

Do Blacks Earn Less than Whites and Why?

A Data Analysis Module for an Introductory Sociology Course

Developed as Part of the Integrated Data Analysis Project

of the American Sociological Association

LEARNING OBJECTIVES

Skill

After using this module, students will gain skills in:

- Using software to access and analyze census data
- Identifying independent and dependent variables
- Employing control variables
- Forming testable hypotheses using quantitative data
- Learning how to construct, read, and interpret bivariate tables displaying frequencies and percentages
- Creating visual tools representing quantitative data in the form of charts or graphs
- Using real world data to enhance and support key course concepts

STARTING TO THINK

In this module, we are going to explore what people earn from their jobs. People care a lot about earnings. Why?

- What part of the population has any other source of income besides their job earnings?
- How do differences in peoples' earnings tell us about how their contributions to our society differ?
- To what extent does the quality of a person's life depend on their job earnings?
- Would we have a better society if differences or inequality in earnings were limited? How limited?
- What reasons for differences in earnings do you think are acceptable in a just society?

DIFFERENCES IN EARNINGS

Let's start by looking at differences in earnings. You can access WebCHIP through the SSDAN website. Use these instructions:

1. <http://www.ssdan.net/datacounts/data/>
2. From there, click "Browse" on the left sidebar. Find "census1990" in the drop-down box and select it.

3. Scroll down through the list of data sets until you find **work9-45.dat**. Highlight and click “submit.” This will bring up the data set in the WebCHIP program and it is ready for analysis.
4. You can also click [here](#) to launch the dataset in WebCHIP.

Now you will examine income by race for 45-54 year olds in 1989. First, read the description of the data set. Who is described here? Do the limitations in the people described matter for studying differences in earnings?

1990. What is different about 1990 for income than 1970 or the present time?

Full time. What is different about earnings from full time employment than part time?

Age 45-54. What is different about income at age 45-54 than 18 years old? 30 years old?

How equal or unequal are people’s earnings in our society? Put your guess at the percent of people who earn in the different earnings categories. These are the same categories we’ll be using throughout. (K means a thousand; thus <15K means less than \$15,000.)

| | <15K | 15-25K | 25-35K | 35-50K | 50K+ | Adds to: |
|----------|------|--------|--------|--------|------|----------|
| Everyone | | | | | | 100% |

Use the Marginals function in WebCHIP to look at the percentages of people in each category (i.e., the marginals or marginal distribution) for the variables in the data set. Focus on earnings. Earnings are defined here as “the money a person makes from working as wages, salary, or a form of self-employment expressed as an annual amount” (Frey 1997, p. 49). Copy the actual percentage distribution into the chart below.

| | <15K | 15-25K | 25-35K | 35-50K | 50K+ | Adds to: |
|----------|------|--------|--------|--------|------|----------|
| Everyone | | | | | | 100% |

- How close was your guess to the actual data? What were the key differences?
- How equal or unequal would you say the actual distribution is?
- Let’s say a family can’t make it with any security, to say nothing of comfort, on less than \$35,000 a year. What percent of the individual people in this data set earn less than that? What are the implications of that high a percentage of individuals earning less than a family can make it on? Think about the implications for them, for their communities, for the economy, and for their government

DIFFERENCES IN THE EARNINGS OF BLACKS AND WHITES

Now that we have done some hard thinking about earnings, you are ready to explore differences between the earnings of blacks and whites in the U.S.

If race didn't matter at all for earnings in our society, how would the percentages of blacks and whites who earn at the five income levels compare? Write out a hypothetical set of percentages that would represent an earnings distribution where race didn't matter:

| | <15K | 15-25K | 25-35K | 35-50K | 50K+ | Adds to: |
|--------|------|--------|--------|--------|------|----------|
| Blacks | | | | | | 100% |
| Whites | | | | | | 100% |

But we suspect that race does matter in our society. Take a guess at what the percentage distribution of earnings by race actually looks like. We'll compare it to the data in a moment.

| | <15K | 15-25K | 25-35K | 35-50K | 50K+ | Adds to: |
|--------|------|--------|--------|--------|------|----------|
| Blacks | | | | | | 100% |
| Whites | | | | | | 100% |

Now let's use the actual census data to examine differences in income by race. In WebCHIP create a frequency table with RaceLat as the row variable and Income as the column variable.

Look first at the frequency distribution.

- How many people are analyzed here altogether? How many whites? How many blacks? Who do you think is included in all other?
- How many blacks are there who earn more than \$50,000? Why so few?
- How many whites are there who earn less than \$15,000? How many blacks? Why so many more whites than blacks? Are whites more likely to be poor than blacks? If not, why does the analysis so far fail to show this?

Now, percentage this table.

Here's a big choice: do you percentage down or percentage across? The general rule: percentage along the categories of the independent variable. If you have selected race (the independent variable) first, then income (the dependent variable) second, that means percentaging **across**. Now create a percent across table.

Now copy the percentage distribution to get used to this kind of table. Omit the all other row.

| | <15K | 15-25K | 25-35K | 35-50K | 50K+ | Adds to: |
|--------|------|--------|--------|--------|------|----------|
| Blacks | | | | | | 100% |
| Whites | | | | | | 100% |

Eye ball the table. (We'll come back to your prediction in a little bit.) How do you explain what you find?

- You could compare the various income levels of whites—how would you read the table to do this?—but this only tells you about whites.
- You could compare the various income levels of blacks—how would you read the table to do this?—but this only tells you about blacks.
- So what you want to do is compare ***each category of income for whites with the same category for blacks***—how would you read the table to do this?

Here's the overall rule: percentage *along* the categories of the independent variable. Compare *across* the categories of the independent variable.

