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Household Economic Studies

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**Educational Background and Economic
Status: Spring 1984**

Data from the Survey of Income and Program Participation

U.S. Department of Commerce
BUREAU OF THE CENSUS

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**What's it
Worth?**

**Educational Background and
Economic Status:
Spring 1984**

Data from the Survey of Income
and Program Participation



U.S. Department of Commerce

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Symbols Used in Tables

- Represents zero or rounds to zero.
 - X Not applicable.
 - NA Not available.
 - B Base is less than
-

What's It Worth?

Educational Background and Economic Status: Spring 1984

HIGHLIGHTS

All figures shown in parentheses define 90 percent confidence intervals. For details of calculation, see "Appendix C, Source and Reliability of the Estimates."

- About 21 percent (± 0.4) of the adult population has obtained a degree beyond the high school level.
- Of all persons with degrees beyond high school, those with professional degrees report the highest mean monthly income — \$3871 (± 397).
- The field of business accounts for 19 percent (± 0.8) of all individuals highest reported postsecondary degrees.
- While 13.7 percent (± 1.0) of all degrees held by men are in the field of engineering, only 1.5 percent (± 0.4) of degrees held by women are in this field.
- The average monthly income for persons with a bachelor's degree is \$1841 (± 75). Variation by field ranges from a high of \$2846 (± 595) for economics majors to \$1065 (± 333) for home economics majors.
- Of all persons who attended at least 12 years of school, 43 percent (± 0.5) were in an academic or college prep track. Twenty percent (± 0.6) of women were in a business track, compared with 5 percent (± 0.3) of men.
- One in five persons between the ages of 18 and 64 (21.7 percent ± 0.8) reported that they had at some time received training designed to help find a job, improve jobs skills, or learn a new job. A large proportion of these individuals (34.7 percent ± 1.9) had obtained the training on their current job.

INTRODUCTION

The relationship between education and economic standing has received considerable scrutiny. The simple conclusion, widely accepted and verified, is that a strong correlation exists between economic status and the education and abilities gained (or certificated) in formal and vocational schooling. Often, education is described by the number of years of school the individual has completed. This topic is examined here using somewhat different data: formal degrees received and the fields of study in which they are received.

This report presents tabulations from the Survey of Income and Program Participation (SIPP) regarding the educational attainment and background of the population of the United States. These tabulations show the numbers of persons by their highest attained degree level and the field of degree, along with some basic measures of their current economic and employment status. Other tabulations provide information about the coursework persons received while in high school, and the amount and types of work-related training individuals have experienced. All analyses are based on data collected as part of the third wave (interview) of the 1984 panel of the Survey of Income and Program Participation, gathered in the 4-month period from May to August 1984.

DEGREE ATTAINMENT OF THE POPULATION

Table 1 presents data on degree status by sex, race, and age for the population aged 18 and older. Degree status as discussed in this report has been defined to include the following mutually exclusive categories: persons who have not completed high school, those completing high school and nothing more, persons who attended post-secondary school but did not receive a degree, persons with vocational degrees and certificates, associate degrees, bachelor's degrees, master's degrees, professional degrees, and doctorate degrees. [NOTE: Individuals were asked to identify their "highest" degree, and their implicit ordering of degrees was never examined. The specific point of whether one degree actually represents "more" education than some other degree is not at issue; while data may show highest value on some scale (say, income) for one degree, the same degree could result in less than the highest score on some other scale (e.g., years to complete the degree).]

The data show that the largest proportion of the population has a high school diploma as its highest degree. About 53 percent of the adult population reported that they had only a high school diploma or had a diploma and had attended, but not received a degree from, a post-secondary institution. A sizable proportion of the population (26 percent) reported that they had not completed high school. The remainder, about 21 percent, had obtained a degree of some type beyond high school.

Figure 1 summarizes the distribution of attainment categories for some demographic subgroups. While 23 percent of men held degrees beyond high school, only 19 percent of women had a degree. The discrepancy between Whites and Blacks was far larger: 22 percent of Whites held degrees above the high school level, as compared with 11 percent of Blacks. In addition, the proportion of Blacks without a high school degree (.39) was more than 50 percent higher than the proportion White (.24).

