more widely available, microcomputers started to be mass-produced. By the late 1970's several different brands of microcomputers were commercially available, and within a few years, numerous microcomputer companies were in business. In 1984, TIME magazine gave its "Man of the Year" award to the computer.

The "computer revolution", as some refer to it, has touched our lives in literally hundreds of different ways. In many respects, the role of the computer is transparent to us: we often do not interact directly with it, but merely see its end effects--electronic banking, for instance. For many of us, however, actual interaction with a computer is a part of our lives, be it at work, school, or home.

While some manufacturers provide estimates of how many computers they produce or sell, no overall market total exists. Some organizations keep inventories of the computers they own, but they do not always have reliable estimates of their use. Also, it is not known how many of the small "personal computers" that have been sold are in homes, as opposed to offices. With some work, one might be able to generate an estimate of how many machines are out there, but this would still not address the more fundamental question: "How many people are using them?". If computers are becoming more and more a part of our lives, we need to know how they are distributed, who uses them, and how they are being used. This report provides a first attempt at providing this information on a national level.

The tabulations in this report are produced from data collected in October 1984 as part of the Current Population Survey (CPS). The CPS, a monthly survey of the U.S. civilian noninstitutional population, is designed to provide estimates of the labor force and employment conditions in the Nation. In some months, additional questions are asked on special topics; in October 1984 the National Center for Education Statistics sponsored the inclusion of a series of items on computers. These questions concerned the availability of computers to persons at home and the use of computers when one was present at home, work, or school. Further information about the survey and the specific questions asked is provided in Appendix A, Survey Definitions and Explanations.

SUMMARY OF NATIONAL ESTIMATES

Computers may be used in any of several contexts. For children, use is possible both at home and school, while adults may also use a computer at work. The survey attempted to estimate use in each specific domain, as well as exposure and use overall regardless of setting. Several tables provide different pieces of information that tell the general story. For example, one might ask what proportion of households had computers; table 1 provides this information. In October 1984, 6,980,000, or 8.2 percent, of all U.S. households reported that they had a computer, with about 70 percent of those households having obtained the computer either in 1983 or 1984.[1] Ownership of a computer was most likely (22.9 percent) in households with yearly incomes of $50,000 or more, while only 1.7 percent of households with income below $10,000 reported ownership. Households with school-age children were three times as likely as those without to have a computer (16.0 vs. 5.1 percent). Finally, among all householders, those ages 35 to 44 were most likely (15.8 percent) to have a computer in their home.

Another way to look at computer use is in terms of the numbers of individuals who use them. The other tables of this report concentrate on use in this context, with separate tables and discussion for children and for adults. The basic results are summarized here. Table 2 shows that 15,542,000, or 30.2 percent of children ages 3 to 17 used a computer either at home or school (some in both places). At home, 15.3 percent had a computer available, and 74.2 percent of the children used it. In school, 28 percent of the 45.6 million students enrolled were reported to use a computer. (Note that this survey did not assess the number of students with a school computer available, but simply the number who used one at school.)

Table 4 shows similar access and use data for adults. About 31,099,000 persons ages 18 and above, 18.3 percent of the adult population, reported that they used a computer somewhere--either at home, work, or school (or some combination). About 15 million adults (9.1 percent) had a computer at home, and, of those over half (53.3 percent) used it. Of the over 100 million employed adults, 24,172,000, or 24.6 percent, used a computer at work, and 3,839,000 (30.8 percent) of the adults enrolled in school said they used one there. Clearly, by the fall of 1984, computers were a part of many lives. Of the 221,268,000 persons aged 3 or above, 46,641,000 (21.1 percent) were reported to use a computer in some direct way.

ACCESS AND USE BY CHILDREN

About 15 percent of all children 3 to 17 years of age had access to a computer at home, and of these, 74.2 percent used the machine. However, access and use might be expected to vary depending upon other life circumstances and conditions.

In terms of access, there were several significant differences except in access based on the age of children. Apart from very young children, 3 to 5 years of age, access ranged between 12.6 and 19.0 percent for single-year age groups between 6 and 17, with no clear trend notable.

For race groups, White children were most likely to have a computer at home (17.1 percent) and Black children least likely (6.1 percent). Hispanic children were also far less likely to have a home computer than non-Hispanic children (4.6 vs. 16.1 percent). Boys were more likely (16.8 percent) to have a home computer available than girls (13.6 percent).

In regional terms, children in the Northeast were most likely to have a computer in their home (19.3 percent), while children in the South were the least likely (12.3 percent).

The probability of having a computer at home increased significantly as the education of the householder increased. Only 3.5 percent of the children in households where the householder had 0 to 8 years of school had a home computer, compared with 30.4 percent of the children living with householders with 4 or more years of college. Similarly, there was a strong relationship between the presence of a home computer and reported family income. About 3.4 percent of the children in households with family income below $10,000 had a home computer, whereas 37 percent of those children in households with income above $50,000 had one.

[1] About 2.5 percent of the households did not respond to the survey items. Item nonresponse has not been removed by imputation; percentages in this report exclude nonresponse. Detailed tables 1-5 show the level of nonresponse for key items of computer access and use.

Finally, the children of householders in managerial and professional positions were the most likely of all general occupational groups to have a computer in their home. Many of these characteristics are not independent of one another, but the data show that there were real differences in the access of children to computers in the home.

Many of the differences that are apparent in access are less clear or vanish altogether when one concentrates on patterns of use. Columns 4 and 5 of table 2 show the usage patterns of children in homes where a computer is available. Overall, 74.2 percent of children with computers at home were reported to use them. While there are some differences among age groups, there is no simple pattern: use at home ranges from 71 to 83 percent for the single-year age groups from 6 to 17. There are no measured differences among race and Hispanic categories when use, instead of availability, is examined. Boys, however, are much more likely than girls to use a computer if one is in the home (80.3 vs. 66.4 percent). Regional differences in usage are detected only between the Northeast and South. In terms of householders' education, only those children of householders with little education (0-8 years) experienced significantly lower levels of usage. With respect to family income, there were no significant differences in use by children in income groups of $15,000 or more, while children in the $10,000-14,999 range had significantly lower levels of use from all income categories above it. The examination of differentials in both availability and use illustrate that most apparent differences are based on the ability and/or propensity to own a computer.

One mechanism for correcting differentials in access is the schools. Ideally, schools--offering equal access to all--may work to compensate for inequities that are a reflection of social background. Columns 9 and 10 of table 2 show the number and percentage of students who reported that they use a computer at school. In general, about 28 percent of all students said they use a computer at their school.

In terms of age groups, students 10 to 13 years old were the most likely to use a computer at school (ages 3 to 5, 6.4 percent; 6 to 9, 26.8 percent; 10 to 13, 37.8 percent; 14 to 17, 28.7 percent). Table A shows this higher use rate in terms of the middle grades 5 through 8 (where 10-to-13-year-olds are generally enrolled) in both public and private schools.

There are also significant differences in the use of computers at school based on Hispanic origin and sex, with non-Hispanics (28.9 percent) and boys (29.0 percent) exhibiting greatest levels of use, respectively. Use by Blacks (15.9 percent) is the lowest of any race group.

Among the regions, children in the Midwest showed the highest levels of school use (33.9 percent), while those in the South were lowest (21.3 percent).

Perhaps most notable is the relationship of school use with householders educational attainment and family income. In both cases, school use by children generally becomes more likely with increases in either householder's educational attainment or family income. Both of these phenomena indicate a possible indirect effect of family socioeconomic status on computer use through the quality and equipping of schools. Thus, while it might be expected that within schools equal use across population subgroups is promoted, observed differences may be due to factors outside, or between, schools.

One way of considering the indirect effect of family background as reflected across schools is by examining distinctions between public and private schools. Private school generally involves some direct monetary cost on the part of families, as does the acquisition of a computer. Both items (private schools and computers) might be viewed as investments families may make in furthering the education of their children. Consequently, differences in computer access that are cost-related may also be reflected by the public-private dimension.

Table A shows the levels of computer use by school children, distinguished by grade levels and type of school. In general, private school students have consistently higher computer use at home, at school, and in the combination of both locales. Only for school use in high school is the difference between public and private school students not statistically significant.

The final two columns of table 2 show the overall rates of computer use when both home and school are jointly examined. In general, about 30 percent of all children use computers, either at home or in school. Since some sociodemographic differences have been shown to exist in each locale, it is not surprising that these differences persist when they are considered together.

Most notable are the sex, race, and Hispanic origin differences, indicating greater overall usage patterns by males, Whites, and non-Hispanic children. In addition, the monotonic relationship of use with both family income and education of the householder is maintained. As noted earlier, however, these relationships may reflect the fact that the ability to afford a home computer is a fundamental force in determining who uses them.

In addition to the basic levels of access and use, it is possible to examine the ways children use computers as well as the frequency of use. Table 3 shows data for frequency and several different types of use of home computers. For most children, four kinds of uses are shown: video games, school-related activities, basic learning of the computer, and other activities. (Questions regarding the use of word processing

Table A. School and Home Computer Use by Public and Private School Students, Grades K-12: October 1984
(Numbers in thousands)

Type of school and grade	Total students	Use at school		Use at home		Home and school	
		Number	Percent	Number	Percent	Number	Percent
Public school:							
All grades	39,901	10,953	27.4	4,664	11.7	2,116	5.3
Grades K-4	14,722	3,236	22.0	1,401	9.5	570	3.9
Grades 5-8	12,382	4,383	35.4	1,679	13.6	903	7.3
Grades 9-12	12,797	3,334	26.1	1,584	12.4	643	5.0
Private school:							
All grades	4,320	1,382	32.0	761	17.6	396	9.2
Grades K-4	1,989	487	24.5	305	15.3	137	6.9
Grades 5-8	1,262	589	46.7	258	20.4	168	13.3
Grades 9-12	1,069	306	28.6	198	18.5	91	8.5

and household record activities were asked of persons ages 14 and older and are also shown here for children ages 14 to 17.)

Of the four uses, video games were reported most frequently (77.9 percent), however, "learning to use" was also a frequent response (71.4 percent). School-related use (34.8 percent) and "other" uses (18.5 percent) were not as commonly reported. Examining these different types of use across demographic subgroups, there are significant differences in video game and school use by sex, with both cases showing higher usage rates for boys. Overall, children with computers in their homes were reported to use them on average during parts of about 2.8 days per week. The frequency of use was significantly higher for Black children (3.8 days) than for Whites (2.8), and higher for boys (3.1 days) than for girls (2.4).

ACCESS AND USE BY ADULTS

Overall, access and use of computers by adults was somewhat less than that experienced by children; nevertheless, significant proportions of the adult population were involved with computers at some level in the fall of 1984. Tables 4 and 5 detail access and use patterns for persons ages 18 and above, similar to the detail for children shown in tables 2 and 3.

In terms of general use, 18.3 percent of the adult population used a computer somewhere--either at home, school, or work. In terms of home access, 9.1 percent of adults lived in a household where a computer was available. There was significant variation from this overall level along several different dimensions. For example, persons ages 35 to 44 were most likely to live in a household with a computer (16.8 percent), while persons age 65 and above were least likely (1.5 percent). At least part of this may be because persons in the 35-44 age group are among the most likely to have children at home. Similarly, access rates were high for persons who were living in a married-couple household (10.9 percent). Blacks, Hispanics and females were all less likely to have a computer present in their household than were adults not of these demographic statuses.

The probability of having a computer at home increased with both family income and the education of the individual, with 22.4 percent of persons in households with yearly incomes of $50,000 or more reporting ownership, and 17.6 percent of all persons with 4 or more years of college education living in a household where one was available. Across occupational categories a computer at home was most likely for persons who held managerial or professional positions (17.9 percent), while in terms of regional differences, persons in the South were the least likely to have a computer in their home.

Not all adults who had a computer in their home actually used it. Overall, 53.3 percent of all adults with a home computer reported using it. While some differences that exist in terms of access disappear when use at home is considered, others remain. Examination of the data for adults who have computers at home does not reveal different rates of use by race or Hispanic groups. Males, however, have rates of use (63.1 percent) that are substantially higher than those for women (42.8 percent), and use rates by persons age 25 to 34 are the highest of any age group examined (65.4 percent).

As with access, use also increases with the education of the individual; however, unlike access, use is just as likely for persons of the lowest family income category (53.7 percent) as it is for persons of the highest (55.7 percent), given that a home computer is available. In the context of occupations, home use is most likely for persons in managerial and professional postions (64.5 percent). While adults in the Northeast were among the most likely to have a computer in their home, they were also among the least likely to use it (49.8 percent).

