

Introduction

Income inequality is defined as the extent to which income is distributed unevenly in a group of people.

In mostly every culture, most people's economic positions are also related to other characteristics, such as whether or not they have a disability, their ethnic background, or whether they are a man or a woman. Of course, if we are referring to income as monetary aspect, we can clearly say that income is not just the money received through pay, but all the money received from employment, investments, such as interest on savings accounts and dividends from shares of stock, savings, state benefits, pensions, and rent. Ethnically speaking, Blacks and Hispanics have faced economic inequality for generations, and the recent wave of Black Lives Matter protests has renewed discussions on these disparities. Compared to White families, other races have lower levels of income and net worth. They are also less likely to hold assets of any type. In fact, 19% of Black families have zero or negative net worth, while only 9% of White households have no wealth.

How the three racial and ethnic groups studied here allocate their wealth is shown in datasets below.

Consider housing equity. For most households, a home not only provides shelter but also represents its most important asset. The share of a household's portfolio devoted to housing changes across the life cycle and across income or wealth distribution. Because the sample studied here is close to retirement, life-cycle differences are not a concern. In general, households in the middle of the income distribution have put a disproportionate share of their total assets into housing, whereas wealthy households own other assets as well, thereby reducing housing's share of their net worth.

Methods

Data sources

Just like the first project, I have used government statistics because national governments are often the only institutions with the resources to collect comprehensive social statistics, and thus publish many social statistics available. There are two datasets that I will examine. The primary data has not been generated by surveys, interviews, and experiments. It is a normal dataset that was generated from census.gov, and it is designed for understanding and solving the research problem at hand. The secondary data truly follows the definition of a real secondary data. It is also generated by census.gov. It will serve as supporting data for the project. US. Census Bureau is about the government-informed statistics on the lives of US citizens including population, economy, education, geography, and more, which is a great source to gather data.

- Data source: https://www.census.gov/search/results.html?q=income+by+race+in++florida&page=1&stateGeo=none&searchtype=web&cssp=SERP&_charset_=UTF-8

Household Income Inequality by Race in the United States

State	White	Black	American	Asian	Hispanic
Alabama	\$55,265	\$32,188	\$48,188	\$62,639	\$55,511
Alaska	\$84,799	\$58,209	\$49,834	\$69,685	\$63,478
Arizona	\$58,435	\$45,310	\$35,251	\$74,430	\$59,806
Arkansas	\$49,581	\$30,758	\$37,801	\$65,919	\$35,947
California	\$74,276	\$49,334	\$53,019	\$91,623	\$72,432
Colorado	\$71,221	\$49,634	\$46,082	\$73,189	\$66,528
Connecticut	\$82,950	\$47,856	\$41,094	\$93,665	\$57,214
Delaware	\$70,154	\$48,297	\$45,227	\$96,657	\$54,239
District of Columbia	\$132,040	\$43,564	\$42,788	\$103,898	\$120,500
Florida	\$56,008	\$39,586	\$45,307	\$68,777	\$52,087
Georgia	\$63,543	\$42,085	\$38,167	\$77,008	\$39,182
Hawaii	\$77,486	\$70,100	\$47,298	\$83,089	\$62,348
Idaho	\$53,738	\$39,970	\$40,898	\$53,435	\$39,051
Illinois	\$69,194	\$37,244	\$47,573	\$85,828	\$53,958
Indiana	\$57,269	\$33,342	\$41,801	\$62,136	\$50,789
Iowa	\$60,123	\$31,053	\$36,941	\$60,638	\$42,077
Kansas	\$59,641	\$35,829	\$43,943	\$68,821	\$51,903
Kentucky	\$50,267	\$33,642	\$33,200	\$62,655	\$34,885
Louisiana	\$58,632	\$29,508	\$41,664	\$61,351	\$56,667
Maine	\$56,030	\$38,655	\$32,670	\$55,656	\$70,500
Maryland	\$90,964	\$65,039	\$69,955	\$102,786	\$89,265
Massachusetts	\$81,977	\$48,382	\$42,686	\$91,713	\$79,919
Michigan	\$59,077	\$33,649	\$42,336	\$82,733	\$58,547
Minnesota	\$71,415	\$34,879	\$36,429	\$75,437	\$72,917
Mississippi	\$54,244	\$29,690	\$33,297	\$59,478	\$26,287
Missouri	\$56,701	\$35,710	\$40,824	\$67,526	\$48,696
Montana	\$53,813	\$41,484	\$32,072	\$58,774	\$36,380
Nebraska	\$61,342	\$34,122	\$37,398	\$56,627	\$42,063
Nevada	\$61,412	\$39,726	\$41,478	\$65,460	\$57,109
New Hampshire	\$74,468	\$51,630	\$47,902	\$83,301	\$49,014
New Jersey	\$85,423	\$51,309	\$53,507	\$116,131	\$48,429
New Mexico	\$50,947	\$38,490	\$33,552	\$65,019	\$47,311
New York	\$73,584	\$46,178	\$41,267	\$72,131	\$47,227
North Carolina	\$58,171	\$37,242	\$38,206	\$80,500	\$48,398
North Dakota	\$66,213	\$34,565	\$36,710	\$62,223	\$48,715
Ohio	\$58,885	\$31,669	\$33,682	\$73,058	\$47,894
Oklahoma	\$54,612	\$34,138	\$42,820	\$56,996	\$40,486
Oregon	\$60,183	\$37,078	\$42,047	\$75,929	\$60,028
Pennsylvania	\$63,110	\$36,847	\$37,702	\$72,699	\$51,705
Rhode Island	\$67,362	\$41,630	\$34,414	\$72,907	\$41,155
South Carolina	\$58,825	\$33,371	\$39,484	\$61,898	\$35,280
South Dakota	\$59,465	\$31,957	\$27,045	\$51,288	\$38,958
Tennessee	\$54,085	\$36,683	\$43,212	\$72,881	\$26,466
Texas	\$62,679	\$44,688	\$52,094	\$84,851	\$53,659
Utah	\$70,199	\$42,739	\$41,942	\$70,759	\$64,594
Vermont	\$60,577	\$43,548	\$41,793	\$55,568	\$54,258
Virginia	\$76,860	\$49,273	\$61,850	\$102,735	\$79,474
Washington	\$71,466	\$50,487	\$45,558	\$90,131	\$65,024
West Virginia	\$45,467	\$32,070	\$29,927	\$58,521	\$60,318
Wisconsin	\$61,974	\$30,002	\$41,594	\$66,408	\$38,836
Wyoming	\$63,116	\$44,712	\$49,352	\$54,025	\$137,572