Examining the data by age groups (figure 2) shows the change in the education of the population that has transpired over the last half-century. (The 18-24 age group deviates from this pattern because its schooling is not finished.) While only 12 percent of persons age 65 and older have a degree beyond high school, 28 percent of those 25-34 years old have already obtained a degree. In terms of basic education about 14 percent of persons 25 to 34 have not completed high school, compared with 26 percent of persons 45 to 54 and 54 percent of individuals 65 or older.

DEGREE LEVEL AND ECONOMIC STATUS

Independent of the personal enrichment and value that one derives from additional schooling, it is often assumed that there is some positive economic return associated with the attainment of higher education. In some instances, for example, a specific degree may be a formal requirement for a job or a promotion.

Table 2 shows three basic measures of economic status for the degree categories already elaborated. The first of these is mean monthly income, defined as the total income received by the person during the 4 observation months of the survey, divided by 4. Income includes wages and salary as well as any other money income, i.e., pensions, paid benefits, interest, and dividends. The second measure, mean monthly earnings, is computed as the total of all earnings over the 4-month period divided by the number of months in which earnings were actually received. Because some jobs are seasonal, or may not pay on a regular monthly basis, this measure only uses months in which earnings (salary or wages obtained from employment) were received. The third measure, work activity, gives a general idea of the amount of employment during the 4-month period. For each month that the individual held a job, whether for the entire month or only for a few days, a value of "1" is recorded. This includes persons who may have only had a job for a week or two and spent the remainder of the month looking for a different job, on layoff, or who left the labor force (without a job and not looking). Persons who did not have a job at any time during the month, regardless of whether they were looking for one or not, receive a value of "0" for that month. Persons

reporting a job in all 4 months would have a value of "4", while those who reported a job in no months have a value of "0".

Table 2 shows the estimates of these three measures for each of the degree groups for all persons ages 18 and older. The data show that there are substantial differences, both in terms of income and earnings, between some of the degree levels beyond high school. The highest value for mean monthly income is reported by persons with professional degrees, while the lowest is given by persons with vocational degrees.

Most degrees beyond high school have significantly higher income and earnings values associated with them than the next lower degree (except for the contrast of Ph.D. and professional degrees). In addition, the mean income and earnings measures for persons with only a high school diploma are in turn substantially larger than those for persons who did not complete high school. In short, the basic time-honored relationship between education and economic returns is clearly verified by these data.

The usefulness of the third measure, work activity, should not be overlooked. Even with this gross measure it is possible to see that there are differences between some degree levels with regard to employment. On the average, persons with associate degrees or higher held jobs sometime during the month in at least 3 of the 4 months observed, while persons who were not high school graduates held jobs in fewer than half of the observed months.

There are substantial differences between men and women at each degree level for both income and earnings, and the mean amount for males is always higher than that for females (except for the Ph.D. level where no comparison is made because of the small sample size). This pattern of difference also generally holds true for work activity, which probably accounts for some of the observed differences in income and earnings. Comparisons between Whites and Blacks can be made at four degree levels — master's, bachelor's, associate, and vocational. In all cases except master's, the mean monthly income of Whites is significantly larger than for Blacks. In comparative terms for these four degree levels, the ratio of male to female income (or earnings) is always greater than the White to Black ratio.

DEGREES AND FIELDS OF STUDY

As the data in table 2 illustrate, there are clear economic advantages in the attainment of post-secondary degrees. These degrees, however, are granted in a widevariety of fields, and as demand for these areas of expertise varies, so too should the number of persons who choose a given field of study and the rewards they