Many adults also are exposed to computers in the course of their work. In October 1984, 24.6 percent of the adult population with jobs reported that they "directly used a computer at work." The question was worded in this way to discourage positive responses by persons who may benefit in their work from computers (i.e., a manager who receives daily computerized listings), but who do not directly interact with the computer (for example, by a keyboard).

In general, use of a computer at work was significantly more likely with higher levels of education. Among the general occupational categories, persons in managerial and professional positions (39.0 percent) and technical and administrative postions (38.7 percent) had by far the highest use rates at work.

Differences noted in the use of computers at work may reflect as much on the distribution of computers in the workplace as they do on the distribution of different persons across occupations. For example, higher rates of computer use in the workplace were reported by non-Hispanics (25 percent), persons aged 25 to 34 (29.4), and women (29.0).

In the case of women, the higher rate at work (which is not mirrored for all women in general) may be determined, in part, by the jobs women hold. Table B shows the numbers of employed adult men and women, detailed by occupation and industry. While the occupational category of "technical, sales, and administrative support" accounts for 19.3 percent of all working men, it represents 45.1 percent of all working women. Part of this is explained by the fact that the category includes such specific occupations as sales clerks, secretaries, and administrative clerical workers. Within this category, computer use at work was reported by 32.7 percent of males, and 39.1 percent of females.

The second panel of table B shows a similar male-female comparison for workers by general industry classifications. The category of "finance, insurance, and real estate" does not account for a large proportion of all workers (8.6 percent of women, 4.8 percent of men), but 60 percent of the women in this industry used a computer on their job, compared with 43.9 percent of men. Workers in this industry include persons such as bank tellers and data keyers.

The lack of data on specific types of work activities does not allow this point to be expanded here, but it should be noted that higher rates of computer use in an occupation or industry do not necessarily mean that those positions require higher skill levels or yield higher wages or prestige. This report addresses the general issue of rates of use and exposure; detailed analyses of types of use and job quality are also important issues concerning the impact of computers, but cannot be explored with these data.

Just as computer use at work is a more relevant concept for adults than children, use at school is somewhat less relevant when speaking about the

Table B. Computer Use at Work, by Sex, Occupation, and Industry: October 1984

(Persons aged 18 and above. Numbers in thousands)

Occupation and industry	Men				Women			
			Use computer at work				Use computer at work	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All persons	80,240	(X)	11,715	14.6	89,546	(X)	12,457	13.9
All persons with jobs	58,563	100.0	11,715	21.2	45,417	100.0	12,457	29.0
Occupation:								
Mangerial/professional	14,768	25.2	5,702	38.6	10,468	23.0	3,716	35.5
Technical, sales, and administrative support	11,324	19.3	3,706	32.7	20,492	45.1	8,022	39.1
Service	5,199	8.9	447	8.6	8,230	18.1	327	4.0
Precision production, craft, and repair	12,026	20.5	1,143	9.5	1,144	2.5	146	12.8
Operators, laborers, and fabricators	12,352	21.1	642	5.2	4,568	10.1	234	5.1
Farming, forestry, and fishing	2,894	4.9	75	2.6	515	1.1	12	2.3
Industry:								
Agriculture, forestry, and fisheries	2,672	4.6	110	4.1	629	1.4	53	8.4
Mining	784	1.3	171	21.8	143	0.3	95	66.4
Construction	6,353	10.8	307	4.8	626	1.4	143	22.8
Manufacturing	14,251	24.3	3,430	24.1	6,866	15.1	1,813	26.4
Transportation, communication, and other public utilities	5,528	9.4	1,066	19.3	1,891	4.2	997	52.7
Wholesale and retail trade	10,876	18.6	1,846	17.0	9,975	22.0	1,686	16.9
Finance, insurance, and real estate	2,798	4.8	1,227	43.9	3,889	8.6	2,338	60.1
rvices	12,299	21.0	2,662	21.6	19,597	43.1	4,500	23.0
blic administration	3,002	5.1	897	29.9	1,803	4.0	834	46.3

Table C. Computer Use by Part- and Full-Time College Students, by Year of Enrollment and Place of Use: October 1984

(Numbers in thousands)

Enrollment	Total students	Place of use							
		Home		School		Work		Anywhere	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Part-time:									
All years	4,219	541	12.8	898	21.3	1,577	37.4	2,136	50.6
1-2 years	1,872	199	10.6	323	17.3	573	30.6	826	44.1
3-4 years	1,044	152	14.6	250	23.9	409	39.2	588	56.1
5 or more years	1,302	190	14.6	325	25.0	595	45.7	724	55.6
Full-time:									
All years	8,086	682	8.4	2,776	34.3	683	8.4	3,323	41.1
1-2 years	4,124	341	8.3	1,258	30.5	202	4.9	1,515	36.7
3-4 years	2,868	208	7.2	1,096	38.2	266	9.3	1,274	44.4
5 or more years	1,094	133	12.2	422	38.6	215	19.7	534	48.8

adult population. Nevertheless, for those 13+ million adults who were in school (mostly college) in the fall of 1984, a substantial proportion, about 31 percent, were using a computer at school. Patterns of use in school indicate that use was more likely by persons of "Other" races (38.2 percent) and males (35.8). Table C shows information on computer use at home, school and work, differentiated by enrollment status (i.e., full-time, part-time). The table shows that while computer use in school was more likely for students who were enrolled full-time, part-time students experienced greater overall rates of use both at home and at work. When all three locations of use are considered together, part-time students were somewhat more likely to use a computer somewhere (50.6 percent) than were those enrolled full-time (41.1 percent). For both full-time and part-time college students, use of a computer at school was more likely at the third year and beyond than during the first two years of school. Nevertheless, the overall level of use for college students, regardless of location, was about 44 percent, indicating that over half of the current college population was receiving no exposure to computers on a routine basis.

The simultaneous consideration of all possible areas where individuals might use computers--home, work, and school--shows that about 18 percent of the adult population used a computer in at least one of these places. Usage rates were highest among persons aged 25 to 44, Whites, non-Hispanics, men, and single individuals. Computer use is positively associated with both education of the individual and family income. Patterns of use in any place were reported by persons working full-time, in managerial/professional and sales occupations; and in the finance, insurance and real estate industry category. In general, the data indicate that when all three locales of use are considered many disparities remain in terms of who uses computers. These distinctions do not stem from use patterns in a single place, but are often apparent in more than one setting.

In addition to the basic rates of use, we can also examine some of the purposes for which adults use their home computers (table 5). Six general uses and a residual "other" category are shown; persons were permitted to pick all responses that characterized the use of the home computer. The most popular choice was "learning to use" (59 percent), an obvious choice given the newness of the technology to most individuals. More specific activities, such as household record-keeping (40.2 percent), job-related activities (36.9), and word processing (32.9), were also chosen by substantial proportions of individuals. While "video games" was reported quite frequently (45 percent), school use (which could mean use either for the person individually or in assisting their child) was reported by a much smaller percentage (16) of all adults.

As might be expected, types of uses varied somewhat among different kinds of persons. Job-related uses were reported more frequently by older persons (ages 45 to 64), and individuals in managerial and professional occupations, while recreational uses (i.e., video games) were reported with greater frequency by younger persons and individuals living in large households. Overall, the median number of uses reported by adults was 1.8, and the median number of days per week during which the home computer was used was 2.6.

SUMMARY

Despite the short time that home computers have been with us, the extent of their diffusion and adoption has been somewhat remarkable. The analysis of access and use patterns as of the fall of 1984 shows

that a sizable proportion of the population, both young and old, were involved with computers directly, less than a decade after the introduction of microcomputers into the general retail market. The dissemination of computers, at least in the early stages represented by this survey, has not been uniform across the population, but has differentially affected the lives of subgroups of the population.

These data indicate that ownership and use of home computers are closely associated with many different characteristics, representing different kinds of persons, households and needs. The strong association of access and use with education and certain occupations identifies one group of users. Yet another condition, the presence of school-age children, reflects the role of computers as useful educational devices. Without doubt, one key factor limiting access is the cost of the technology, as the strong relationship between family income and home computer availability demonstrates. In general, there are fewer distinctions in terms of who uses a home computer, given that one is available, than there are in terms of which households have them.

Examination of use in other areas shows that many individuals gain exposure to computers in school or at work. At least some differences in school based availability may be due in fact to socioeconomic variability among the neighborhoods schools represent. Differences in access between students of private and public schools tend to support this notion.

At work, computer use may vary with the type of job, as differences by occupation and industry suggest. Without more detailed data on the specific uses of computers, however, it is not possible to determine the variation in the kinds of work that people in different types of jobs do with computers.

The data here suggest that large numbers of people have exposure to computers on a routine basis. Presumably, as cost considerations lessen (as they have since the time when the survey was undertaken), a major barrier to universal acquaintance with this technology should be removed, not only at home, but in schools and the workplace as well. Future studies of this topic will allow us to determine the progress of this technology's diffusion.

ADDITIONAL TABULATIONS

The tables presented in this report summarize a set of more detailed tabulations of these data. Three packages of detailed tabulations are available. These packages provide the same general information as the report tables, but the data are tabulated independently by gender, race and age groups. Package A presents data on computer access, use, types of use and frequency of use for children; package B presents this information for adults; package C presents these data for all students: elementary, secondary and post-secondary. Each tabulation package is available for $33 (reproduction costs). To place an order for one or more packages, specify the Computer Use Package(s) desired, include check for applicable amount (make checks payable to "Commerce-Census"), and send to:

Paul Siegel, Population Division, Bureau of the Census
Washington, D.C. 20233
(301)-763-5203

Computer Use Package A: Computer Use by Children (108 pages) $33

Computer Use Package B: Computer Use by Adults (180 pages) $33

Computer Use Package C: Computer Use by Students (147 pages) $33

Table 1. Households with Computers and Year of Purchase, by Presence of Children, Family Income, and Age of Householder: October 1984

(Numbers in thousands)

Subject	All households	Total with computer	Percent[1]	Year of purchase		No response
				1983 and 1984	Before 1983	
Total households	87,073	6,980	8.2	4,973	1,848	2,198
Household income:						
Less than $10,000	22,313	377	1.7	280	79	455
$10,000 to $14,999	12,612	445	3.6	330	91	219
$15,000 to $19,999	9,913	539	5.5	386	147	186
$20,000 to $24,999	8,632	711	8.4	516	179	153
$25,000 to $34,999	13,049	1,558	12.2	1,132	399	235
$35,000 to $49,999	9,306	1,589	17.4	1,125	429	163
$50,000 or more	6,447	1,443	22.9	998	423	143
Income not reported	4,800	318	7.6	206	98	638
Presence of children:						
Some children 6 to 17	24,914	3,901	16.0	2,777	1,056	502
No children 6 to 17	62,159	3,079	5.1	2,196	791	1,696
Age of householder:						
Under 25 years	5,769	288	5.1	210	64	95
25 to 34 years	19,575	1,869	9.7	1,390	433	385
35 to 44 years	17,147	2,639	15.8	1,837	748	403
45 to 54 years	12,745	1,281	10.4	903	359	384
55 years and over	31,836	904	2.9	632	243	931

[1]Nonrespondents not included in base.

