An Examination Intergenerational Mobility:

Multnomah County, Or

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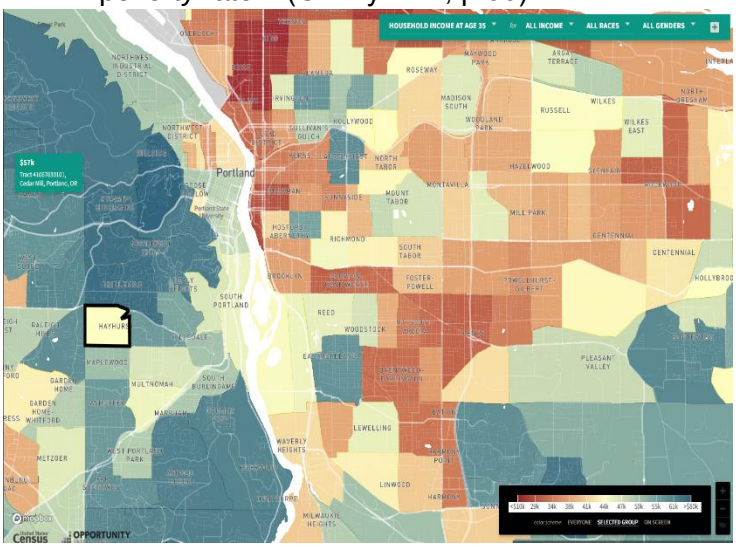
Intergenerational mobility is a measure of a child's ability to deviate from their parents, either for better or worse. While this term applies to all types of characteristics, the main focus of this examination will be on intergenerational income mobility. Intergenerational mobility is a notoriously difficult thing to measure; not only is it necessary to have data on both the parents and children, but researchers must be able to link one to the other. On top of that, the time required to observe the effects is substantial, as children must be followed well into adulthood to observe their final outcomes. Luckily, the Opportunity Atlas was released in 2018, this interactive map shows intergenerational mobility for a large number of characteristics down to the neighborhood level.

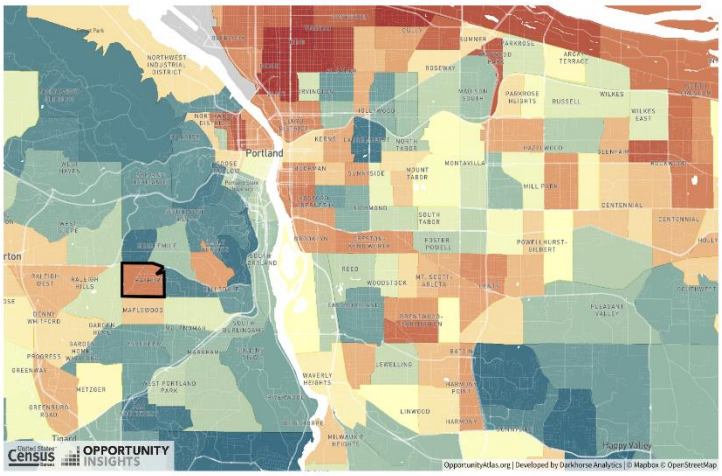
The map includes my hometown which looks slightly different from what I expected. I spent the early part of my childhood in SW Portland/Multnomah County, specifically in Hayhurst. Before diving into the data, one concern that must be addressed is the difference in timing between my childhood and those recorded in the data. As previously mentioned, it takes a long time to collect the data necessary for something like the opportunity atlas, therefore, the children in the data grew up in the 1980s and 90s while I lived there in the 2000s. It is not out of the realm of possibility that there have been significant changes in the neighborhoods over the last 40 years. Fortunately, Chetty et al. (2018), the authors behind the Atlas Manuscript provide some positive news in that regard,

> "The optimal weight placed on an outcome observed 10 years ago is only 11% smaller than the weight placed on an outcome observed in the previous year. The decay in the predictive power of historical upward mobility measures remains small even when we

focus on tracts that changed the most in terms of observable characteristics such as poverty rates" (Chetty et al, p.30).