Household Income Inequality by Race in the United States

- Data source: <https://www.census.gov/data/datasets/time-series/demo/popest/2010s-state-detail.html>

State	Hispanic	White	Black	Asian	American Indian
Alabama	4.10%	65.50%	26.70%	1.30%	0.50%
Alaska	7.00%	60.60%	2.90%	6.60%	14.20%
Arizona	31.40%	54.70%	4.10%	3.20%	3.90%
Arkansas	7.40%	72.30%	15.20%	1.60%	0.60%
California	39.10%	37.00%	5.50%	14.40%	0.40%
Colorado	21.50%	68.20%	3.90%	3.10%	0.60%
Connecticut	16.10%	66.70%	9.90%	4.50%	0.20%
Delaware	9.30%	62.20%	21.50%	4.00%	0.20%
District of Columbia	11.00%	36.50%	45.30%	4.00%	0.20%
Florida	25.60%	53.80%	15.40%	2.80%	0.20%
Georgia	9.60%	52.60%	31.10%	3.90%	0.20%
Hawaii	10.50%	21.80%	1.60%	37.30%	0.10%
Idaho	12.40%	82.00%	0.60%	1.30%	1.10%
Illinois	17.20%	61.20%	14.00%	5.40%	0.10%
Indiana	6.90%	79.20%	9.20%	2.20%	0.10%
Iowa	5.90%	85.90%	3.30%	2.60%	0.20%
Kansas	11.90%	75.90%	5.50%	2.90%	0.60%
Kentucky	3.50%	84.60%	8.00%	1.40%	0.20%
Louisiana	5.20%	58.50%	32.10%	1.80%	0.50%
Maine	1.60%	93.40%	1.20%	1.10%	0.60%
Maryland	10.10%	50.70%	29.40%	6.40%	0.20%
Massachusetts	11.80%	71.50%	7.00%	6.60%	0.10%
Michigan	5.10%	75.00%	13.60%	3.10%	0.50%
Minnesota	5.30%	79.90%	6.40%	4.90%	1.00%
Mississippi	2.90%	56.60%	37.90%	0.90%	0.40%
Missouri	4.20%	79.40%	11.40%	2.00%	0.30%
Montana	3.70%	86.30%	0.40%	0.70%	5.90%
Nebraska	10.90%	79.00%	4.50%	2.40%	0.70%
Nevada	28.80%	48.80%	8.90%	8.30%	0.90%
New Hampshire	3.80%	90.30%	1.30%	2.70%	0.10%
New Jersey	20.40%	54.80%	12.80%	9.80%	0.10%
New Mexico	48.80%	37.40%	1.80%	1.30%	8.80%
New York	19.20%	55.10%	14.30%	8.70%	0.20%
North Carolina	9.40%	63.00%	21.20%	2.90%	1.10%
North Dakota	3.50%	84.40%	3.00%	1.70%	5.40%
Ohio	3.70%	78.90%	12.20%	2.20%	0.20%
Oklahoma	10.60%	65.60%	7.20%	2.10%	7.30%
Oregon	13.10%	75.60%	1.80%	4.30%	0.90%
Pennsylvania	7.30%	76.40%	10.70%	3.50%	0.10%
Rhode Island	15.40%	72.10%	5.40%	3.60%	0.30%
South Carolina	5.70%	63.60%	26.80%	1.50%	0.20%
South Dakota	3.60%	82.30%	1.90%	1.20%	8.60%
Tennessee	5.40%	73.90%	16.60%	1.80%	0.20%
Texas	39.40%	41.90%	11.80%	4.80%	0.30%
Utah	14.00%	78.30%	1.20%	2.40%	1.00%
Vermont	1.90%	92.80%	1.20%	1.80%	0.30%
Virginia	9.30%	61.70%	18.80%	6.40%	0.20%
Washington	12.70%	68.60%	3.50%	8.50%	1.00%
West Virginia	1.30%	92.00%	3.90%	0.80%	0.10%
Wisconsin	6.90%	81.20%	6.30%	2.70%	0.80%
Wyoming	10.00%	84.00%	0.90%	0.80%	2.10%