Table 2. Use of Computers at Home and School, by Persons 3 to 17 Years Old: October 1984

(Numbers in thousands)

Characteristic	All persons	With computer at home					Presence of computer not reported	Enrolled in school				Uses computer any place	
		Total	Percent[2]	Uses it	Percent[2]	Does not		Total	Uses it	Percent[2]	Does not	Number	Percent
Total, 3 to 17 years	51,482	7,697	15.3	5,679	74.2	1,974	1,012	45,588	12,284	28.0	31,548	15,542	30.2
3 to 5 years	10,611	1,128	10.8	573	50.8	554	207	5,711	354	6.4	5,187	893	8.4
6 years	3,275	405	12.6	287	70.9	118	58	3,229	532	16.9	2,614	730	22.3
7 years	3,254	448	14.0	331	73.9	117	57	3,231	757	24.0	2,400	935	28.7
8 years	3,179	492	15.7	395	80.3	97	41	3,143	922	30.1	2,144	1,141	35.9
9 years	3,198	506	16.2	387	76.5	119	66	3,166	1,120	36.4	1,961	1,298	40.6
10 years	3,160	506	16.4	400	78.9	107	70	3,134	1,207	39.7	1,831	1,383	43.8
11 years	3,236	596	18.8	484	81.3	111	64	3,220	1,237	39.5	1,898	1,429	44.2
12 years	3,356	587	17.8	486	82.8	101	58	3,338	1,189	36.4	2,077	1,429	42.6
13 years	3,648	681	19.0	555	81.6	125	72	3,623	1,270	36.0	2,254	1,548	42.4
14 years	3,851	671	17.7	528	80.1	131	67	3,778	905	25.7	2,616	1,249	32.4
15 years	3,539	646	18.5	512	81.1	119	56	3,451	823	25.5	2,402	1,130	31.9
16 years	3,554	533	15.3	386	73.2	141	72	3,374	919	29.1	2,241	1,142	32.1
17 years	3,619	498	14.2	355	72.7	133	124	3,190	1,049	35.3	1,922	1,234	34.1
Race:													
White	41,915	7,048	17.1	5,186	74.0	1,818	770	37,124	10,827	30.3	24,964	13,782	32.9
Black	7,721	461	6.1	350	75.9	111	165	6,838	1,032	15.9	5,476	1,254	16.2
Other	1,846	188	10.6	143	76.1	45	77	1,626	426	27.8	1,108	505	27.4
Hispanic origin:													
Hispanic	4,266	191	4.6	128	67.4	62	109	3,638	634	18.2	2,846	717	16.8
Non-Hispanic	47,216	7,506	16.2	5,552	74.4	1,913	903	41,950	11,650	28.9	28,701	14,825	31.4
Sex:													
Male	26,285	4,334	16.8	3,453	80.3	848	477	23,225	6,485	29.0	15,900	8,384	31.9
Female	25,197	3,363	13.6	2,226	66.4	1,126	535	22,363	5,799	27.0	15,648	7,157	28.4
Uses computer at school	12,284	2,887	23.5	2,476	86.1	400	23	12,284	12,284	100.0	-	12,284	100.0
Uses computer at home[1]	5,679	5,679	100.0	5,679	100.0	-	-	5,519	2,476	45.1	3,012	5,679	100.0
For video games	4,423	4,423	100.0	4,423	100.0	-	-	4,302	1,910	44.6	2,371	4,423	100.0
For school assignment	1,977	1,977	100.0	1,977	100.0	-	-	1,973	1,158	59.0	806	1,977	100.0
To learn computers	4,057	4,057	100.0	4,057	100.0	-	-	3,981	1,919	48.5	2,038	4,057	100.0
Other use	1,048	1,048	100.0	1,048	100.0	-	-	1,012	518	51.5	487	1,048	100.0
Household type:													
Married couple	39,010	6,786	17.8	5,027	74.5	1,718	785	34,625	9,924	29.8	23,398	12,784	32.8
Female householder, no spouse present	10,518	743	7.2	540	72.9	201	173	9,313	1,952	21.8	6,997	2,270	21.6
Male householder, no spouse present	1,956	169	8.9	113	67.3	55	54	1,650	409	26.2	1,153	488	24.9
Region:													
Northeast	9,970	1,877	19.3	1,408	75.6	455	241	8,967	2,641	30.8	5,920	3,383	33.9
Midwest	13,288	2,069	15.9	1,545	75.3	506	250	11,788	3,845	33.9	7,464	4,684	35.2
South	17,930	2,166	12.3	1,558	72.2	601	263	15,840	3,258	21.3	12,059	4,270	23.8
West	10,294	1,584	15.8	1,169	73.9	412	258	8,993	2,539	29.4	6,085	3,204	31.1
Educational attainment of householder:													
Elementary: 0 to 8 years	5,680	196	3.5	121	62.1	74	113	4,860	842	18.2	3,789	908	16.0
High school: 1 to 3 years	6,807	331	4.9	244	73.9	86	119	5,818	1,194	21.5	4,359	1,348	19.8
High school: 4 years	19,516	2,291	12.0	1,674	73.6	600	377	17,169	4,432	26.7	12,142	5,431	27.8
College: 1 to 3 years	9,367	1,886	20.5	1,387	73.6	497	178	8,419	2,529	31.1	5,600	3,327	35.5
College: 4 years or more	10,112	2,993	30.4	2,254	75.9	717	255	9,323	3,286	36.7	5,657	4,527	44.8

Table 2. Use of Computers at Home and School, by Persons 3 to 17 Years Old: October 1984—Continued

(Numbers in thousands)

Characteristic	All persons	With computer at home					Presence of computer not reported	Enrolled in school				Uses computer any place	
		Total	Percent[2]	Uses it	Percent[2]	Does not		Total	Uses it	Percent[2]	Does not	Number	Percent
Employment status of householder:													
Employed	42,224	7,121	17.2	5,256	74.2	1,823	797	37,644	10,840	29.9	25,453	13,831	32.8
Full-time	39,609	6,873	17.7	5,079	74.3	1,753	766	35,390	10,276	30.1	23,835	13,171	33.3
Part-time	2,616	249	9.6	178	71.8	70	31	2,254	564	25.8	1,618	661	25.3
Unemployed	2,852	186	6.6	133	71.9	52	47	2,433	478	20.4	1,866	567	19.9
Not in labor force	6,406	390	6.3	290	74.6	99	168	5,510	966	18.6	4,229	1,143	17.8
Family income:													
Less than $10,000	10,733	360	3.4	252	70.2	107	200	8,927	1,581	18.5	6,982	1,751	16.3
$10,000 to $14,999	6,373	431	6.9	278	64.5	153	90	5,419	1,200	23.0	4,018	1,352	21.2
$15,000 to $19,999	5,880	535	9.3	408	76.8	123	112	5,107	1,304	26.4	3,627	1,558	26.5
$20,000 to $24,999	5,715	729	13.0	554	76.8	167	107	5,046	1,373	28.2	3,489	1,712	30.0
$25,000 to $34,999	9,473	1,818	19.4	1,337	73.9	472	110	8,540	2,640	31.8	5,653	3,414	36.0
$35,000 to $49,999	6,831	1,884	27.8	1,426	76.3	444	50	6,426	2,152	34.4	4,111	2,933	42.9
$50,000 or more	4,345	1,571	37.0	1,167	74.6	397	101	4,147	1,521	38.4	2,445	2,168	49.9
Income not reported	2,133	368	19.5	25	69.6	112	241	1,977	512	29.5	1,223	654	30.7
Household size:													
1 to 3 persons	10,396	1,283	12.6	979	76.7	297	180	9,062	2,268	26.0	6,456	2,858	27.5
4 and 5 persons	30,413	5,042	16.9	3,760	75.0	1,252	576	27,112	7,848	30.0	18,274	9,963	32.8
6 and 7 persons	8,244	1,101	13.7	774	70.7	321	191	7,323	1,746	25.0	5,244	2,201	26.7
8 persons or more	2,429	271	11.5	166	61.5	104	66	2,091	423	21.2	1,574	520	21.4
Occupation of householder:													
Managerial and professional	10,882	3,100	29.2	2,336	75.9	741	258	10,034	3,322	34.4	6,340	4,629	42.6
Technical, sales, and administrative support	9,099	1,670	18.6	1,203	72.3	462	137	8,258	2,476	31.1	5,492	3,174	34.9
Service	4,133	270	6.7	191	71.3	77	84	3,634	780	22.4	2,696	898	21.7
Precision production, craft, and repair	9,445	1,290	14.0	952	74.4	328	200	8,318	2,175	27.1	5,842	2,732	28.9
Operators, laborers, and fabricators	10,063	918	9.3	668	73.2	245	146	8,630	2,188	26.2	6,145	2,573	25.6
Farming, forestry, and fishing	1,974	117	6.0	80	68.4	37	26	1,663	472	29.2	1,147	512	25.9
Never worked/not in labor force/Armed Forces	5,905	334	5.8	250	75.1	83	160	5,051	873	18.3	3,886	1,023	17.3
Industry of householder:													
Agriculture	1,795	118	6.7	86	73.5	31	27	1,519	450	30.4	1,030	492	27.4
Mining	779	118	15.3	74	63.2	43	6	679	191	28.9	470	241	30.9
Construction	4,714	510	11.0	374	74.4	129	88	4,117	1,094	27.7	2,882	1,291	27.4
Manufacturing	11,873	2,077	17.8	1,551	75.0	516	227	10,493	2,855	28.2	7,257	3,736	31.5
Transportation, communication and other public utilities	4,663	703	15.3	553	79.7	141	65	4,221	1,222	29.9	2,889	1,553	33.3
Wholesale and retail trade	7,221	1,064	15.0	768	72.4	293	138	6,342	1,770	29.1	4,313	2,211	30.6
Finance, insurance, and real estate	2,099	436	21.1	312	71.9	122	28	1,920	616	33.1	1,247	805	38.4
Services	9,768	1,810	10.0	1,323	73.4	480	221	8,797	2,507	29.6	5,976	3,255	33.3
Forestry and fisheries	91	14	(B)	8	(B)	5	-	81	28	(B)	49	31	(B)
Public administration	2,573	514	20.4	381	74.4	131	52	2,367	679	29.9	1,589	904	35.1
Never worked/not in labor force/Armed Forces	5,905	334	5.8	250	75.1	83	160	5,051	873	18.3	3,886	1,023	17.3

B Base is less than 200,000 persons.
[1]Multiple uses allowed by respondents.
[2]Nonrespondents not included in base.

Table 3. Purposes and Frequency of Computer Use at Home by Persons 3 to 17 Years Old: October 1984

(Numbers in thousands)

Characteristic	All persons	Persons using computers at home	Uses reported										Median number of uses reported	Median days per week used
			Video games	Percent	School	Percent	Household records/ job related[2]	Word processing[3]	Learning to use	Percent	Other	Percent		
Total, 3 to 17 years old	51,482	5,679	4,423	77.9	1,977	34.8	104	370	4,057	71.4	1,048	18.5	1.5	2.8
3 to 5 years	10,611	573	409	71.4	62	10.8	-	-	355	62.0	117	20.4	1.1	2.1
6 years	3,275	287	210	73.2	67	23.3	-	-	199	69.3	42	14.6	1.3	2.4
7 years	3,254	331	263	79.5	77	23.3	-	-	212	64.0	64	19.3	1.3	2.6
8 years	3,179	395	327	82.8	95	24.1	-	-	287	72.7	85	21.5	1.5	2.8
9 years	3,198	387	317	81.9	109	28.2	-	-	301	77.8	79	20.4	1.6	3.0
10 years	3,160	400	304	76.0	126	31.5	-	-	311	77.8	91	22.8	1.6	2.7
11 years	3,236	484	402	83.1	187	38.6	-	-	384	79.3	98	20.2	1.6	3.0
12 years	3,356	486	394	81.1	177	36.4	-	-	377	77.6	93	19.1	1.6	3.1
13 years	3,648	555	457	82.3	212	38.2	-	-	438	78.9	116	20.9	1.6	3.1
14 years	3,851	528	412	78.0	229	43.4	24	92	354	67.0	88	16.7	1.7	3.0
15 years	3,539	512	399	77.9	233	45.5	30	113	351	68.6	74	14.5	1.7	3.0
16 years	3,554	386	278	72.0	194	50.3	20	92	254	65.8	63	16.3	1.8	2.9
17 years	3,619	355	251	70.7	208	58.6	30	74	234	65.9	39	11.0	1.7	2.8
Race:														
White	41,915	5,186	4,066	78.4	1,774	34.2	89	338	3,684	71.0	984	19.0	1.5	2.8
Black	7,721	350	254	72.6	152	43.4	7	21	263	75.1	45	12.9	1.5	3.8
Other	1,846	143	103	72.0	51	35.7	8	11	110	76.9	20	14.0	1.5	3.0
Hispanic origin:														
Hispanic	4,266	128	110	85.9	49	38.3	1	10	81	63.3	8	6.3	1.4	2.6
Non-Hispanic	47,216	5,552	4,312	77.7	1,928	34.7	103	360	3,976	71.6	1,040	18.7	1.5	2.8
Sex:														
Male	26,285	3,453	2,794	80.9	1,276	37.0	89	260	2,465	71.4	651	18.9	1.6	3.1
Female	25,197	2,226	1,629	73.2	701	31.5	15	110	1,592	71.5	397	17.8	1.4	2.4
Uses computer at school	12,264	2,476	1,910	77.1	1,158	46.8	50	181	1,919	77.5	518	20.9	1.7	3.1
Household type:														
Married couple	39,010	5,027	3,911	77.8	1,718	34.2	84	327	3,570	71.0	930	18.5	1.5	2.8
Female householder, no spouse present	10,516	540	432	80.0	222	41.1	14	33	394	73.0	92	17.0	1.6	3.0
Male householder, no spouse present	1,956	113	79	69.9	36	31.9	6	11	92	81.4	26	23.0	1.6	3.8
Region:														
Northeast	9,970	1,408	1,066	75.7	505	35.9	18	96	995	70.7	243	17.3	1.5	2.8
Midwest	13,288	1,545	1,215	78.6	515	33.3	24	81	1,089	70.5	326	21.1	1.5	2.9
South	17,930	1,558	1,188	76.3	530	34.0	26	83	1,117	71.7	274	17.6	1.5	2.7
West	10,294	1,169	954	81.6	426	36.4	35	111	854	73.1	205	17.5	1.6	2.9
Educational attainment of householder:														
Elementary: 0 to 8 year	5,680	121	87	71.9	42	34.7	9	16	102	84.3	14	11.6	1.6	3.3
High school: 1 to 3 years	6,807	244	191	78.3	88	36.1	7	19	159	65.2	34	13.9	1.4	3.4
High school: 4 years	19,516	1,674	1,304	77.8	567	33.9	42	90	1,168	69.8	249	14.9	1.5	3.0
College: 1 to 3 years	9,367	1,387	1,075	77.5	487	35.1	18	70	1,037	74.8	274	19.8	1.6	2.6
College: 4 years or more	10,112	2,254	1,784	78.3	793	35.2	28	175	1,590	70.5	477	21.2	1.6	2.7
Employment status of householder:														
Employed	42,224	5,256	4,118	78.3	1,820	34.6	85	346	3,774	71.8	993	18.9	1.5	2.8
Full-time	39,609	5,079	3,967	78.1	1,775	34.9	83	343	3,642	71.7	954	18.8	1.5	2.8
Part-time	2,616	178	151	84.8	45	25.3	2	4	133	74.7	39	21.9	1.6	3.0
Unemployed	2,852	133	98	72.2	56	42.1	4	9	83	62.4	13	9.8	1.4	3.2
In labor force	6,406	290	208	71.7	101	34.8	15	16	200	69.0	41	14.1	1.4	3.2