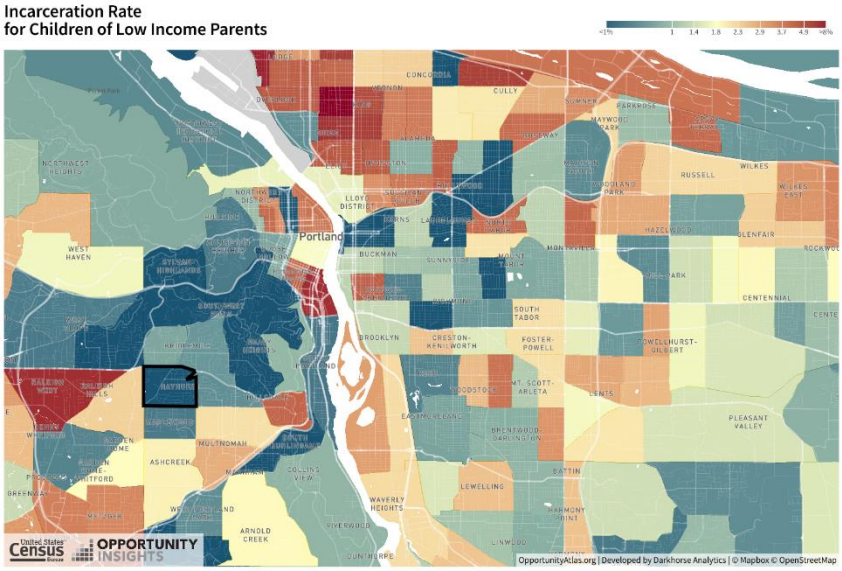
Household Income at Age 35
for Children of Low Income Parents



Turning now to the Atlas itself, figures 1 and 2 compare household income for children with parents at all income percentiles (fig 1) and parents at the 25th pct (fig 2). In general, children growing up in Western Portland tend to have much higher upward mobility than their Eastern counterparts. Focusing on only individual tracts (neighborhoods), I was surprised to see children growing up in Hayhurst (highlighted in black) have some of the lowest incomes in Western Portland.

That being said, despite having some of the lowest incomes, Hayhurst seems to be one of the safest or least corrupting neighborhoods to have grown up in. Fig. 3 shows Hayhurst with the lowest incarceration rate possible in the provided scale at >1%.

Incarceration Rate
for Children of Low Income Parents



Upward Mobility: Hayhurst/Multnomah vs Oregon vs the US

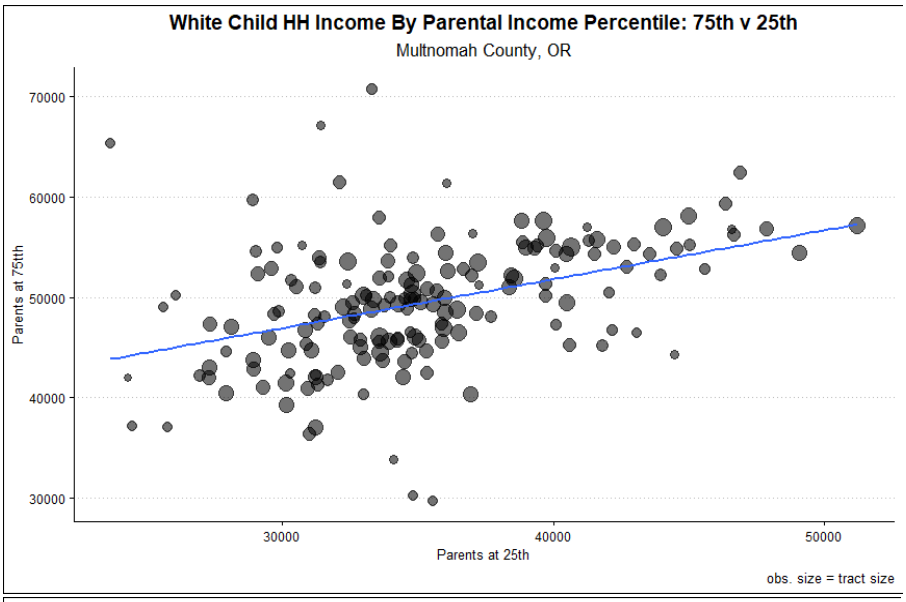
To get a deeper understanding of how my hometown relates to the state and country at large it is necessary to move from visual to statistical analysis. When comparing summary statistics, Hayhurst generally performs worse on average compared to both Oregon and the US. For children whose parents were at the 25th income pct (kfr_25), their HH income at age 31-37 on average is 14.86% lower than Oregon's and 16.26% lower than the US's. Despite ranking lower than average, Multnomah County has one of the most diverse ranges of counties in Oregon with a standard deviation 36% larger than the state average. This made me wonder what was driving such a large difference in variation and downward pull on the mean.