Figure 1. Educational Attainment, by Race and Sex

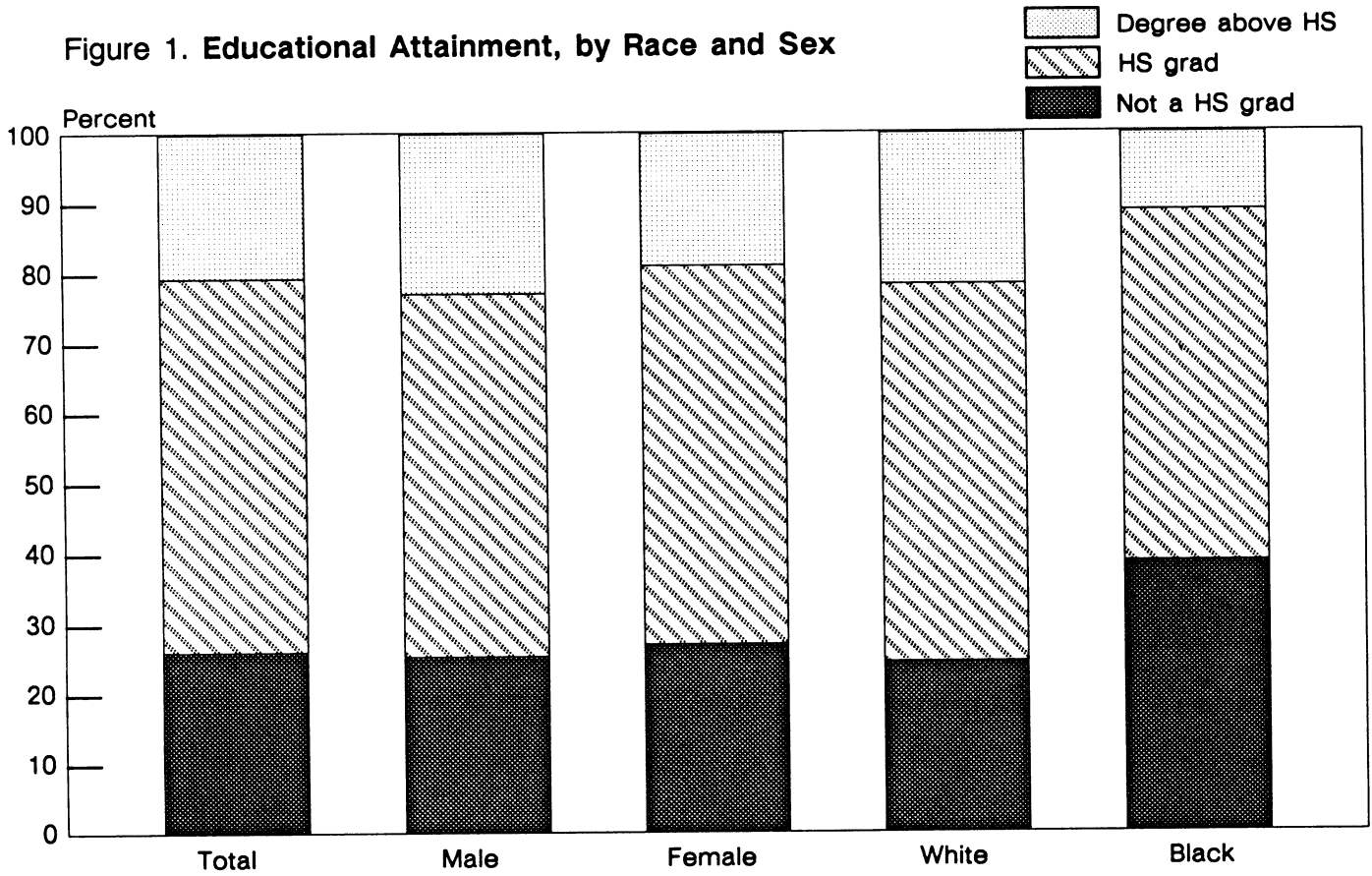
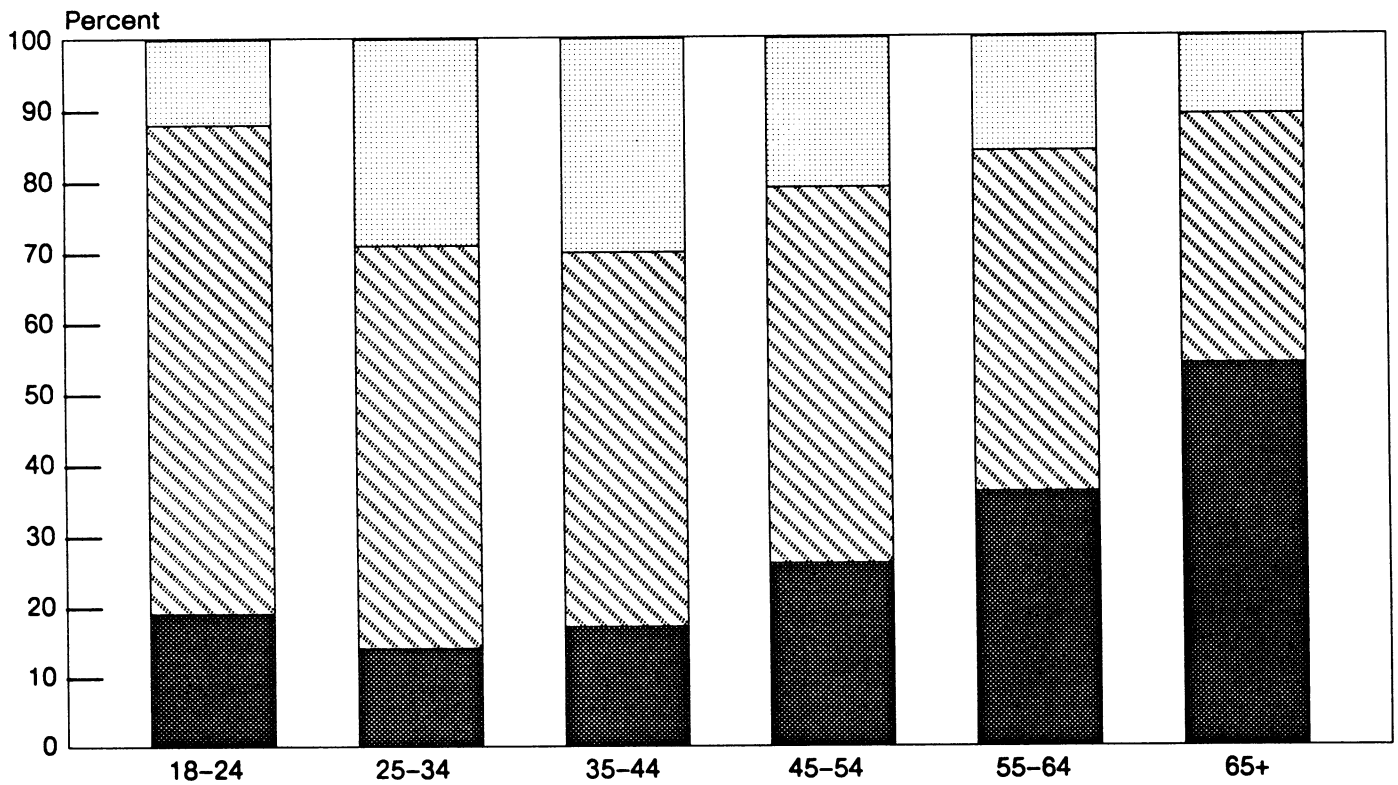