Table 3. Purposes and Frequency of Computer Use at Home by Persons 3 to 17 Years Old: October 1984—Continued

(Numbers in thousands)

Characteristic	All persons	Persons using computers at home	Uses reported										Median number of uses reported	Median days per week used
			Video games	Percent	School	Percent	Household records/ job related[2]	Word processing[2]	Learning to use	Percent	Other	Percent		
Family income:														
Less than $10,000	10,733	252	203	80.6	73	29.0	10	20	169	67.1	43	17.1	1.5	3.5
$10,000 to $14,999	6,373	278	199	71.6	93	33.5	4	14	209	75.2	40	14.4	1.4	2.8
$15,000 to $19,999	5,880	408	297	72.8	152	37.3	8	5	293	71.8	41	10.0	1.4	2.9
$20,000 to $24,999	5,715	554	423	76.4	137	24.7	9	30	372	67.1	89	16.1	1.4	2.7
$25,000 to $34,999	9,473	1,337	1,041	77.9	427	31.9	23	49	1,009	75.5	243	18.2	1.5	2.7
$35,000 to $ 49,999	6,831	1,426	1,142	80.1	529	37.1	26	106	1,066	74.8	301	21.1	1.7	2.8
$50,000 or more	4,345	1,167	909	77.9	467	40.0	21	124	767	65.7	222	19.0	1.6	2.8
Income not reported	2,133	257	209	81.3	98	38.1	4	23	172	66.9	69	26.8	1.7	2.9
Household size:														
1 to 3 persons	10,396	979	763	77.9	362	37.0	31	64	754	77.0	203	20.7	1.6	2.8
4 and 5 persons	30,413	3,760	2,926	77.8	1,306	34.7	56	254	2,700	71.8	724	19.3	1.5	2.8
6 and 7 persons	8,244	774	609	78.7	242	31.3	12	44	492	63.6	112	14.5	1.4	2.8
8 persons or more	2,429	166	125	75.3	66	39.8	5	8	110	66.3	9	5.4	1.4	3.2
Occupation of householder:														
Managerial and professional	10,882	2,336	1,826	78.2	845	36.2	24	182	1,672	71.6	466	19.9	1.6	2.7
Technical, sales, and administrative support	9,099	1,203	953	79.2	449	37.3	34	92	865	71.9	236	19.6	1.6	2.8
Service	4,133	191	168	88.0	53	27.7	2	7	135	70.7	24	12.6	1.5	3.0
Precision production, craft, and repair	7,445	952	694	72.9	305	32.0	18	44	692	72.7	163	17.1	1.4	2.8
Operatives, laborers, and fabricators	10,063	668	538	80.5	203	30.4	12	25	464	69.5	98	14.7	1.5	3.0
Farming, forestry, and fishing	1,974	80	67	83.8	31	38.8	-	3	57	71.3	22	27.5	1.7	2.8
Never worked/ not in labor force/Armed Forces	5,905	250	176	70.4	92	36.8	13	16	172	68.8	39	15.6	1.4	3.2
Industry of householder:														
Agriculture	1,795	86	74	86.0	33	38.4	-	4	65	75.6	21	24.4	1.7	2.8
Mining	779	74	53	71.6	14	18.9	1	2	60	81.1	12	16.2	1.4	2.8
Construction	4,714	374	282	75.4	109	29.1	16	16	258	69.0	58	15.5	1.4	3.0
Manufacturing	11,873	1,551	1,235	79.6	545	35.1	19	90	1,092	70.4	306	19.7	1.5	2.7
Transportation, communication and other public utilities	4,663	553	421	76.1	178	32.2	15	33	436	78.8	108	19.5	1.6	3.1
Wholesale, and retail trade	7,221	768	599	78.0	294	38.3	17	60	541	70.4	131	17.1	1.6	3.0
Finance, insurance, and real estate	2,099	312	240	76.9	111	35.6	7	26	224	71.8	64	20.5	1.6	2.7
Service	9,768	1,323	1,035	78.2	482	36.4	13	95	917	69.3	240	18.1	1.5	2.7
Forestry and fisheries	91	8	3	(B)	-	(B)	-	6	-	(B)	5	(B)	1.4	2.5
Public administration	2,573	381	304	79.8	120	31.5	3	29	286	75.1	63	16.5	1.6	2.8
Never worked/ not in labor force/Armed Forces	5,905	250	176	70.4	92	36.8	13	16	172	68.8	39	15.6	1.4	3.2

B Base is less than 200,000 persons.
[1]Multiple uses allowed by respondents.
[2]This category of use not offered to persons 3-13 years old.

Table 4. Use of Computers at Home, School, and Work by Persons 18 Years and Older: October 1984

(Numbers in thousands)

Characteristic	All persons	With computer at home					Presence of computer not reported	Enrolled in school				With a job				Uses computer any place	
		Total	Percent[2]	Uses it	Percent[2]	Does not		Total	Uses it	Percent[2]	Does not	Total	Uses it	Percent[2]	Does not	Number	Percent
Total, 18 years old and over	169,786	14,999	9.1	7,757	53.3	6,796	4,362	13,293	3,839	30.8	8,632	103,980	24,172	24.6	74,160	31,099	18.3
18 to 21 years	15,387	1,483	9.8	744	52.3	679	392	6,423	1,967	32.6	4,061	8,958	1,246	14.7	7,244	3,439	22.4
22 to 24 years	12,644	844	6.8	496	60.2	328	263	2,187	679	32.9	1,387	9,133	2,275	26.3	6,385	3,043	24.1
25 to 34 years	40,227	4,126	10.5	2,621	65.4	1,387	847	3,114	903	31.2	1,995	31,121	8,760	29.4	21,027	10,580	26.3
35 to 44 years	30,623	5,005	16.8	2,508	51.3	2,377	746	1,083	217	21.2	805	24,136	6,488	28.3	16,399	7,832	25.6
45 to 54 years	22,246	2,142	9.9	880	42.3	1,199	661	318	53	17.3	254	16,290	3,386	22.1	11,905	3,852	17.3
55 to 64 years	22,052	1,020	4.8	401	42.0	554	706	119	19	(B)	88	11,366	1,859	17.7	8,653	2,095	9.5
65 years old and over	26,607	398	1.5	108	28.4	272	747	47	1	(B)	43	2,976	159	5.9	2,547	259	1.0
Race:																	
White	146,693	13,782	9.6	7,151	53.4	6,236	3,581	11,172	3,269	31.0	7,266	90,826	21,795	25.3	64,399	27,940	19.0
Black	18,403	780	4.4	406	54.0	346	553	1,536	367	26.1	1,037	10,212	1,724	18.3	7,684	2,259	12.3
Other	4,690	437	9.8	200	48.3	214	228	585	203	38.2	329	2,942	653	23.9	2,077	900	12.3
Hispanic origin:																	
Hispanic	9,362	372	4.1	165	45.6	197	290	696	177	28.0	456	5,643	863	16.4	4,389	1,091	11.7
Non-Hispanic	160,424	14,627	9.4	7,592	53.5	6,599	4,072	12,597	3,662	30.9	8,177	98,337	23,310	25.0	69,772	30,008	18.7
Sex:																	
Male	80,240	7,717	9.9	4,748	63.1	2,772	2,124	6,635	2,224	35.8	3,994	58,563	11,715	21.2	43,672	15,605	19.4
Female	89,546	7,282	8.3	3,009	42.8	4,025	2,238	6,658	1,615	25.8	4,639	45,417	12,457	29.0	30,488	15,494	17.3
Marital status:																	
Married	103,110	10,813	10.7	5,432	51.7	5,069	2,494	3,095	753	25.9	2,154	65,491	15,483	24.9	46,672	18,724	18.2
Single	35,946	2,912	8.3	1,678	59.5	1,143	995	9,360	2,900	33.0	5,878	23,901	5,386	23.9	17,171	8,617	24.0
Divorced, widowed, or separated	30,730	1,274	4.3	648	52.6	584	874	838	185	23.5	601	14,589	3,303	24.3	10,317	3,758	12.2
Uses computer at work	24,172	4,735	19.6	3,440	73.8	1,220	29	2,273	916	41.2	1,306	24,172	24,172	100.0	-	24,172	100.0
Uses computer at home[1]	7,757	7,757	100.0	7,757	100.0	-	-	1,259	598	48.1	644	6,288	3,440	55.2	2,791	7,757	100.0
Video games	3,526	3,526	100.0	3,526	100.0	-	-	594	281	48.0	304	2,863	1,319	46.7	1,508	3,526	100.0
School assignments	1,239	1,239	100.0	1,239	100.0	-	-	731	451	62.1	275	875	524	60.2	347	1,239	100.0
Household records	3,117	3,117	100.0	3,117	100.0	-	-	365	173	48.5	184	2,626	1,632	62.6	976	3,117	100.0
Job activities	2,860	2,860	100.0	2,860	100.0	-	-	314	164	53.1	145	2,702	2,050	76.1	644	2,860	100.0
Word processing	2,549	2,549	100.0	2,549	100.0	-	-	455	242	54.0	206	2,157	15	2.3	640	2,549	100.0
Learning to use	4,575	4,575	100.0	4,575	100.0	-	-	737	361	49.1	374	3,676	1,855	50.9	1,792	4,575	100.0
Other use	1,841	1,841	100.0	1,841	100.0	-	-	237	131	55.5	105	1,213	774	64.1	434	1,841	100.0
Household type:																	
Married couple	116,980	12,421	10.9	6,185	51.3	5,860	2,939	8,717	2,677	32.8	5,487	73,856	16,818	24.0	53,206	22,182	19.0
Female householder, no spouse	34,080	1,280	3.9	641	51.7	598	862	2,956	670	24.2	2,093	17,298	4,527	27.8	11,737	5,373	15.8
Male householder, no spouse	18,726	1,298	7.1	921	73.4	338	561	1,621	491	31.8	1,052	12,826	2,827	23.5	9,217	3,544	18.9
Region:																	
Northeast	36,867	3,639	10.2	1,726	49.8	1,737	1,096	2,978	910	33.6	1,802	22,187	5,168	24.9	15,562	6,830	18.5
Midwest	42,063	3,664	8.9	1,952	54.5	1,629	1,068	3,378	1,073	33.6	2,116	25,638	5,776	23.7	18,547	7,639	18.2
South	57,531	4,377	7.7	2,198	51.6	2,061	1,015	3,940	1,066	28.4	2,689	35,134	7,626	22.7	25,906	9,547	16.6
West	33,325	3,318	10.3	1,880	57.9	1,369	1,183	2,997	789	28.0	2,026	21,021	5,603	28.4	14,146	7,083	21.3
Educational attainment:																	
Elementary: 0 to 8 years	20,655	280	1.4	40	15.5	218	548	101	7	9.1	70	6,211	148	2.6	5,520	183	0.9
High school: 1 to 3 years	21,888	703	3.3	252	37.5	420	536	1,126	226	22.1	796	10,239	599	6.3	8,981	1,015	4.6
High school: 4 years	67,440	5,091	7.7	2,157	44.0	2,750	1,721	3,091	719	25.0	2,156	43,331	8,002	19.6	32,881	10,102	15.0
College: 1 to 3 years	30,952	3,962	13.2	2,225	57.6	1,640	848	6,414	2,098	34.6	3,963	21,452	6,356	31.1	14,088	9,130	29.5
College: 4 years or more	28,851	4,963	17.6	3,084	63.6	1,768	713	2,561	788	32.4	1,647	22,746	9,068	41.7	12,690	10,669	37.0

