FC_atlas

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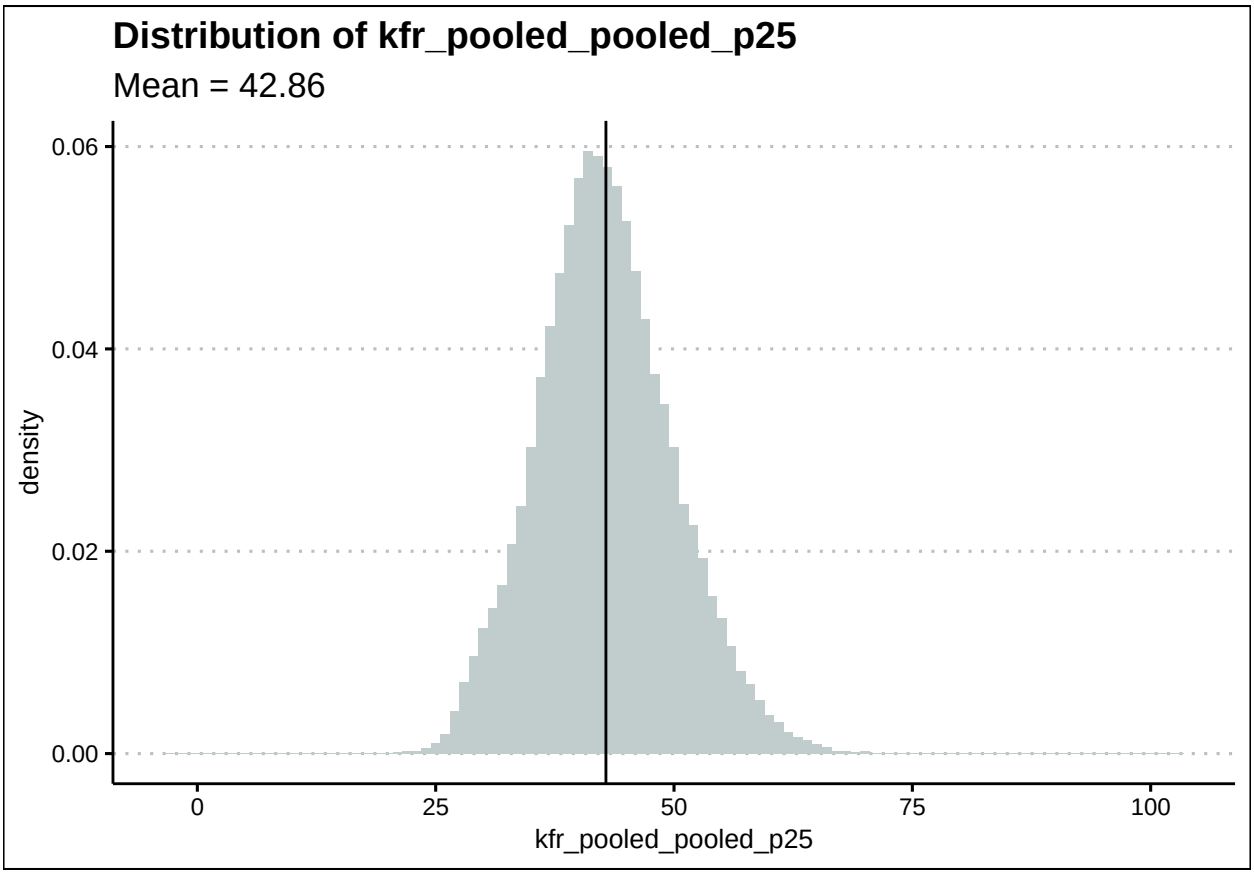
Question 2

The kfr_pooled_pooled_p25 is the absolute mobility at the 25th percentile for each census tract. In other words, this statistic measures the average income percentile rank for children whose parents were at the 25th percentile in income. In this data set, the unit is the census tract. Higher values correspond to higher upward mobility. This statistic is estimated using a linear model because the data is pretty linear when plotted child income rank vs. parent income rank. As such, a linear regression fits the data well.

Question 3



- The mean value of kfr_pooled_pooled_p25 = 42.86. This means that on average kids with parents in the 25th percentile of income distribution have adult incomes in about the 43rd percentile of the income distribution. The data looks relatively normally distributed.

Question 4

Table 1: Summary Statistics

Variable	Mean	Sd	Min	Max
kfr_pooled_pooled_p25	42.9	7.126	-3.286	103.349

- The variable can be negative or above 100 because the linear model does not have an upper and lower bound to it. That is, it will not correct for values that are over or under the possible outcomes of 0 to 100. For this reason, another model (maybe a glm model) could be better to use to bound the values to 0 and 100.