Statistical methods

I have decided to examine the association between obesity independent variables and state percentage of poverty prevalence by using ordinary least squares (OLS). OLS is a variation of linear regression, a statistical method that examines associations between multiple independent variables and a single dependent variable; once the assumptions are satisfied, the regression output indicates the strength of the association between the dependent variable and each of the independent variables. These assumptions, include linear parameters, random sampling, no multicollinearity, no autocorrelation, a conditional mean of zero, and normally distributed error terms; all of them were satisfied, meaning that our OLS models are efficient and represent a linear unbiased estimator of variable coefficients.

I also believe that simple linear regression may be a great way to examine my single input. Because simple linear regression requires statistical properties from the data such as means, standard deviations, correlations, and covariance, all the data must be available to traverse and calculate statistics.

Visualization methods

I will use R and Power BI for this project. I am not very comfortable using R, but I am sure that its applications are very well aligned with this type of projects. I will use ggplot which gives me a coherent way to produce visualizations by expressing relationships between the attributes of data and their graphical representation. I will use R Markdown to allow me to create documents that serve as a neat record of your analysis. And finally, I may use Dplyr for data manipulation if I need it.

I will also use Power BI for the following reasons:

- Power BI offers a wide range of custom visualizations. That means visualizations made by developers for a specific use. Custom visuals are also available on Microsoft marketplace.
- In Power BI, I also have the option to upload and view my data in Excel. I will be able to select, filter, and slice data in a Power BI report or dashboard and put it on Excel. I will be able to open Excel and view the same data in tabular form in an Excel spreadsheet.
- Another reason why I will use Power BI is because the data visualization tool is very attractive, intuitive, and interactive. It is very easy to create and understand data through visualizations in Power BI.

Explain the Datasets

Several authors have included other American racial minorities in their analysis of racial wealth disparities. For example, Lusardi (2005) researches the differential savings behavior of both African American and Hispanic households. Hanna & Lindamood (2008) examine the decrease in stock ownership of multiple minority racial groups, including black, Hispanic, and Asian populations. Furthermore, Campbell & Kaufman (2006) perform their decomposition analysis on White, Black, Asian, Native-American, and Hispanic, using data from the 1992 Survey of Income and Program Participation, and find that group differences in the determinants of wealth, particularly indicators of socioeconomic status, have stronger effects for white populations than for racial minorities.

Household Income Inequality by Race in the United States

1. The first data is called “Average Income by State by Race”. We know that education plays a big role in income. This dataset does not reflect any educational background. This dataset will be analyzed to determine the average income of each race in each state in the United States. It will also help us understand the gap between white Americans, African-Americans, Hispanic, Asians, and Native American is particularly conspicuous, not only because these are the five largest racial groups in the U.S., but also because they are the five groups that hold the most wealth per capita and the least wealth per capita.
2. The second data is called “State Population by Race”. This dataset will be used almost the same way as Average income by state by race. The goal of this dataset is to use it to prove that prove that these five groups are the most populated groups in the United States.