Table 4. Use of Computers at Home, School, and Work by Persons 18 Years and Older: October 1984—Continued

(Numbers in thousands)

Characteristic	All persons	With computer at home					Presence of computer not reported	Enrolled in school				With a job				Uses computer any place	
		Total	Percent[2]	Uses it	Percent[2]	Does not		Total	Uses it	Percent[2]	Does not	Total	Uses it	Percent[2]	Does not	Number	Percent
Employment status:																	
Employed	103,980	11,393	11.2	6,288	56.8	4,783	2,450	7,476	2,069	29.1	5,035	103,980	24,172	24.6	74,160	28,057	27.0
Full-time	85,457	9,397	11.3	5,365	58.7	3,770	2,095	3,737	881	25.1	2,631	85,457	22,072	27.3	58,869	24,585	28.8
Part-time	18,523	1,996	11.0	933	47.9	1,013	355	3,739	1,188	33.1	2,404	18,523	2,100	12.1	15,291	3,472	18.7
Unemployed	7,463	491	6.7	254	52.8	227	138	637	147	24.4	456	-	-	-	-	393	5.3
Not in labor force	58,343	3,115	5.5	1,215	40.5	1,785	1,774	5,180	1,623	34.1	3,142	-	-	-	-	2,649	4.5
Family income:																	
Less than $10,000	35,358	653	1.9	344	53.7	297	777	2,393	692	30.9	1,550	12,714	1,144	9.7	10,673	1,968	5.6
$10,000 to $14,999	23,105	820	3.6	389	48.8	408	412	1,253	300	25.4	883	12,592	1,771	14.9	10,092	2,227	9.6
$15,000 to $19,999	19,208	1,069	5.7	546	53.0	485	390	1,133	310	29.2	750	12,177	2,331	20.3	9,177	2,910	15.1
$20,000 to $24,999	17,393	1,415	8.3	704	51.4	665	344	1,258	323	27.5	850	12,050	2,550	22.2	8,911	3,182	18.3
$25,000 to $34,999	27,906	3,290	12.0	1,689	52.8	1,508	513	2,285	670	30.9	1,499	20,499	5,544	28.1	14,173	6,926	24.8
$35,000 to $49,999	21,432	3,579	17.0	1,854	53.6	1,606	366	2,248	678	31.5	1,473	16,566	5,352	33.5	10,603	6,716	31.3
$50,000 or more	15,831	3,471	22.4	1,881	55.7	1,495	352	2,038	689	36.0	1,225	11,985	4,494	39.0	7,016	5,841	36.9
Income not reported	9,553	701	8.4	351	51.4	332	1,218	684	176	30.5	401	5,396	987	21.9	3,515	1,330	13.9
Household size:																	
1 to 3 persons	108,407	6,611	6.3	3,884	60.4	2,543	2,813	6,620	1,816	28.9	4,457	62,757	15,581	26.3	43,684	18,714	17.3
4 and 5 persons	49,270	6,909	14.6	3,328	48.9	3,476	1,215	5,262	1,607	32.7	3,303	34,054	7,524	23.3	24,815	10,658	21.6
6 and 7 persons	9,589	1,133	12.1	471	42.6	635	241	1,117	321	31.3	704	5,800	924	16.9	4,556	1,458	15.2
8 persons or more	2,519	256	10.6	74	34.3	142	93	294	95	36.1	168	1,368	143	11.5	1,105	269	10.7
Occupation:																	
Managerial and professional	26,594	4,648	17.9	2,930	64.5	1,611	640	2,177	616	29.7	1,456	25,236	9,418	39.0	14,713	10,669	40.1
Technical, sales, and administrative support	35,031	4,001	11.7	2,097	54.0	1,784	782	3,316	956	30.2	2,210	31,815	11,728	38.7	18,562	13,122	37.5
Service	15,746	995	6.5	362	37.6	600	393	1,684	426	27.1	1,144	13,429	774	6.2	11,621	1,429	9.1
Precision production, craft, and repair	14,420	1,210	8.6	635	54.3	535	337	555	150	29.5	359	13,170	1,289	10.3	11,184	1,845	12.8
Operators, laborers, and fabricators	19,741	1,191	6.2	569	49.1	589	469	982	303	32.5	628	16,920	877	5.5	14,988	1,588	8.0
Farming, forestry, and fishing	3,893	179	4.7	84	48.3	90	87	188	48	26.8	131	3,409	87	2.7	3,093	180	4.6
Never worked/not in labor force/Armed Forces	54,358	2,773	5.3	1,079	40.5	1,587	1,654	4,391	1,338	33.1	2,706	-	-	-	-	2,264	4.2
Industry:																	
Agriculture	3,576	165	4.7	75	46.6	86	86	149	49	35.0	91	3,159	124	4.2	2,824	198	5.5
Mining	1,061	126	12.1	71	56.3	55	16	29	8	29.6	19	927	266	29.5	636	293	27.6
Construction	7,897	617	8.0	335	55.6	268	184	272	91	35.1	168	6,979	449	6.8	6,137	735	9.3
Manufacturing	23,522	2,508	10.9	1,483	60.9	951	566	1,133	349	33.3	699	21,116	5,244	26.2	14,767	5,968	25.4
Transportation, communication, and other public utilities	8,031	883	11.2	472	55.1	384	175	396	127	33.9	248	7,418	2,062	29.3	4,987	2,352	29.3
Wholesale, and retail trade	23,730	2,287	9.9	1,166	52.9	1,039	554	2,514	720	30.0	1,684	20,851	3,531	18.0	16,136	4,825	20.3
Finance, insurance, and real estate	7,096	797	11.5	423	54.4	355	155	464	120	27.2	321	6,686	3,565	55.5	2,856	3,724	52.5
Service	35,184	4,245	12.3	2,336	56.4	1,805	808	3,588	942	27.7	2,455	31,896	7,162	23.8	22,901	8,748	24.9
Forestry and fisheries	165	15	(B)	4	(B)	11	2	5	1	(B)	4	142	38	(B)	97	38	(B)
Public administration	5,167	585	11.7	313	55.1	255	162	351	93	28.1	238	4,804	1,731	38.0	2,821	1,952	37.8
Never worked/ not in labor force/Armed Forces	54,358	2,773	5.3	1,079	40.5	1,587	1,654	4,391	1,338	33.1	2,706	-	-	-	-	2,264	4.2

B Base is less than 200,000 persons.
[1]Multiple uses allowed by respondents
[2]Unrespondents not included in base

Table 5. Purposes and Frequency of Computer Use at Home by Persons 18 Years and Over: October 1984

(Numbers in thousands)

Characteristic	All persons	Persons using computers at home	Uses reported[1]														Median number of uses reported	Median days per week used
			Video games	Percent	School		Household records	Percent	Job related	Percent	Word processing	Percent	Learning to use	Percent	Other			
					Enrolled	Not enrolled												
Total, 18 years old and over	169,786	7,757	3,526	45.5	731	508	3,117	40.2	2,860	36.9	2,549	32.9	4,575	59.0	1,481		1.8	2.6
18 to 21 years	15,387	744	463	62.2	284	20	98	13.2	78	10.5	178	23.9	399	53.6	117		1.5	2.6
22 to 24 years	12,644	496	264	53.2	102	27	196	39.5	147	29.6	147	29.6	284	57.3	96		1.8	2.9
25 to 34 years	40,227	2,621	1,266	48.3	231	194	1,141	43.5	1,005	38.3	852	32.5	1,590	60.7	517		1.9	2.7
35 to 44 years	30,623	2,508	1,129	45.0	96	194	1,017	40.6	1,018	40.6	866	34.5	1,489	59.4	483		1.8	2.4
45 to 54 years	22,246	880	272	30.9	11	57	414	47.0	422	48.0	337	38.3	512	58.2	162		1.8	2.6
55 to 64 years	22,052	401	112	27.9	8	13	198	49.4	169	42.1	146	36.4	236	58.9	70		1.7	2.7
65 years old and over	26,607	108	20	18.5	-	4	54	50.0	19	17.6	23	21.3	66	61.1	35		1.3	2.7
Race:																		
White	146,693	7,151	3,222	45.1	659	443	2,879	40.3	2,660	37.2	2,387	33.4	4,201	58.7	1,350		1.8	2.6
Black	18,403	406	216	53.2	43	52	179	44.1	128	31.5	85	20.9	248	61.1	91		1.9	2.7
Other	4,690	199	88	44.2	29	12	59	29.6	72	36.2	76	38.2	126	63.3	40		1.8	2.1
Hispanic origin:																		
Hispanic	9,362	165	71	43.0	12	16	64	38.8	48	29.1	45	27.3	102	61.8	22		1.5	2.8
Non-hispanic	160,424	7,592	3,455	45.5	719	492	3,053	40.2	2,812	37.0	2,504	33.0	4,472	58.9	1,458		1.8	2.6
Sex:																		
Male	80,240	4,748	2,289	48.2	487	271	2,044	43.0	2,034	42.8	1,560	32.9	2,793	58.8	1,002		1.9	2.8
Female	89,546	3,009	1,238	41.1	244	237	1,073	35.7	826	27.5	989	32.9	1,782	59.2	478		1.6	2.2
Marital status:																		
Married	103,110	5,432	2,479	45.6	269	383	2,336	43.0	2,025	37.3	1,739	32.0	3,230	59.5	1,015		1.8	2.5
Single	35,946	1,678	794	47.3	436	78	478	28.5	544	32.4	560	33.4	931	55.5	333		1.8	2.9
Divorced, widowed, or separated	30,730	648	253	39.0	27	66	303	46.8	291	44.9	250	38.6	414	63.9	132		2.1	3.0
Uses computer at work	24,172	3,440	1,319	38.3	263	261	1,632	47.4	2,050	59.6	1,503	43.7	1,855	53.9	774		2.2	2.9
Household type:																		
Married couple	116,980	6,185	2,927	47.3	580	389	2,400	33.8	2,135	34.5	1,928	31.2	3,619	58.5	1,144		1.7	2.5
Female household, no spouse present	34,080	641	279	43.5	56	82	232	36.2	235	36.7	196	30.6	400	62.4	124		1.8	2.7
Male household, no spouse present	18,726	931	320	34.4	94	57	485	52.1	490	52.6	425	45.6	556	59.7	213		2.2	3.1
Region:																		
Northeast	38,867	1,726	801	46.4	162	101	599	34.7	617	35.7	459	26.6	966	56.0	333		1.6	2.6
Midwest	42,063	1,952	957	49.0	198	111	754	38.6	643	32.9	599	30.7	1,239	63.5	391		1.8	2.4
South	57,531	2,198	1,026	46.7	194	141	906	41.2	773	35.2	659	30.0	1,266	57.6	413		1.7	2.6
West	33,325	1,880	743	39.5	177	155	858	45.6	827	44.0	832	44.3	1,104	58.7	342		2.1	2.8
Educational attainment:																		
Elementary: 0 to 8 years	20,655	40	18	45.0	2	2	8	20.0	8	20.0	10	25.0	22	55.0	5		1.4	4.5
High school: 1 to 3 years	21,888	252	156	61.9	39	11	66	26.2	20	7.9	39	15.5	129	51.2	29		1.2	2.8
High school: 4 years	67,440	2,157	1,202	55.7	127	114	748	34.7	442	20.5	456	21.1	1,371	63.6	339		1.5	2.5
College: 1 to 3 years	30,952	2,225	1,074	48.3	337	130	951	42.7	707	31.8	678	30.5	1,373	61.7	473		1.9	2.6
College: 4 years or more	28,851	3,084	1,076	34.9	225	251	1,345	43.6	1,683	54.6	1,365	44.3	1,679	54.4	636		2.0	2.7
Employment status:																		
Employed	103,980	6,288	2,863	45.5	473	403	2,626	41.8	2,702	43.0	2,157	34.3	3,676	58.5	1,213		1.9	2.6
Full-time	85,457	5,355	2,425	45.3	253	375	2,364	44.1	2,429	45.4	1,860	34.7	3,106	58.0	1,072		1.9	2.7
Part-time	18,523	933	438	46.9	219	28	262	28.1	274	29.4	297	31.8	570	61.1	141		1.7	2.5
Unemployed	7,463	254	124	48.8	26	36	88	34.6	42	16.5	68	26.8	163	64.2	47		1.6	2.9
Not in labor force	58,343	1,215	540	44.4	233	70	404	33.3	115	9.5	323	26.6	736	60.6	221		1.5	2.4

