



ECON 1000

Empirical Exercise #2 Submission Template

Due TUESDAY 9/26/2023, by 10am EDT on Gradescope

Gradescope Course Link: <https://www.gradescope.com/courses/565275>

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Group members with whom you worked¹: N/A

¹In this class we encourage working in groups because you will learn a great deal from your peers. At the end of the day, however, it is important that you write up your own analysis. Concretely, this means you should choose your own city or county for the full exercise. Your narrative will be at the bottom of this document. Please then list all group members with whom you worked. If you have any questions, please ask.

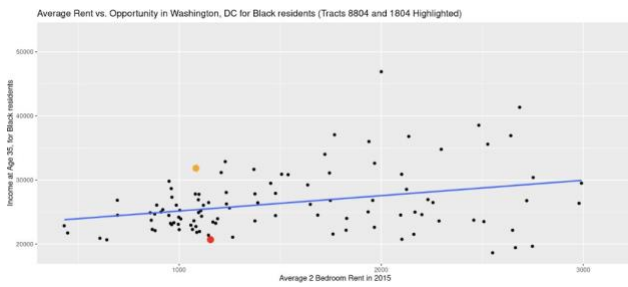
Narrative

Residing in Bethesda, MD the last six years, I decided to explore the city in the first homework and quickly came upon data that it's a neighborhood with remarkably high economic opportunity for low-income residents. Across races, the city appears to provide high opportunities for residents to reach a high average income by the time they reach 35 years old. However, a big issue arises pretty quickly – Bethesda has a remarkably small variance in data because it is a very rich neighborhood, compared to others in the US and even in

Maryland. There isn't a tract in Bethesda, MD with an average income at 35 years old for residents whose parents were low-incoming below \$34k and the residents' income in the majority of the tracts is north of \$40k with many reaching over \$60k. To contextualize the neighborhood better, for residents whose parents were high-incoming, there isn't a tract where they would earn less than \$45k with the majority earning over \$65k. The biggest reason for the neighborhood's success is redlining and segregation which still de-facto holds true in housing and education. So while it successfully provides opportunities for low-incoming, it was impossible to study the relation between rent prices and opportunities and low-incoming residents as there are 0 data points for rent under \$1,500 –



because of [zoning laws](#) that don't allow for apartment buildings in the majority of tracts in Bethesda, MD.

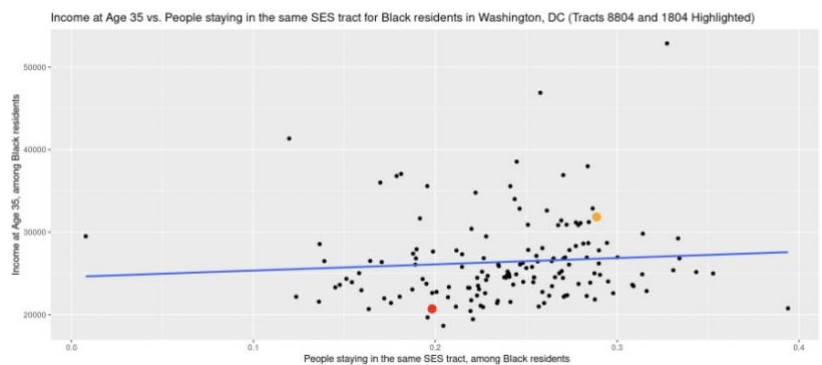


Bethesda being a DC suburb, for HW 2 I decided to research the relation between rent and economic opportunity in Washington, DC as it has much higher diversity and data variance.

The reason I decided to focus on tracts 1804 and 8804 is because they have surprisingly similar median rent values but strikingly different economic outcomes for 35-year-olds. The focus on Black residents, in particular, comes from the fact that Washington, DC is a heavily Black-populated city, and tracts [1804](#) and [8804](#) are both majority black, according to Census data. It's important to stress that, in the Census data, tract 8804 appears to have a slightly higher median income than tract 1804, but what is crucial is that tract 1804 has better opportunities as shown with a much higher average income for 35-year-olds.

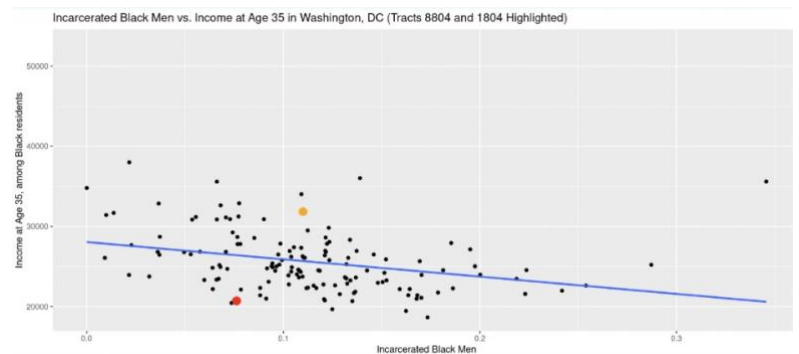
Upon investigating what could be a correlate for tract 8804 having a much lower economic opportunity for Black residents than tract 1804 in Washington, DC, four hypotheses appear: teen pregnancy rate, rate of people staying the same SES tract as their parents, incarceration, and the possibility of reaching the top-quintile for their household income.