So what do you find? Read the table. Start with the <15K level of earnings. Read:

"23.3% of blacks earn less than 15K, BUT only 15.4% of whites earn less than 15K."

Why did you use BUT? Because 23.3% and 15.4% are a lot different. If the two percentages are pretty close in your opinion, use AND so as not to emphasize the small difference in the percentages.

Now read (and/or write out) the comparisons for the other four income levels. Keep thinking whether the difference seems big enough to point out (use BUT) or doesn't really seem very big (use AND).

You might ask how big a difference is big enough to make a deal of? This is a matter of judgment; there is no real rule to go by. You might ask yourself:

- Is this a difference big enough to make it worthwhile spending tax money to do something about it?
- Would I be willing to move to a different society in order to live where this difference is much smaller?
- Would the quality of life of the folks involved be changed noticeably if this difference disappeared?

Now for your conclusions:

- Overall, how big are the differences between whites' and blacks' earnings?
- At what earnings levels are the differences big, and at what level are they pretty small?

Let's look at this graphically.

Plot the comparison with a stacked graph (use WebCHIP's graphing function, check that percentage across is created first). Point out the key differences—not in the middle categories but in the lows and highs.

Reasons for inequality

Now, why do you think whites tend to earn more than blacks? Let's get lots of reasons out on the table?

In your view, which of these explanations would reflect a just distribution of income? That is, which of these factors would we not want to eliminate? This is a discussion of how things ought to be in our society?

DIFFERENCES IN EDUCATION AS THE REASON FOR DIFFERENCES IN BLACKS' AND WHITES' EARNINGS

Now, let's see how much of the inequality in income between whites and blacks is due to differences in their education. Many people would say that to the extent that differences in income arise from differences in education, our society is just. (Of course, this view begs the question why people have different amounts of education.)

First, let's investigate how great, in fact, are the difference between the two races' educations (remember that we are looking here only at 45-54 year old full time workers in 1990).

Cross tabulate education by race. Remember to percentage within the categories of race, the independent variable. Record your findings here.

| | LTHS | HS grad | Some coll | Coll grad | Adds to: |
|--------|------|---------|-----------|-----------|----------|
| Blacks | | | | | 100% |
| Whites | | | | | 100% |

Read the table.

- For what levels of education are there big differences between blacks and whites. Read the comparisons for those levels (remember to use BUT or WHILE or HOWEVER).
- For what education levels are the differences small. Read those comparisons (use AND).

So there are real differences in education between the races, though not at all levels of education. But are these education differences responsible for the income differences between the races? We take this approach because we are pretty sure that education differences do shape income. You can check this out yourself. Just cross tabulate educ and earning with educ as the independent variable, then percentage across. What do you find?

Our approach is to examine folks who have the **same** level of education. Whatever income **differences** there are between whites and blacks who have the **same** education cannot be due to education differences.

Crosstabulate race and income, controlling for education. (After selecting race as your independent variable and earnings as your dependent variables, pick education as the control variable. Percentage as before.)

You get one table for each of the four levels of education. The key question is: Do you still see what you judge to be large differences in earnings between whites and blacks? Focus your attention on the same earnings levels where you found the differences before.

You now have four tables to interpret as a package, so a new way to pull the data together is called for, a way that reduces the data to one table. You can do this by filling in the following table. In each cell, write the **black minus white percentage difference** for that education and income level. In the last row, repeat your earlier findings about race differences in earnings without respect to education.

| Difference in % (Black – White) | <15K | 15-25K | 25-35K | 35-50K | 50K+ |
|---------------------------------|------|--------|--------|--------|------|
| LTHS | | | | | |
| HSgrad | | | | | |
| SomeColl | | | | | |
| Collgrad | | | | | |
| Everyone | | | | | |

The big question is, do blacks and whites with the same amount of education earn different amounts of money? You need to examine the size of the percentage differences in earnings between whites and blacks at the same level of education and compare these differences to those we found before for everybody taken together regardless of their education? To answer these questions, stay in the same row because a row “holds education constant” for everyone analyzed in it.

Looking only at the least educated workers, those with less than a high school diploma, have race differences in earnings disappeared. At what income levels are earnings differences as great or greater than for everyone, regardless of education? Why do you think this happens?

A high school diploma is the first educational credential employers really pay attention to. Does a high school diploma tend to equalize income between blacks and whites or not? Why? Do you think a high school diploma is more important to whites or blacks for earning a decent living?

Going to college without getting a college degree may give you some knowledge and skills but it doesn't necessarily give you a credential (unless you earn an associate's degree). Does some college help blacks and whites more or less equally to earn top incomes? Why or why not?

A college degree adds a credential to the knowledge and skills of a college education. How about college? At this top level of education have blacks and whites become pretty much equal on income? Why or why not? Why do you think black-white differences in earnings at this level of education vary so much across the income levels? What's going on at the 50K+ level?

Overall, would you say that the difference between blacks and whites is or is not due to their differences in education? To what extent do you think blacks would earn the same as whites if they got the same amount of education? Why?

The Big Questions

We should look back at the analysis you have just completed both from the point of view of the individuals involved and from the point of view of our society.

From the point of view of the individuals:

- Is it a good strategy to get a good education in our society?
- What is the likely impact of our society's distribution of rewards on the work motivation of whites and blacks?
- Do blacks have a right to be bitter about the distribution of earnings in our society?

From the societal point of view:

- How significant is inequality in our society?
- Do you get what you deserve in our society?
- If blacks and whites got essentially the same education, would race differences in earnings largely disappear?
- To largely eliminate race differences in earnings, how should tax dollars be spent?