Table 5. Purposes and Frequency of Computer Use at Home by Persons 18 Years and Over: October 1984—Continued

(Numbers in thousands)

Characteristic	All persons	Persons using computers at home	Uses reported[1]													Median number of uses reported	Median days per week used
			Video games	Percent	School		Household records	Percent	Job related	Percent	Word processing	Percent	Learning to use	Percent	Other		
					Enrolled	Not enrolled											
Family income:																	
Less than $10,000	35,358	344	175	50.9	73	28	124	36.0	86	25.0	99	28.8	242	70.3	58	1.8	3.2
$10,000 to $14,999	23,105	389	188	48.3	36	24	172	44.2	149	38.3	115	29.6	262	67.4	78	1.9	2.9
$15,000 to $19,999	19,208	546	258	47.3	36	30	213	39.0	166	30.4	127	23.3	365	66.8	88	1.7	2.9
$20,000 to $24,999	17,393	704	381	54.1	58	47	277	39.3	212	30.1	184	26.1	436	61.9	133	1.8	2.6
$25,000 to $34,999	27,906	1,689	846	50.1	117	122	682	40.4	531	31.4	456	27.0	1,008	59.7	349	1.7	2.6
$35,000 to $49,999	21,432	1,854	843	45.5	177	121	723	39.0	751	40.5	665	35.9	1,120	60.4	368	1.9	2.6
$50,000 or more	15,831	1,881	684	36.4	209	99	798	42.4	832	44.2	785	41.7	936	49.8	350	1.8	2.5
Income not reported	9,553	351	151	43.0	26	37	130	37.0	133	37.9	119	33.9	206	58.7	56	1.7	2.3
Household size:																	
1 to 3 persons	108,407	3,884	1,538	39.6	353	251	1,832	47.2	1,628	41.9	1,443	37.2	2,372	61.1	764	2.0	2.8
4 and 5 persons	49,270	3,328	1,665	50.0	288	221	1,122	33.7	1,087	32.7	969	29.1	1,923	57.8	627	1.7	2.4
6 and 7 persons	9,589	471	276	58.6	72	34	135	28.7	132	28.0	119	25.3	239	50.7	79	1.5	2.5
8 persons or more	2,519	74	47	63.5	18	1	29	39.2	12	16.2	18	24.3	41	55.4	11	1.8	2.3
Occupation:																	
Managerial and professional	26,594	2,930	1,101	37.6	196	248	1,317	44.9	1,652	56.4	1,278	43.6	1,633	55.7	620	2.1	2.7
Technical, sales, and administrative support	35,031	2,097	954	45.5	196	107	832	39.7	748	35.7	642	30.6	1,188	56.7	375	1.7	2.6
Service	15,746	382	214	59.1	54	15	113	31.2	57	15.7	78	21.5	237	65.5	53	1.5	2.5
Precision production, craft, and repair	14,420	635	364	57.3	28	31	275	43.3	202	31.8	140	22.0	422	66.5	119	1.8	2.4
Operators, laborers, and fabricators	19,741	569	356	62.6	57	41	196	34.4	78	13.7	112	19.7	395	69.4	109	1.6	2.7
Farming, forestry, and fishing	3,896	84	40	47.6	9	2	30	35.7	34	40.5	17	20.2	54	64.3	7	1.5	2.8
Never worked/not in labor force/Armed Forces	54,358	1,079	496	46.0	192	63	354	32.8	89	8.2	282	26.1	646	59.9	197	1.5	2.4
Industry:																	
Agriculture	3,576	75	28	37.3	6	3	31	41.3	40	53.3	20	26.7	46	61.3	5	1.6	2.9
Mining	1,061	71	44	62.0	3	5	34	47.9	26	36.6	27	38.0	42	59.2	15	2.1	2.6
Construction	7,897	335	182	54.3	18	15	150	44.8	146	43.6	93	27.8	229	68.4	51	2.0	2.5
Manufacturing	23,522	1,483	705	47.5	96	78	684	46.1	621	41.9	466	31.4	842	56.8	338	1.9	2.6
Transportation, communication, and other public utilities	8,031	472	236	50.0	31	27	242	51.3	144	30.5	133	28.2	323	68.4	.81	1.9	2.7
Wholesale and retail trade	23,730	1,166	591	50.7	125	62	398	34.1	348	29.8	306	26.2	663	56.9	206	1.6	2.6
Finance, insurance, and real estate	7,096	423	164	38.8	29	19	192	45.4	179	42.3	151	35.7	229	54.1	91	1.9	2.5
Service	35,184	2,336	920	39.4	212	213	892	38.2	1,177	50.4	974	41.7	1,364	58.4	442	1.9	2.7
Forestry and fisheries	165	4	-	(B)	-	-	2	(B)	3	(B)	3	(B)	3	(B)	1	(B)	(B)
Public administration	5,167	313	159	50.8	18	23	139	44.4	86	27.5	93	29.7	188	60.1	54	1.7	2.5
Never worked/not in labor force/Armed Forces	54,358	1,079	496	46.0	192	63	354	32.8	89	8.2	282	26.1	646	59.9	197	1.5	2.4

B Base is less than 200,000 persons.
[1]Multiple uses allowed by respondents.
BBase is less than 200,000 persons

Appendix A. Survey Definitions and Explanations

Population coverage. The figures in this report for October 1984 are sample survey data and related to the civilian noninstitutional population of the 50 States and the District of Columbia.

Introduction of 1980 census population controls. The estimation procedure used for this survey involves 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 are based on civilian noninstitutional population counts from the decennial censuses and are updated with statistics on births, deaths, immigration, and emigration and statistics on the strength of the Armed Forces. Data published for 1972 through 1980 were based on independent population estimates derived by updating the 1970 decennial census counts. Starting with the data collected in the October 1981 Current Population Survey (CPS), independent estimates were based on civilian noninstitutional population controls for age, race, and sex established by the 1980 Decennial Census.

The April 1980 census population count differed somewhat from the independent estimates for April 1980 derived by updating 1970 census population figures. The April 1980 census count of the civilian noninstitutional population was 222,420,441, compared with the 1970 census based figure of 217,400,244 used for the CPS. Basically, this difference had little impact on summary or proportional measures, such as medians and percent distributions; however, use of the new controls could have significant effect on the absolute numbers.

Presence of a computer. The first respondent in the household was asked if there was a computer in that household, and if so, in what year it was purchased. (See appendix C for facsimile of questionnaire items on computer use.)

Use of computers. Each adult individual (ages 14 and above) was asked if they used a computer at work (if they were reported to be working or with a job), at school (if they were reported to be enrolled), and at home (if they were reported to live in a household where there was a computer). Interviewers preceded these questions with a statement specifying that the concept of use referred to "direct or 'hand's on' use of computers with typewriter-like keyboards...questons do NOT refer to hand-held computers or computer games which have a typewriter keyboard." Each question of use (work, school, home) asked, "does...directly use a computer" at the given locale. Children (ages 3 to 13) were asked about use at school (if enrolled) and at home (if a computer was present). The same concept of "direct use" was employed in the questions for children.

Kinds of computer use at home. For individuals who responded that a home computer did exist and that they did use it, an additional question asked for what purposes the computer was used. Response categories were read by the interviewer, and all choices that elicited a positive reply were marked. Four responses (video games, school assignments, learning to use the computer, and other uses) were read to children. Three additional responses (household record keeping, taxes, etc.; job or business related activities; and wordprocessing), were asked of adults.

Frequency of computer use at home. Both children and adults who had a computer at home and reported using it were asked how many days per week on average they had used the computer, during the last month. The amount of time per use was not asked.

School enrollment The school enrollment statistics from the current survey are based on replies to the enumerator's inquiry as to whether the person was enrolled in school. 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 graded public, parochial, or other private school in the regular school system. Such schools include nursery schools, kindergartens, elementary schools, high schools, colleges, universities, and professional schools. Attendance may be on either a full-time or part-time basis and during the day or night. Thus, regular schooling is that which may advance a person toward an elementary or high school diploma, or a college, university, or professional school degree. Children enrolled in nursery schools and kindergarten are included in the enrollment figures for regular schools, and are also shown separately.

Special schools are those which are not in the regular school system, such as trade schools or business colleges. Persons attending special schools are not included in the enrollment figures.

Persons enrolled in classes which do not require physical presence in school, such as correspondence courses or other courses of independent study, and in training courses given directly on the job, are also excluded from the count of those enrolled in school, unless such courses are being counted for credit at a regular school.

College enrollment The college enrollment statistics are based on replies to the enumerator's inquiry as to whether the person was attending or 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, except those who have left for the remainder of the term. Thus, regular college enrollment includes those persons attending a 4-year or 2-year college, university, or professional school (such as medical or law school) in courses that may advance the student toward a recognized college or university degree (e.g., BA or MA). Attendance may be either full time or part time, during the day or night.

Two-year and 4-year colleges. 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) or a 4-year college or university. Students in the fourth academic year of college or higher were assumed to be in a 4-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 officals 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 at his last birthday.

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

Hispanic 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.

Persons of Hispanic origin are 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, or Mexicano were combined into the one category-Mexican. Persons of Hispanic origin may be of any race.

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

The category "other marital status" includes persons who are single (never married), separated, divorced, or widowed.

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.

Family head. In the CPS, the term "head of family" is used to refer to persons maintaining the household. This practice was discontinued in surveys conducted after the 1980 Census of Population. However, in surveys taken prior to the 1980 Census of Population, women were not classified as the "head of family" if their husbands were present.

Head versus householder. In the 1980 census, the Bureau of the Census discontinued the use of the terms "head of household" and "head of family." Instead, the terms "householder" and "family householder" were used. Recent social changes resulted in greater sharing of household responsibilities among the adult members and, therefore, made the term "head" inappropriate in the analysis of household and family data. Specifically, the Bureau reconsidered its longtime practice of always classifying the husband as the head when he and his wife are living together.

In the 1980 census, the householder was the first adult household member listed on the census questionnaire. The instructions called for listing first the person (or one of the persons) in whose name the

home is owned or rented. If a home is owned jointly by a married couple, either the husband or the wife was listed first, thereby becoming the reference person, or householder, to whom the relationship of other household members was recorded. The same procedure was followed in the CPS surveys conducted after 1980 census. Therefore, the Bureau is publishing the responses on relationship as given in the CPS—husband or wife could be the family householder.

Family income. In this report, family income is derived from a single question asked of the household respondent when a household first enters the sample and is updated on the anniversary of entry. Income includes money income from jobs; net income from business, farm, or rent; pensions; dividends; interest; Social Security payments; and any other money income. The income of nonrelatives living in the household in excluded, but the income of all family members 14 years old and over, including those temporarily living away, is included. It should be noted that while characteristics of the person, such as age and marital status, and the composition of families refer to the date of the interview, family income statistics refer to receipts over a 12-month period starting 12 to 16 months prior to the interview.

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 in broad, fixed income intervals. Income data collected in the March supplement to the CPS are based on responses to 11 direct questions asked about each person 14 years old and over and identifying 23 different sources of income in 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.

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

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

Midwest— 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.

Symbols. The following symbols are used in the tables:

- Represents zero or rounds to zero.

B The base of the derived figure is less than 200,000.

X Not applicable.

NA Not available.

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.

Appendix B. Source and Reliability of Data

SOURCE OF DATA

The estimates in this report are based primarily on data obtained in October 1984 from the Current Population Survey (CPS) conducted by the Bureau of the Census and from supplementary questions to the CPS. The monthly CPS deals mainly with labor force data for the civilian noninstitutional population. Questions relating to labor force participation are asked about each member in every sample household. In addition, in October 1984, supplementary questions were asked about computer use. For this report, persons in the Armed Forces living off post or with their families on post are also included.

Current Population Survey (CPS). The present CPS sample was selected from the 1980 decennial census files with coverage in all 50 States and the District of Columbia. The sample is continually updated to reflect new construction. The 1984 CPS sample was located in 629 areas comprising 1,148 counties, independent cities, and minor civil divisions in the Nation. In this sample, approximately 61,500 occupied households were eligible for interview. Of this number, about 2,500 occupied units were visited but interviews were not obtained because the occupants were not found at home after repeated calls or were unavailable for some other reason.

CPS estimation procedure. The estimation procedure used in this survey involved the inflation of the weighted sample results to independent estimates of the total civilian noninstitutional population of the United States by age, race, sex, and Hispanic/ non-Hispanic categories. These independent estimates are based on statistics from the 1980 Decennial Census of Population; statistics on births, deaths, immigration, emigration; and statistics on the strength of the Armed Forces.