The rate of people staying in the same SES tract doesn't appear to be a significant correlate as a little more (0.198 vs 0.289) people move out of their SES tract in tract 8804 while the income discrepancy remains vast between the two tracts. However, we see that, in general, "staytract" is not an appropriate measure of why one tract is better than the other, considering that there appears



to be a minimal, close to 0, correlation coefficient between “staytract” and Income at age 35 across Washington, DC.

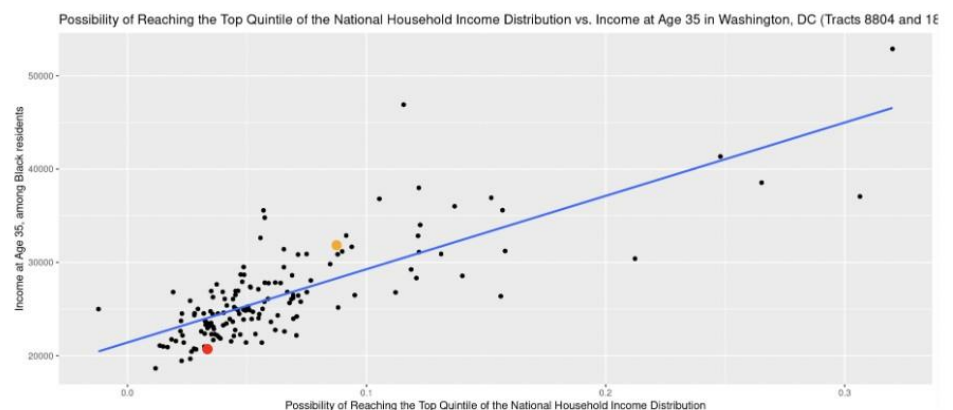
The mystery continues as the number of incarcerated men is also larger in tract 1804 than in tract 8804 (0.0762 vs. 0.11). However, the negative correlation coefficient is much more significant for this neighborhood characteristic: as more Black men are incarcerated in a neighborhood in Washington, DC. This makes sense as after incarceration, it’s much harder to attain high-paying jobs; also the opposite is true that



neighborhoods that are more policed and that have more crime will often have lower economic mobility opportunities. However, this doesn’t appear to be a correlate for the 8804 vs. 1804 tracts.

The correlate that appears to play a bigger role than the previous two mentioned is the teenage pregnancy rate. In tract 8804, there are almost double (0.255) as many teen pregnancies among Black girls than in tract 1804 (0.458). Considering that having a child at such a young age is a big barrier to getting higher education and thus having a lower opportunity for economic mobility – this could be one of the characteristics that contribute to tract 1804, which has twice as few teenage pregnancies, being a much higher opportunity neighborhood.

The possibility of reaching the top quintile of the national household income distribution has the highest positive correlation of all the correlates studied. This is where we see the biggest difference between the two



tracts in Washington, DC: tract 8804 appears to be on the very left (0.0334) of the scatterplot while tract 1804 is in the upper-middle part (0.0875) of the scatterplot. This appears to be the most decisive correlate out of the other four tested for the two tracts. However, the causation is questionable considering that the two variables – income at 35 and the possibility of reaching the top quintile of the national income distribution – seem to be very interconnected and dependent on some other variables that make it more feasible for residents of tract 1804 to be more likely to get rich and become richer at age 35 than in tract 8804. However, comparing the two variables solidifies the findings that tract 1804 has much better economic opportunities and outcomes than tract 8804.

Investigating the two tracts in Washington, DC, it's still very surprising that one has such a higher economic opportunity than the other – considering that traditional correlates like incarceration rates and “staytract” don't appear to play a major role (not pictured, but I also ran tests on high paying jobs within 5 mi radius which doesn't appear to differ between the two neighborhoods. So we have to turn to other, not-quantifiable reasons for why tract 1804 has such better economic outcomes for Black 35-year-olds than tract 8804. Upon further research on the two neighborhoods in general, I came up with the two biggest differences between tract 1804 and 8804: proximity to Maryland suburbs and access to good high schools. Tract 1804 is very close to a prominent Maryland suburb of Takoma; it's one of [the most progressive](#) cities in the US with many support systems and programs for people in need and, seemingly unimportant but worth mentioning, a city with one of the most greenery in the area which could incentivize more socialization and/or better health. The most important distinction, beyond quantifiable data, is that tract 1804 has a good high school in its district, Coolidge High School. Coolidge offers a variety of academic support plans and opportunities for students, including JROTC, Associate College Degrees, and academic support for special needs students – all this combined would make this school a big prerequisite to attaining better life skills

and a higher level of education, even without going to college, that would be a prerequisite for higher economic mobility by the time residents become 35 years old.

Tract 8804 appears to be nowhere near another prominent neighborhood, but according to Google Maps, the Trinidad Cultural Center resides in tract 8804 which leads to a suggestion that it's a heavily-immigrant neighborhood. Immigrants don't have as much [economic opportunity](#) in the US as citizens, considering that they don't qualify for many jobs and might be completely dependent on their employers for visa support which doesn't allow for much job-hopping in search of better opportunities. The tract also doesn't appear to have a public school in its boundaries.

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