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## UNDERSTANDING TABLES AND GRAPHS

Tables and graphs are often confusing even though they are intended to present information concisely and unambiguously. Because of an inability to read tables and graphs, many people either misinterpret them or rely on an author's summary of what the data mean. However, another person's interpretation of a table or graph may be deliberately biased, accidentally misleading, or incomplete.

Tables and graphs have a lot of information packed into them, but if they have been properly organized, you can easily understand them by following certain steps (Wallis and Roberts, 1962:195-207). The steps outlined below are keyed to Table 3.1 and Figure 3.2.

1. Begin by reading the title of the table or graph carefully; it will tell you what information is being presented. Table 3.1 shows median annual incomes in the United States.

2. Find out the source of the information. You will want to know whether the source is reliable, whether its techniques for gathering and presenting data are sound. The figures originated from the U.S. Bureau of the Census, a highly trusted source. If you know the source of data, you can investigate further on your own.

3. Read any notes accompanying the table or graph. Not all tables and graphs have notes, but if they do, the notes should be read for further information about the nature of the data. The notes in Table 3.1 and in Figure 3.2 explain that all the data refer to the total money income of full-time and part-time workers, ages 25 and over, in a March 1988 survey.

4. Examine any footnotes. Footnotes in Table 3.1 and Figure 3.2 indicate that the data are categorized by the highest grade actually completed. Although you may have assumed this correctly, years of schooling

**Table 3.1 Median Annual Income by Sex, Race, and Education**

Demographic Group	Overall Median Income	Years of Schooling <sup>1</sup>					
		Less Than 8	8	9-11	12	13-15	16 or More
White males	\$22,189	\$8,983	\$11,178	\$14,957	\$21,016	\$25,361	\$34,889
Black males	\$13,193	\$6,655	\$ 9,101	\$10,604	\$13,966	\$19,597	\$25,621
White females	\$ 9,411	\$4,989	\$ 5,674	\$ 6,451	\$ 8,916	\$12,331	\$18,777
Black females	\$ 7,899	\$4,432	\$ 4,562	\$ 5,270	\$ 9,284	\$13,681	\$20,658

Note: These figures include the total money income of full-time and part-time workers, ages 25 and over, as of March 1988.

<sup>1</sup>In terms of highest grade completed.

SOURCE: U.S. Bureau of the Census, *Money Income of Households, Families, and Persons in the United States: 1987*, Current Population Reports, Series P-60, No. 162 (Washington, DC: U.S. Government Printing Office, 1989a), pp. 140, 144.

could have referred to the total number of years in school, regardless of the grade level attained.

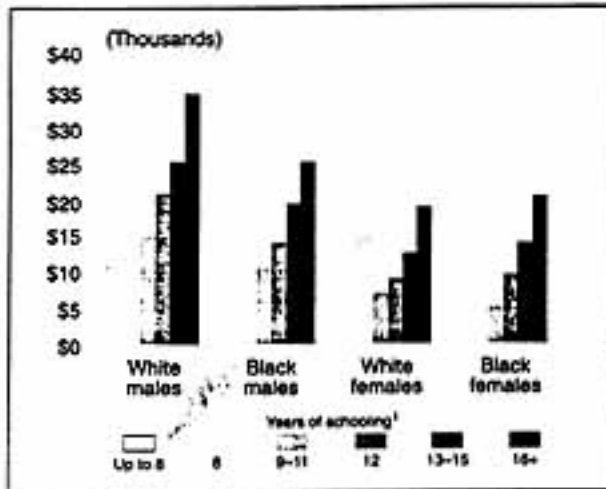
5. Look at the headings across the top and down the left-hand side of the table or graph. To observe any pattern in the data, it is usually necessary to keep both types of headings in mind. Table 3.1 and Figure 3.2 show the median annual income of black and white males and females for several levels of education.

6. Find out what units are being used. Data can be expressed in percentages, hundreds, thousands, millions, billions, means, and so forth. In Table 3.1 and Figure 3.2, the units are dollars and years of schooling.

7. Check for trends in the data. For tables, look down the columns (vertically) and across the rows

(horizontally) for the highest figures, lowest figures, trends, irregularities, and sudden shifts. If you read Table 3.1 vertically, you would be able to see how income varies by race and sex within each level of education. If you read the table horizontally, you could see how income varies with educational attainment for white males, black males, white females, and black females. A major advantage of graphs is that the sudden shifts, trends, irregularities, and extremes are easier to spot than they are in tables.

8. Draw conclusions from your own observations. Table 3.1 and Figure 3.2 show that although income tends to rise with educational level for both blacks and whites, it increases much less for black men and for women of both races than for white men. In fact, white male high school dropouts have incomes almost as high as black high school graduates; white high school graduates earn only some \$4,000 less each year than black males with sixteen or more years of education. Black women appear to improve their earning power through college education to a greater extent than do white women.



**Figure 3.2 Median Annual Income by Sex, Race, and Education**

Note: These figures include the total money income of full-time and part-time workers, ages 25 and over, as of March 1988.

<sup>1</sup>In terms of highest grade completed.

SOURCE: U.S. Bureau of the Census, *Money Income of Households, Families, and Persons in the U.S.: 1987*, Current Population Reports, Series P-60, No. 162 (Washington, DC: U.S. Government Printing Office, 1989a), pp. 140, 144.

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