RELIABILITY OF ESTIMATES

Since the CPS estimates were 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 questionnaires, instructions, and enumerators. There are two types of errors possible in an estimate based on a sample survey: sampling and nonsampling. The accuracy of a survey result depends on both types of errors, but the full extent of the nonsampling error is unknown. Consequently, particular care should be exercised in the interpretation of figures based on a relatively small number of cases or on small differences between estimates. The standard errors provided for the CPS estimates primarily indicate the magnitude of the sampling error. They also partially measure the effect of some nonsampling errors in responses and enumeration, but do not measure any systematic biases in the data. (Bias is the difference, averaged over all possible samples, between the sample estimates and the desired value.)

Nonsampling variability. Nonsampling errors can be attributed to many sources, e.g., inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness on the part of respondents to provide correct information, inability to recall information, errors made in collection such as in recording or coding the data, errors made in processing the data, errors made in estimating values for missing data, and failure to represent all units with the sample (undercoverage).

Undercoverage in the CPS results from missed housing units and missed persons within sample households. Overall undercoverage, as compared with the level of the 1980 decennial census, is about 7 percent. It is known that CPS undercoverage varies with age, sex, and race. Generally, undercoverage is larger for males than for females and larger for Blacks and other races combined than for Whites. Ratio estimation to independent age-sex-race-Hispanic population controls, as described previously, partially corrects for the bias due to survey undercoverage. However, biases exist in the estimates to the extent that missed persons in missed households or missed persons in interviewed households have different characteristics from those of interviewed persons in the same age-sex-race-Hispanic group. Further, the independent population controls used have not been adjusted for undercoverage in the 1980 census.

For additional information on nonsampling error including the possible impact on CPS data when known, refer to Statistical Policy Working Paper 3, *An*

Error Profile: Employment as Measured by the Current Population Survey, Office of Federal Statistical Policy and Standards, U.S. Department of Commerce, 1978 and Technical Paper 40, *The Current Population Survey: Design and Methodology,* Bureau of the Census, U.S. Department of Commerce.

Sampling variability. The standard errors given in the following tables are primarily measures of sampling variability, that is, of the variations that occurred by chance because a sample rather than the entire population was surveyed. The sample estimate and its standard error enable one to construct a confidence interval, a range that would include the average results of all possible samples with a known probability. For example, if all possible samples were selected, each of these being surveyed under essentially the same general conditions and using the same sample design, and if an estimate and its standard error were calculated from each sample, then approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples.

The average estimate derived from all possible samples is or is not contained in any particular computed interval. However, for a particular sample, one can say with specified confidence that the average estimate derived from all possible samples is included in the confidence interval.

Some statements in the report may contain estimates followed immediately by a number in parentheses. For those statements one has only to add to and subtract from the estimate the number in parentheses to calculate upper and lower bounds of the 90 percent confidence interval. For example, if a statement contains the phrase "grew by 1.7 percent (± 1.0)" the 90-percent confidence interval for the estimate, 1.7 percent, would be from 0.7 percent to 2.7 percent.

Standard errors may also be used to perform hypothesis testing, a procedure for distinguishing between population parameters using sample estimates. The most common type of hypothesis appearing in this report is that the population parameters are different. An example of this would be comparing the number of children using computers to the number of adults using computers.

Tests may be performed at various levels of significance, where a level of significance is the probability of concluding that the characteristics are different when, in fact, they are identical. All statements of comparison in the text have passed a hypothesis test at the 0.10 level of significance or better. This means that, for most differences cited in the text, the absolute value of the estimated difference between characteristics is greater than 1.6 times the standard error of the difference.

Comparability of data. Data obtained from the CPS and other sources are not entirely comparable. This is due in large part to differences in interviewer training and experience and in 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.

Note when using small estimates. Summary measures (such as medians and percent distributions) are shown only when the base is 75,000 or greater. Because of the large standard errors involved, there is little chance that summary measures would reveal useful information when computed on a smaller base. Estimated numbers are shown, however, even though the relative standard errors of these numbers are larger than those for corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each data user's needs. Also, care must be taken in the interpretation of small differences. For instance, even a small amount of nonsampling error can cause a borderline difference to appear significant or not, thus distorting a seemingly valid hypothesis test.

Standard error tables and their use. In order to derive standard errors that would be applicable to a large number of estimates and could be prepared at a moderate cost, a number of approximations were required. Therefore, instead of providing an individual standard error for each estimate, generalized sets of standard errors are provided for various types of characteristics. As a result, the sets of standard errors provided give an indication of the order of magnitude of the standard error of an estimate rather than the precise standard error.

The figures presented in tables B-1 through B-4 are approximations to the standard errors of various estimates for persons, families and households shown in this report. To obtain the approximate standard error for a specific characteristic, the appropriate standard error in tables B-1 through B-4 must be multiplied by the factor for that characteristic given in table B-5. These factors must be applied to the generalized standard errors in order to adjust for the combined effect of the sample design and the estimating procedure on the value of the characteristic.

Standard errors for intermediate values not shown in the generalized tables of standard errors (B-1 through B-4) may be approximated by linear interpolation.

Two parameters (denoted "a" and "b") are used to calculate standard errors for each type of characteristic; they are presented in table B-5. These parameters were used to calculate the standard errors in tables B-1 through B-4 and to calculate the factors in table

Table B-1. Standard Errors of Estimated Numbers

(Numbers in thousands)

Size of estimate	Total, White, and non-Hispanic	Black and other	Hispanic
10	5	5	5
25	8	8	7
50	11	11	11
100	15	16	15
250	24	25	25
500	34	36	39
1,000	48	50	62
5,000	106	105	233
10,000	149	136	442
25,000	227	135	(X)
50,000	301	(X)	(X)
100,000	362	(X)	(X)
125,000	364	(X)	(X)
150,000	349	(X)	(X)

X Not applicable.

Note: For regional estimates, multiply the above standard errors by 0.94, 0.95, 0.94, and 0.90 for the Northeast, Midwest, South, and West, respectively. For a particular characteristic, see table B-5 for the appropriate factor to apply to the above standard errors.

B-5. They also may be used directly to calculate the standard errors for estimated numbers and percentages. Methods for computation are given in the following sections.

Standard errors of estimated numbers. The approximate standard error, S_x, of an estimated number shown in this report can be obtained in two ways. It may be obtained by use of the formula

$$S_x = fs \qquad (1)$$

where f is the appropriate factor from table B-5, and s is the standard error on the estimate obtained by interpolation from table B-1. Alternatively, the standard error may be approximated by formula (2) from which the standard errors in table B-1 were calculated. Use of this formula will provide more accurate results than the use of formula (1) above.

$$S_x = \sqrt{ax^2 + bx} \qquad (2)$$

Here x is the size of the estimate, and a and b are the parameters in table B-5 associated with the particular characteristic. When calculating standard errors for numbers from cross-tabulations involving different

Table B-2. Standard Errors of Estimated Percentages: Total, White, and Non-Hispanic

Base of estimated percentage (thousands)	Estimated percentage							
	1 or 99	2 or 98	5 or 95	10 or 90	20 or 80	25 or 75	35 or 65	50
10	4.8	6.7	10.5	14.4	19.2	20.8	22.9	24.0
25	3.0	4.3	6.3	9.1	12.2	13.2	14.5	15.2
50	2.1	3.0	4.7	6.4	8.6	9.3	10.3	10.8
100	1.5	2.1	3.3	4.6	6.1	6.6	7.2	7.6
250	1.0	1.4	2.1	2.9	3.8	4.2	4.6	4.8
500	0.7	1.0	1.5	2.0	2.7	2.9	3.2	3.4
1,000	0.5	0.7	1.0	1.4	1.9	2.1	2.3	2.4
5,000	0.2	0.3	0.5	0.6	0.9	0.9	1.0	1.1
10,000	0.2	0.2	0.3	0.5	0.6	0.7	0.7	0.8
25,000	0.10	0.13	0.2	0.3	0.4	0.4	0.5	0.5
50,000	0.07	0.10	0.2	0.2	0.3	0.3	0.3	0.3
100,000	0.05	0.07	0.10	0.14	0.2	0.2	0.2	0.2
125,000	0.04	0.06	0.09	0.13	0.2	0.2	0.2	0.2
150,000	0.04	0.05	0.09	0.12	0.2	0.2	0.2	0.2

Note: For a particular characteristic, see table B-5 for the appropriate factor to apply to the above standard errors.
For regional estimates, multiply the above standard errors by 0.94, 0.95, 0.94 and 0.90 for the Northeast, Midwest, South, and West, respectively.

Table B-3. Standard Errors of Estimated Percentages: Black and Other Races

Base of estimated percentage (thousands)	Estimated percentage							
	1 or 99	2 or 98	5 or 95	10 or 90	20 or 80	25 or 75	35 or 65	50
10	5.1	7.1	11.1	15.3	20.4	22.1	24.3	25.5
25	3.2	4.5	7.0	9.7	12.9	14.0	15.4	16.1
50	2.3	3.2	5.0	6.8	9.1	9.9	10.9	11.4
100	1.6	2.3	3.5	4.8	6.4	7.0	7.7	8.1
250	1.0	1.4	2.2	3.1	4.1	4.4	4.9	5.1
500	0.7	1.0	1.6	2.2	2.9	3.1	3.4	3.6
1,000	0.5	0.7	1.1	1.5	2.0	2.2	2.4	2.6
5,000	0.2	0.3	0.5	0.7	0.9	1.0	1.1	1.1
10,000	0.2	0.2	0.4	0.5	0.6	0.7	0.8	0.8
25,000	0.10	0.14	0.2	0.3	0.4	0.4	0.5	0.5

Note: For a particular characteristic, see table B-5 for the appropriate factor to apply to the above standard errors.
For regional estimates, multiply the above standard errors by 0.94, 0.95, 0.94 and 0.90 for the Northeast, Midwest, South, and West, respectively.

characteristics, use the factor or set of parameters for the characteristic which will give the largest standard error.

Illustration of the computation of the standard error of an estimated number. Text table A shows that there were 39,901,000 students in public school. Using formula (2), and the parameter, a = -0.000010 and b = 2,312 from table B-5, the estimate of the standard error is

$$S_x = \sqrt{(-0.000010)(39{,}901{,}000)^2 + (2{,}312)(39{,}901{,}000)} = 276{,}000^1$$

The 90-percent confidence interval for the number of students in public school is 39,459,400 to 40,342,600 (using 1.6 times the standard error). Therefore, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 90 percent of all possible samples.

Standard errors of estimated percentages. The reliability of an estimated percentage, computed using sample data for both numerator and denominator, depends upon both the size of the percentage and the size of the total upon which this 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. When the numerator and denominator of the percentage are in different categories, use the factors or parameters from table B-5 indicated by the numerator. The approximate standard error,

[1]Using formula (1), the appropriate factor from table B-5 and a standard error obtained by interpolation from table B-1, the approximate standard error is (1.0) (271,000) = 271,000.

Table B-4. Standard Errors of Estimated Percentages: Hispanic

Base of estimated percentages (thousands)	Estimated percentage							
	1 or 99	2 or 98	5 or 95	10 or 90	20 or 80	25 or 75	35 or 65	50
10	6.2	8.7	13.6	18.7	24.9	27.0	29.7	31.1
25	3.9	5.5	8.6	11.8	15.7	17.0	18.8	19.7
50	2.8	3.9	6.1	8.4	11.1	12.0	13.3	13.9
100	2.0	2.8	4.3	5.9	7.9	8.5	9.4	9.8
250	1.2	1.7	2.7	3.7	5.0	5.4	5.9	6.2
500	0.9	1.2	1.9	2.6	3.5	3.8	4.2	4.4
1,000	0.6	0.9	1.4	1.9	2.5	2.7	3.0	3.1
5,000	0.3	0.4	0.6	0.8	1.1	1.2	1.3	1.4
10,000	0.2	0.3	0.4	0.6	0.8	0.8	0.9	1.0

Note: For a particular characteristic, see table B-5 for the appropriate factor to apply to the above standard errors.
For regional estimates multiply the above standard errors by 0.94, 0.95, 0.94 and 0.90 for the Northeast, Midwest, South, and West, ectively.

S(x,p), of an estimated percentage can be obtained by use of the formula:

$$S_{(x,p)} = fs \qquad (3)$$

In this formula, f is the appropriate factor from table B-5 and s is the standard error on the estimate from tables B-2, B-3, or B-4. Alternatively, the standard error may be approximated by the following formula from which the standard errors in tables B-2, B-3 and B-4 were calculated. Use of this formula will give more accurate results than use of formula (3) above.

$$S_{(x,p)} = \sqrt{\frac{b}{x} p\,(100-p)} \qquad (4)$$

Here x is the size of the subclass of persons or households which is the base of the percentage, p is the percentage (0 is the parameter in table B-5 associated with the particular characteristic in the numerator of the percentage.