Figure 2. Educational Attainment, by Age Group



receive. As part of the data collected, persons were asked to report the field of training in which their highest degree was received. Respondents were given a flash-card with 20 possible choices (see appendix E) and asked to choose the field which most closely matched the area of their own degree. Table 3 shows field of degree by sex and race for all persons with post-secondary degrees.

The first panel of the table shows the diversity of fields of training for the various degrees. Some fields are clearly associated with one or two degree types - law and medicine, for example; while others such as business and education have degree holders at several degree levels. The largest single field is business, representing nearly 1 in every 5 degrees; education accounts for about 16 percent. The short list of 20 fields does a relatively good job of classifying most individuals with only 7 percent of all respondents choosing the category "other" as the field of their degree. About 60 percent of all professional and doctorate degrees combined were in just two fields - law and medicine/dentistry; one-third of all master's degrees were in education.

There are several notable differences between the sexes with respect to degree fields. While 23 percent of the men with degrees held them in business, only 15 percent of the women held their degree in this field. The differential in engineering degrees is even more lopsided: men held 2.5 million degrees in engineering, representing about 14 percent of all degrees held by men. By contrast, there were only 245,000 women with engineering degrees - about 1 percent of all female degree-holders. Conversely, women occupy some fields in much higher proportion than men: 25 percent of all highest degrees held by women were in the field of education; for men this field accounts for 9 percent. Other fields such as English, home economics and liberal arts are represented more frequently by women than men, both in numeric and proportionate terms. While 1,780,000 men held a highest degree in one of these three fields (9.6 percent of all men with degrees), 2,883,000 women (17.2 percent of all female degree holders) obtained their highest degree in one of these areas. Differences in fields between Whites and Blacks are all 4 percentage points or less.

FIELDS OF STUDY AND ECONOMIC STATUS

Every year, several million college students are faced with one of the most difficult decisions in college—the choice of a major. For some students, the choice reflects a pattern of interest that has developed over time, while for other students the choice may be motivated by the path of least academic resistance. One factor which enters into the choice of field of study for many students is the perceived economic rewards that may accrue

from a degree in the chosen field. To a large extent, ultimate financial rewards may result more from the skills of the individual, the specific job they take, and the relative demand for the type of position. Nevertheless, the field of training has some bearing on eventual economic outcomes. Table 4 shows the summary economic measures previously discussed by various fields and types of degrees. Because the SIPP data are part of a sample survey, there are not always enough sample cases to provide statistically reliable estimates of every field and degree combination. The panels of table 4 have been chosen to produce tables where most cells have an estimated base of at least 200,000 persons.

The first panel of table 4 shows the average monthly income, earnings, and work activity by fields for all persons aged 18 and above with a degree beyond high school. Variations specific to degree levels are not controlled in these data, but field-specific variations are still evident. As might be expected, degrees in the field of law and medicine are associated with some of the highest average monthly incomes, while those in home economics, technical health fields, and liberal arts are among the lowest. Regardless of field, persons with a degree beyond high school had average monthly incomes that were substantially larger than that of persons with a high school diploma only (\$1,910 vs. \$1,045).

Adding precision in terms of the type of degree gives a better picture of the economic value of specific fields. The second and third panels of table 4 show the various economic measures by fields for all advanced degrees (i.e., master's, professional, and doctorate) and bachelor's only. As in the first panel, the data for advanced degrees show that several of the largest monthly incomes are associated with the fields of medicine and law (\$4,234 and \$4,060 per month, respectively). Other fields with monthly incomes greater than \$3,000 include business and engineering. Persons with advanced degrees in the fields of theology, technical health, and liberal arts report average monthly incomes that are among the lowest for all advanced degree holders. This pattern is not repeated in the third panel (for bachelor's degrees only) because there are relatively few such degrees in law and medicine. The results do show that some of the largest average monthly incomes for bachelor's degree fields are reported by persons with training in economics, engineering, and physical science, while those with degrees in home economics, psychology, or education have some of the lowest monthly averages. However, persons with training in a given field may not hold an occupation specifically related to that field. In addition, some variability in income is due to the age of the individual, not controlled for in this table.

Overall, the mean monthly income of persons whose highest degree is the bachelor's is \$1,841, but there

are some bachelor's degree fields which have average incomes that are substantially higher than some other advanced degree fields. For example, the average monthly income of bachelor's degree recipients in engineering was \$2,833, while the average monthly income of persons with an advanced degree in English was \$1,945. These figures are estimates only of some of the economic rewards associated with the occupations held by individuals of given degrees and degree fields. Choices of fields of study are based upon many other factors not measured here, such as personal taste, commitment, and ability.

HIGH SCHOOL CURRICULA AND COURSEWORK

While a substantial number of persons have obtained some education beyond high school, the majority of the population has at most finished high school and perhaps a little more. Education through high school is seen by many as the minimum requirement for the functional rigors of everyday life. The education obtained in high school varies markedly, however. "Tracking", legally-mandated minimum basic education requirements, and specialized "enrichment" and "magnet" programs, along with the typical course choices most students are allowed, all lead to a diverse mix of courses and training even before the beginning of post-secondary schooling. The SIPP interview asked all respondents who had attended at least the 12th grade some basic questions about their high school courses and curricula. Table 5 shows the numbers of persons who have taken each of several high school courses by their general program of study. In terms of programs, 43 percent reported following "academic" or "college prep" programs, while 38 percent said they were in a "general" program. Another 12 percent reported a business track, 6 percent vocational, and 1 percent some other kind of program. While 5 percent of males said their high school training was taken in a business track, 20 percent of women claimed to have followed such a course of study.