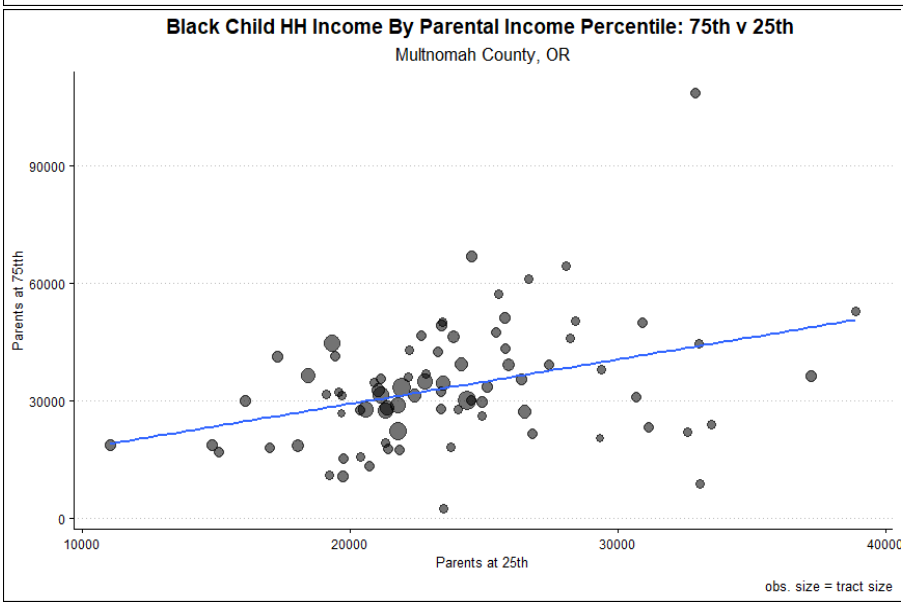
Race: White vs Black

Considering I was the only POC in my grade the entire time I lived in Hayhurst, I am not surprised to find that neighborhood-level data on minorities is severely lacking. For this reason, all discussions of race will take place at the county level. There are huge disparities in HH income between white and black children; the mean income for white children is 56% larger than that for black children. Considering that Multnomah County contains downtown Portland, which is one of the more racially diverse areas, the greater variation may be coming from distinct racial neighborhoods that differ in income. However, when comparing the SDs of kfr_25 across races, the standard deviation for white children is twice as large as that for black children; so, it is more likely that Multnomah County has a large range of neighborhood prices/qualities in a predominantly white city than a racially segregated area that differs in income.

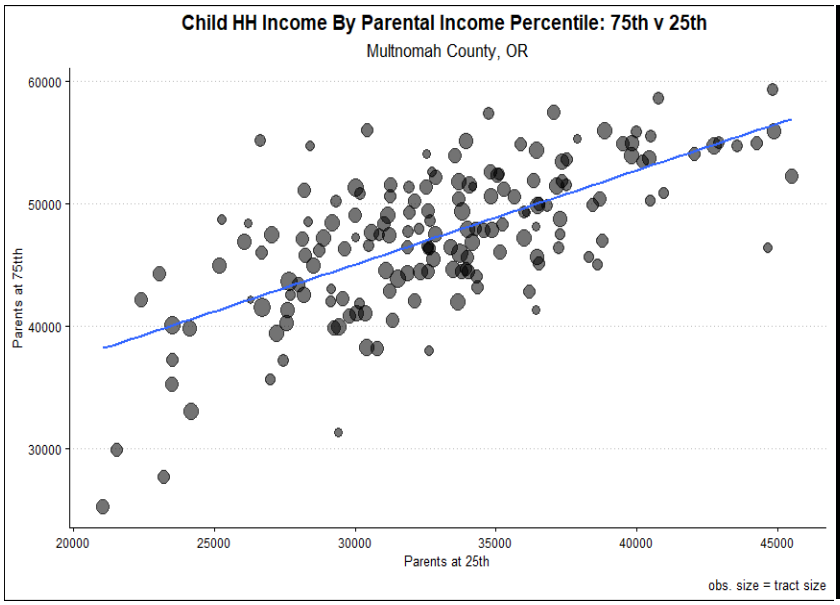
That being said, there still are persistent racial gaps in income for both upward and downward mobility. Looking instead at children with parents at the 75th pct (kfr_75), a similarly sized 55%

gap exists between white and black children. What makes this particularly interesting is that this seems to be a problem of magnitude rather than different trends.





When looking at how upward mobility vs downward mobility compares across races, they appear to have nearly identical trends. The difference being the magnitude of the axis. What can be drawn from this is that child income relative to parent is more dependent on the tract where you live rather than the race of the child, which I think is a good thing.