Data Analysis and Research Questions

- Does wealth inequality exist in the United States?

Wage earnings are the single most important income source in the U.S. They account for over 70 percent of total personal income. Therefore, wage may be the key determinant of income inequality. Since the 1980s, slower economic growth, higher unemployment and reduced wage shares have been observed in the U.S. Although many studies focus on inequality of outcomes (e.g., household income or personal income or educational attainment), the outcome inequality does not adequately reflect the inequality in

society since this inequality is also the result of different levels of efforts. Thus, inequality itself can be neither all good nor all bad.

- Does racial diversity play a role in the income and wealth inequality in the United States?

Just like I mention in the data explanation, we know that education has played a big role in income and wealth inequality in America. One general analysis of the educational importance in wealth is the fact that we can clearly see the difference of educated Blacks and Hispanic and the uneducated ones when it comes to quality of life. For example, because white Americans perceive a greater threat from and exhibit more prejudice toward blacks than toward other ethnoracial groups, people living in areas with larger black groups appear less cohesive because prejudicial attitudes toward blacks also negatively influence many measures of cohesion (Lee and Bean 2010).

- Which states that have the highest minority income?

We know that whites and Asians fare much better than Hispanics and blacks. The gap is even wider when restricting the comparison to just middle-aged, well-educated families in each of the four groups.

Results (will be added in the Final Paper)

Conclusion

More than 75 percent of white households are married with spouse present, compared with less than half of black households. This difference can be important because marriage allows people to pool their resources and, in general, accumulate more wealth. Among primary respondents, almost 25 percent of whites are college graduates, compared with about 10 percent of blacks and Hispanics. Less than half of Hispanics have a high school diploma. Regardless of race or ethnicity, spouses have less education than primary respondents. No obvious pattern can be discerned from the data on health, although a larger proportion of minority than white households report being in poor or fair health. On the other subjective measure--respondents' expectations of their own mortality--a somewhat larger proportion of Hispanic respondents say they are certain they will not live beyond age 75.

More than 90 percent of the white and black populations were born in the United States, whereas less than half of the Hispanic population was. Immigrants who worked in other countries for many years might be expected to have less Social Security wealth than their native-born counterparts, and Hispanics, on average, do have fewer Social Security quarters of coverage than blacks or whites. With more education, somewhat better health, and longer earnings histories, it is not surprising that white households earned considerably more in 1991 than their black and Hispanic counterparts.

Acknowledgments

There are so many articles, data, and organizations that I owe great credit and great deals of respects to. After reading several articles, I realized that I needed to add more concepts into my research to make my projects more appealing and concrete. These articles have really helped me to understand some of the more important ways to structure my analysis. Finally, I must thank my family especially my wife to allow me to skip so many family activities to focus on working in this project.

Author Information

Corresponding Author	Alberto Luma, 5802 Coquyt Drive, Mount Dora, FL, 32757. Email: lumaalberto@gmail.com
Author Affiliations	Bellevue University DSC680 – Applied Data Science

References:

1. Data source: https://www.census.gov/search/results.html?q=income+by+race+in++florida&page=1&stateGeo=none&searchtype=web&cssp=SERP&_charset_=UTF-8
2. Data source: <https://www.census.gov/data/datasets/time-series/demo/popest/2010s-state-detail.html>
3. <https://www.pgpf.org/blog/2019/10/income-and-wealth-in-the-united-states-an-overview-of-data>
4. <https://www.pewresearch.org/fact-tank/2018/07/12/key-findings-on-the-rise-in-income-inequality-within-americas-racial-and-ethnic-groups/>
5. <https://datausa.io/profile/geo/united-states>
6. <https://www.brookings.edu/blog/the-avenue/2019/10/03/black-household-income-is-rising-across-the-united-states/>
7. <https://www.pewsocialtrends.org/2018/07/12/income-inequality-in-the-u-s-is-rising-most-rapidly-among-asians/>

Household Income Inequality by Race in the United States

8. <https://www.epi.org/blog/racial-and-ethnic-income-gaps-persist-amid-uneven-growth-in-household-incomes/>
9. <https://news.gallup.com/poll/4435/public-overestimates-us-black-hispanic-populations.aspx>
10. <https://dqydj.com/income-by-race/>