In terms of specific coursework, the courses listed were taken by sizable proportions of the population. No fewer than 40 percent of all persons had taken courses in trigonometry or geometry, chemistry or physics, 2 years of foreign language, industrial arts, and business. Over three-fourths of persons had taken algebra, and over 90 percent had taken 3 or more years of English. Proportions vary somewhat depending on the specific track one followed. Most notably, while 92 percent of persons from business programs reported taking 2 or more years of business courses, this training was taken by only 35 percent of those in non-business programs. Similarly, 2 or more years of vocational courses were much more likely among persons reporting vocational programs, and trigonometry, science and foreign language are characteristic of persons from college prep programs.

Some substantial differences in coursework exist between males and females. While proportionately more males took courses in algebra, advanced math, and physical science, proportionately more females took foreign languages and business courses. In terms of race differences, Whites were more likely than Blacks to have taken advanced math or 2 or more years of foreign language, both in the total population as well as for only those persons from an academic or college preparatory track. Examined across age cohorts, the proportion of persons reporting these kinds of coursework does not reveal any strong temporal shift, suggesting that the general content of American secondary schooling has not undergone any massive change over the past four decades. It is important to remember, however, that for older cohorts large proportions of persons did not complete high school and, therefore, are not represented in the coursework data.

WORK-RELATED TRAINING

In addition to the education and training individuals receive in pursuit of traditional degrees, learning also goes on in other contexts. One of the more organized forms is the learning individuals experience as a part of their job or in preparation for one. Some training is provided by government-sponsored programs or by courses offered in the workplace. Training may also be offered in a less formal context such as on-the-job seminars, short-term refresher courses, or computer-assisted instruction. All persons under 65 years old were asked if they had "ever received training designed to help people find a job, improve job skills, or learn a new job." For those individuals responding affirmatively, additional questions were asked about the location and nature of the most recent training. These data are presented in table 6.

About 1 in 5 adults between the ages of 18 and 64 reported that they had received work related training at some time. Males were more likely than women to have received training, and individuals with less than 9 years of education were far less likely to have received training than persons with more than 9 years of schooling. A large proportion of those persons who had received work training said they used this training on their current job (68 percent). Use of training in the current job was most frequent for persons with more than 12 years of education (74 percent). The high rates of both training and use of training for the highest education group might at first appear to be counter-intuitive, since work training is often perceived as being aimed at groups "in need", i.e., less well-educated, unemployed. The questions in SIPP, however, asked about any work-related training, which would include the very general types of training that persons receive in the course of beginning and learn-

ing about a new job, and about one-third of all respondents who received training said it was obtained at work. In this context, is not unreasonable that higher rates of training are reported by those persons with higher levels of education and greater likelihood of being employed.

While training was received in a wide variety of places, the workplace was the most frequently mentioned locale. (Respondents could report more than one location.) A large proportion (35 percent) of all persons with training said they had received it at sometime since 1983. This finding should be viewed with some caution, since the questions asked for information about the "most recent" training. In addition, the recall of training received even more than a few years ago may be difficult for many respondents, particularly if the training was short-term or of an informal nature. The average length of training pro-

grams was reported as about 7 weeks, but many programs lasted a week or less.

Payment for work training generally came from the employer (51 percent of all training since 1980) or some government agency (Federal, State, or local). However, a substantial proportion of training was paid for by the individual or their family (21 percent). Data about training that had occurred since 1982 in the context of specific Federally sponsored programs (e.g., CETA, JTPA, WIN, Job Corps, Trade Adjustment Assistance) indicate that these programs together accounted for a small proportion of the most recent work training obtained during this time (about 6 percent). In general, these data on work training provide a simple illustration of the magnitude and diversity of learning which goes on beyond regular education. While Government-sponsored programs provide some of this training, many other forms also exist, with training received at work accounting for the largest share.