Child HH Income 75th regressed on 25th

	75th pct
25th pct	0.767***
	(0.068)
Constant	22,052.240***
	(2,250.780)
N	170
R^2	0.434

Notes: ***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Pivoting away from race, fig. 5 shows the same relationship in general. Indeed, we see that in tracts where children from kfr_25 are doing well, children from kfr_75 are also doing well. This can be formalized with a regression which is pictured in fig. 6.

The coeff. on kfr_25 confirms a positive relationship between the two income brackets by tract. It can be interpreted as every dollar increase in kfr_25 is associated with a .767 dollar increase in kfr_75.

What Effects Mobility?

There are many covariates included in the data that could help to describe the relationships above. I looked at single parenthood, job growth, school quality, and the number of high-paying jobs nearby. Of those covariates, single parenthood and job growth provided significant results.

```
t test of coefficients:

             Estimate Std. Error t value  Pr(>|t|)
(Intercept)  0.0015818  0.0617064  0.0256    0.9796
single_std  -0.5955150  0.0730741 -8.1495 8.011e-14 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
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```
t test of coefficients:

                Estimate  Std. Error t value Pr(>|t|)
(Intercept)     0.00073804  0.07449560  0.0099 0.992107
job_growth_std -0.24509148  0.09002648 -2.7224 0.007164 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Single parenthood reacted the way I expected, it appears as though increasing the SD of single parenthood in a county by 1 results in a decrease in kfr_25 by .6 SDs with a confidence interval of [-0.599393167 -0.591636782]. Somewhat puzzlingly, job growth seems to have a negative effect on kfr_25 with a 1 SD increase in job growth being associated with a .24 SD decrease in kfr_25 and CI of [-0.3924165 -0.09776648]. The only possible explanation I can think of is that there is a shift in the type of jobs that hurt their employment outcomes. This could be representative of a shift away from technical/blue-collar work towards white-collar jobs.

Race: White vs Black

There still is an unexplained gap in the outcomes of black and white children both at the kfr_25 & 75 levels. I regressed the covariates mentioned in the last section on kfr_25 differing by race to see if they could fill in the gaps. The results are shown in figures 7& 8:

HH Income (age 31-37) across Race

	White Children (1)	Black Children (2)
Single Parent	-0.437***	-0.330**
	(0.069)	(0.141)
School Qual	0.193***	0.054
	(0.069)	(0.116)
Job Growth	-0.161**	-0.095
	(0.069)	(0.109)
Constant	0.002	0.142
	(0.068)	(0.124)
N	170	81
R^2	0.237	0.080

Notes: ***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.
Parent In at 25th pct

HH Income (age 31-37) across Race

	White Children (1)	Black Children (2)
Single Parent	-0.471***	-0.353**
	(0.068)	(0.142)
School Qual	-0.083	-0.128
	(0.112)	(0.191)
Job Growth	-0.192***	-0.121
	(0.068)	(0.111)
High Paying Jobs	0.355***	0.248
	(0.115)	(0.209)
Constant	0.003	0.147
	(0.066)	(0.123)
N	170	81
R^2	0.278	0.097

Notes: ***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.
Parent In at 25th pct

The only difference between the regressions is the inclusion of high-paying jobs in the second. Consistent with the previous regressions, single parenthood seems to be the most important factor in determining child income. One thing that stands out from the tables is that some of the racial gaps work in favor of black children, that is to say, that the negative consequences associated with the covariates seem to disproportionately affect white children. Another interesting thing to note is the change in school quality with the inclusion of high-paying jobs. This could be pointing towards the importance of getting a high-quality education and how that can tend to feed into higher-paying jobs. With high-paying jobs excluded from the correlation that those high earners had in common was a higher quality education.

The only thing I would feel confident about stating is a causal link is the negative effect of single parenthood on mobility. Just examining theoretically, single parenthood has the potential to seep into a bunch of life outcomes for the child. Single-parent households would likely have less income, which would affect where the child grows up and what kind of education they receive, they would also most likely have a higher probability of forgoing more education to more quickly enter the labor force and assist at home; all of these effects would put downward pressure on the IGM of the child, so there is a large chance that at least the sign if not the magnitude of the effect of single parenthood is causal.

The story of my hometown is much more interesting and convoluted than I originally considered it to be. There is much less upward mobility than I expected there to be, and less of a disparity between the mobility trends of black and white children except for the schooling -> high-income pipeline. This suggests to me that much of the racial income mobility gap in Portland comes from persistent effects from before trends moved similarly and the gap could *possibly*, with a strong emphasis on possibly, be closed with some reparations-like transfer.

References:

Chetty, Raj, et al. “The Opportunity Atlas: Mapping the Childhood Roots of Social Mobility.” 2018, https://doi.org/10.3386/w25147.

The Opportunity Atlas