Illustration of the computation of the standard error of a percentage Suppose that of the 8,085,000 full-time college students, 3,325,000 or 41.1 percent, use a computer anywhere. From table B-5, the appropriate "b" parameter is 2,312. Using formula (4), the approximate standard error of 41.1 percent is

$$S_{(x,p)} = \sqrt{(2{,}312/8{,}085{,}000)\,(41.1)\,(100-41.1)} = 0.8 \text{ percent.}^2$$

This means that the 90-percent confidence interval for the percentage of full-time students using a computer anywhere is from 39.8 to 42.4 percent, i.e., 41.1 ± (1.6 x 0.8).

Standard error of a difference. For a difference between two sample estimates, the standard error is approximately equal to

$$S_{(x-y)} = \sqrt{S_x^2 + S_y^2} \qquad (5)$$

where Sx and Sy are the standard errors of the estimates x and y, respectively. The estimates can be of numbers, percentages, ratios, etc. This 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 (negative) correlation between the two characteristics, the formula will overestimate (underestimate) the true standard error.

Illustration of the computation of the standard error of a difference. Suppose that there were 683,000 full-time college students using computers at home and that there were 541,000 part-time college students using computers at home. The apparent difference is 142,000. Using formula (2) and the appropriate parameters from table B-5, the approximate standard errors of these two estimates are 40,000 and 35,000, respectively.[3] Therefore, from formula (5), the approximate standard error of the estimated difference of 142,000 persons is

$$S_{(x-y)} = \sqrt{(40{,}000)^2 + (35{,}000)^2} = 53{,}000.$$

This means that the 90-percent confidence interval for the true difference between full-time college students using computers at home and part-time college students using computers at home is from 57,200 to 226,800. Therefore, a conclusion that the average estimate of the difference derived from all possible samples lies within a range computed in this way would be correct for roughly 90 percent of all possible samples. Since this interval does not contain zero, we can conclude with 90 percent confidence that the number of full-time college students using a computer at home is greater than the number of part-time college students using a computer at home.

[2] Using formula (3), the appropriate factor from table B-5 (1.0), and a standard error from table B-1, B-2 or B-3, the approximete standard error is (1.0) (1.1) = 1.1 percent.

[3] $\sqrt{(-0.000010)\,(683{,}000)^2 + (2{,}312)\,(683{,}000)} = 40{,}000$, and $\sqrt{(-0.000010)\,(541{,}000)^2 + (2{,}312)\,(541{,}000)} = 35{,}000$.

of the difference derived from all possible samples lies within a range computed in this way would be correct for roughly 90 percent of all possible samples. Since this interval does not contain zero, we can conclude with 90 percent confidence that the number of full-time college students using a computer at home is greater than the number of part-time college students using a computer at home.

Table B-5. Standard Error Parameters and Factors

Characteristic	Parameter		f factor
	a	b	
Persons			
Total, White, and non-Hispanic:			
Enrolled in school	-0.000010	2,312	1.0
Household type, age of householder, presenceof children	-0.000115	1,480	1.4
Unemployed	-0.000015	2,206	1.0
Black and other:			
Enrolled in school	-0.000075	2,600	1.0
Household type, age of householder, presence of children	-0.000186	6,426	1.6
Unemployed	-0.000073	2,536	1.0
Hispanic:			
Enrolled in school:			
Levels	+0.001744	2,131	1.0
Percentages	(X)	3,873	1.0
Household type, age of householder, presence of children			
Levels	-0.000330	5,673	1.6
Percentages	(X)	11,414	1.7
Unemployed	-0.000108	2,087	1.0
Families			
Total, White, and non-Hispanic:			
Household type, age of householder, presence of children	-0.000010	1,778	0.9
Household income	-0.000010	1,896	0.9
Employment status and occupation of householder	-0.000025	2,013	0.9
Unemployed	-0.000015	2,206	1.0
Black and other:			
Household type, age of householder, presence of children	-0.000046	1,606	0.8
Household income	-0.000060	2,067	0.9
Employment status and occupation of householder	-0.000058	2,013	0.9
Unemployed	-0.000073	2,536	1.0
Hispanic origin:			
Household type, age of householder, presence of children	-0.000106	1,820	0.9
Household income	-0.000120	2,067	1.0
Employment status and occupation of householder	-0.000108	1,863	0.9
Unemployed	-0.000108	2,087	1.0

X Not applicable.

Note: For regional estimates multiply the "a" and "b" parameters by 0.88, 0.91, 0.89 and 0.81 for the Northeast, Midwest, South, and West, respectively.

Appendix C. Computer Ownership and Use Questions: October 1984 CPS

Asked of persons 14 years and over.

LEAD IN: The next set of questions has to do with . . .'s DIRECT or "HAND'S ON" use of computers with typewriter-like keyboards. These questions do NOT refer to hand-held computers or computer games which do not have a typewriter keyboard.

NOTE: Ask items 44 & 45 once of first respondent in household. Transcribe directly for following respondents and begin with 46.

44. Is there a computer in this household?
- Yes ○ *(Ask 45)*
- No ○ *(Fill 46)*

45. In what year was the computer purchased? *(If more than one, answer for the most recent.)*
- 1984 ○
- 1983 ○
- 1982 ○
- 1981 ○
- 1980 ○
- Before 1980 ○
- Don't know ○

46. CHECK ITEM: Entry in item 20A or 21B *(Working or with a job)*
- Yes ○ *(Ask 47)*
- No ○ *(Skip to 48)*

47. Does . . . directly use a computer at work?
- Yes ○
- No ○

48. CHECK ITEM: Entry of "Yes" in 30 *(Enrolled in school)*
- Yes ○ *(Ask 49)*
- No ○ *(Skip to 50)*

49. Does . . . directly use a computer at school?
- Yes ○
- No ○

50. CHECK ITEM: Entry of "Yes" in 44 *(Computer in household)*
- Yes ○ *(Ask 51)*
- No ○ *(Fill 54)*

51. Does . . . directly use a computer at home?
- Yes ○ *(Ask 52)*
- No ○ *(Fill 54)*

52. At home does . . . use the computer for: *(Read categories – mark all that apply)*
- Video Games. . . . ○
- School assignments. . ○
- Household record keeping, taxes, etc. ○
- Job or business related activities. . . ○
- Wordprocessing . ○
- Learning to use the computer. . . ○
- Other uses not listed above ○

53. During the last month, on average how many days per week did . . . use the computer at home?
- 7 days ○
- 6 days ○
- 5 days ○
- 4 days ○
- 3 days ○
- 2 days ○
- 1 day ○
- Less than once a week ○
- Has not used it in the last month. ○
- Don't know . . . . . ○

Asked of persons 3 to 13 years.

The next set of questions has to do with . . .'s DIRECT or "HANDS ON" use of computers with typewriter-like keyboards. These questions do NOT refer to hand held computers or computer games which do not have a typewriter keyboard.

59. Does . . . directly use a computer at school?
- Yes ○
- No ○

60. Does . . . directly use a computer at home?
- Yes ○ *(Ask 61)*
- No ○ *(End questions)*

61. At home does . . . use the computer for: *(Read categories – Mark all that apply)*
- Video games
- School assignments
- Learning to use the computer
- Other uses not listed above

62. During the last month, on average how many days per week did . . . use the computer at home?
- 7 days
- 6 days
- 5 days
- 4 days
- 3 days
- 2 days
- 1 day.
- Less than once a week
- Has not used it in the last month
- Don't know

(End questions)

*U.S. GOVERNMENT PRINTING OFFICE:1998-201-478:80057

current housing reports

Data on housing vacancies and housing characteristics

U.S. Department of Commerce
BUREAU OF THE CENSUS

CURRENT DATA ON HOUSING

HOUSING VACANCIES (SERIES H-111)

Current statistics on housing vacancies, based on a scientifically selected sample. This series of four quarterly reports and one annual report provides rental vacancy rates, homeowner vacancy rates and homeownership rates for the United States, each of the four regions, and inside and outside standard metropolitan Statistical areas. The statistics for the current quarter are compared with data for the same quarter in the preceding year. Percent distributions are presented for rental vacancies and homeowner vacancies by the following housing characteristics:

- Number of rooms
- Number of bedrooms
- Number of housing units in structure
- Duration of vacancy
- Plumbing facilities
- Monthly rent and sales price asked
- Year structure built

Also shown are percent distributions of all vacant housing units by year round and seasonal status, figures on occupancy and vacancy rates based on the total housing inventory. The annual report, in addition to the above, presents percent distribution of housing characteristics for both renter and owner-occupied units.

HOUSING CHARACTERISTICS (H-121)

This series of reports is published on an irregular schedule. Individual reports present data for the United States, regions, or local areas on one or more selected housing characteristics. (Publications in this series include 15 reports on television ownership, 1 report on second homes, 1 report on housing units by plumbing facilities and condition, a special study on housing characteristics classified by the 1959 income of occupants and a report on homeownership trends.) Stocks of these reports are exhausted. Photocopies only are available. For information, write to: Housing Division, Bureau of the Census, Washington, D.C. 20233

HOW TO ORDER

Both series of current housing reports described in this announcement are available from the Superintendent of Documents in a combined subscription for $6 per year (individual copies vary in price). Use the order form furnished below.

RELATED REPORTS

The Bureau of the Census also issues several series of monthly reports on the construction industry. Subjects covered include housing starts, construction activity, building permits, and housing sales. An announcement and order form covering these reports is available free of charge upon request to: Customer Services, Bureau of the Census, Washington, D.C. 20233.

---

*6377 (please detach here)

Charge your order. It's easy! MasterCard VISA

☐ **YES,** please send me the following indicated subscriptions:
Current Housing Reports (series H-111 and H-121) at $6 per year. (Add $1.50 for foreign mailing.)

1. The total cost of my order is $_____ .

List ID: CHR

Please Type or Print

2. _____
(Company or personal name)

_____
(Additional address/attention line)

_____
(Street address)

_____
(City, State, ZIP Code)

(_____) _____
(Daytime phone including area code)

3. **Please choose method of payment:**
- ☐ Check payable to the Superintendent of Documents
- ☐ GPO Deposit Account ☐☐☐☐☐☐☐-☐
- ☐ VISA or MasterCard Account
  ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

_____
(Credit card expiration date)

Thank you for your order!

_____
(Signature)

(1/88)

Mail To: Superintendent of Documents, Government Printing Office, Washington, D.C. 20402-9371

UNITED STATES DEPARTMENT OF
COMMERCE
NEWS
WASHINGTON, D.C. 20230

BUREAU OF
THE
CENSUS

Public Information Office
(301) 763-4040

Robert Kominski
(301) 763-1154

For Release Thurs., April 7, 1988
CB88-57

ONLY HALF OF HOME COMPUTER OWNERS USE THEM, CENSUS BUREAU REPORTS

About 15 million American adults owned home computers in 1984, but only about half--53 percent--actually used them, according to a first-time report issued by the Commerce Department's Census Bureau.

Overall, 18 percent of adults, some 31.1 million, used computers at home or work, or in school. About one-fourth of the 100 million employed adults used them at work. Computers were used by 39 percent of managers, professionals, technicians, and administrators, the report said.

Some 15 percent of persons aged 3 to 17 had access to home computers and three-fourths of these children used them. At school, 28 percent of the nation's 45.6 million students used a computer.

Students aged 10 to 13 were most likely to use a computer at school--38 percent. For other age groups, computers were used by 6 percent of those aged 3 to 5, about 27 percent of those aged 6 to 9, and 29 percent of those aged 14 to 17.

Households with incomes of $50,000 or more were most likely to own a computer (23 percent), while households with incomes of $10,000 or less were least likely (2 percent).

(more)

Here are other highlights from the report:

- About 8 percent, or 6,980,000, of U.S. households had a computer in 1984.
- Households with school-age children were three times as likely to have a computer, 16 percent compared with 5 percent.
- Among children, home computers were available to 17 percent of Whites, 6 percent of Blacks, and 5 percent of Hispanics.

In homes where a computer was present:

- Four out of five boys and two out of three girls used it.
- Among adults, 63 percent of men and 43 percent of women used it.
- Black children used a home computer 3.8 days per week compared with 2.8 days for White children.

The report also presents data on computer ownership, access and use by sex and educational level, and computer use at work by occupation and industry.

Copies of Computer Use in the United States: 1984, Series P-23, No. 155, are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

-X-

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Official Business
Penalty for Private Use, $300

FIRST-CLASS MAIL
POSTAGE & FEES PAID
CENSUS
PERMIT No. G–58