Question 5

place	avg_kfr_pooled_pooled_p25
Belle Haven	48.50
CT	44.80
USA	42.86

My home census tract is 11200 in Fairfield county in CT. My neighborhood is called Belle haven. The value for kfr_pooled_pooled_p25 = 48.5, which is higher than the state average of 44.8 and national average of 42.86. This implies that kids in Belle Haven have a better chance than the average Connecticution and average American of climbing the income latter.

Question 6

place	sd_kfr_pooled_pooled_p25
Fairfield County	8.15
CT	7.00
USA	7.12

The standard deviation in fairfield county = 8.15, which is higher than the CT sd of 7 and national sd of 7.12. This means that there is more variation in upward mobility in my home county than in CT as a whole and the country as a whole. Subtantively, this means that while there are areas in my county where upward mobility is quite high, there are also probably areas in my county where upward mobility is quite low. In other words, a larger sd is probbaly more indicative of more values at either end of the spectrum.

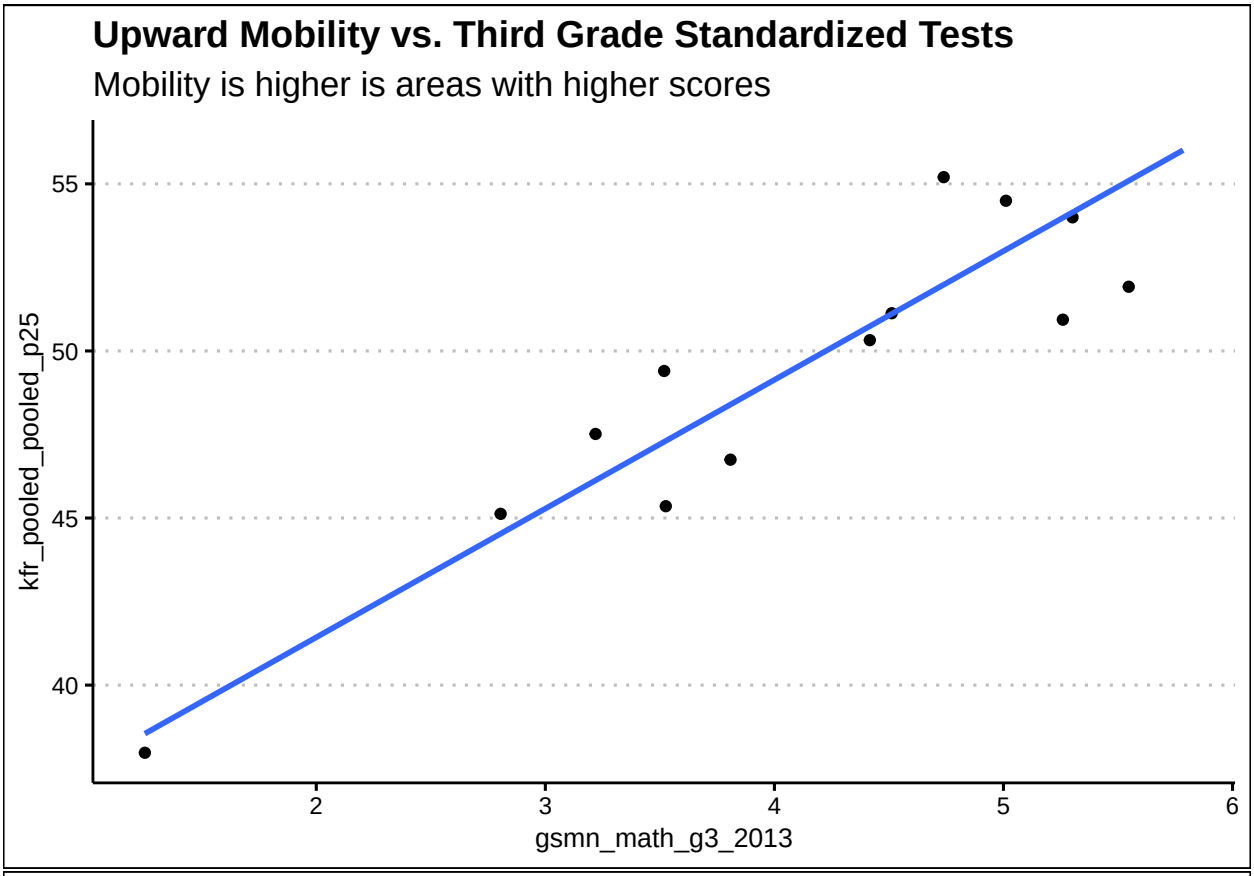
Question 7

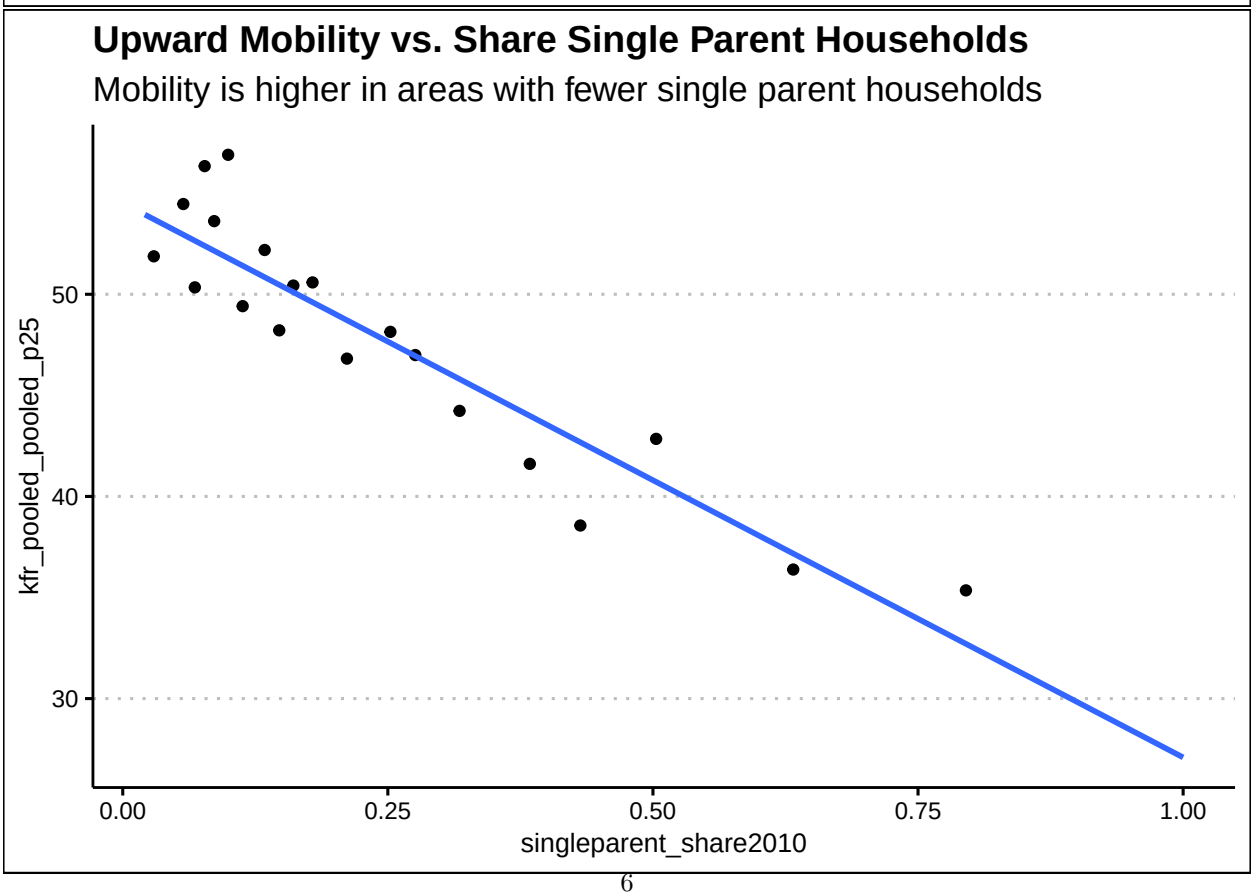
HOLC_grade	avg_kfr_pooled_pooled_p25
A	44.01
B	42.46
C	39.87
D	36.16

The averages of the kfr_pooled_pooled_p25 for majority A, B, C, and D HOLC neighborhoods are shown in the table above. It seems that in neighborhoods where redlining was worse upward mobility is lower than in neighborhoods where redlining was not prevalent.

Question 8

Part a


Upward Mobility vs. Third Grade Standardized Tests
Mobility is higher is areas with higher scores
kfr_pooled_pooled_p25
55
50
45
40
2
3
4
5
6
gsmn_math_g3_2013


Upward Mobility vs. Share Single Parent Households
Mobility is higher in areas with fewer single parent households
kfr_pooled_pooled_p25
50
40
30
0.00
0.25
0.50
0.75
1.00
singleparent_share2010

- There seems to be a strong relationship between the kfr_pooled_pooled_25 variable and the gsmn_math_g3_2013 variable, which measures the average school district level sstandardized test scores in third grade in 2013 (where 3 is where third graders should be, 1 would be where first graders should be, etc.) It appears that upwarad mobility is higher in areas where students perform better on these standardized tests.
- There seems to be a strong relationship between the kfr_pooled_pooled_25 variable and the single_parent_share2010 variable, which measures the share of single-headed households with children 2006-2010. It appears that upward mobility is higher in areas with a smaller porportion of single parent households. Note: I could have used the 1990 or 2000 measure for this variable, but I chose to use the 2010 one so it is consistent with the test score meassure.

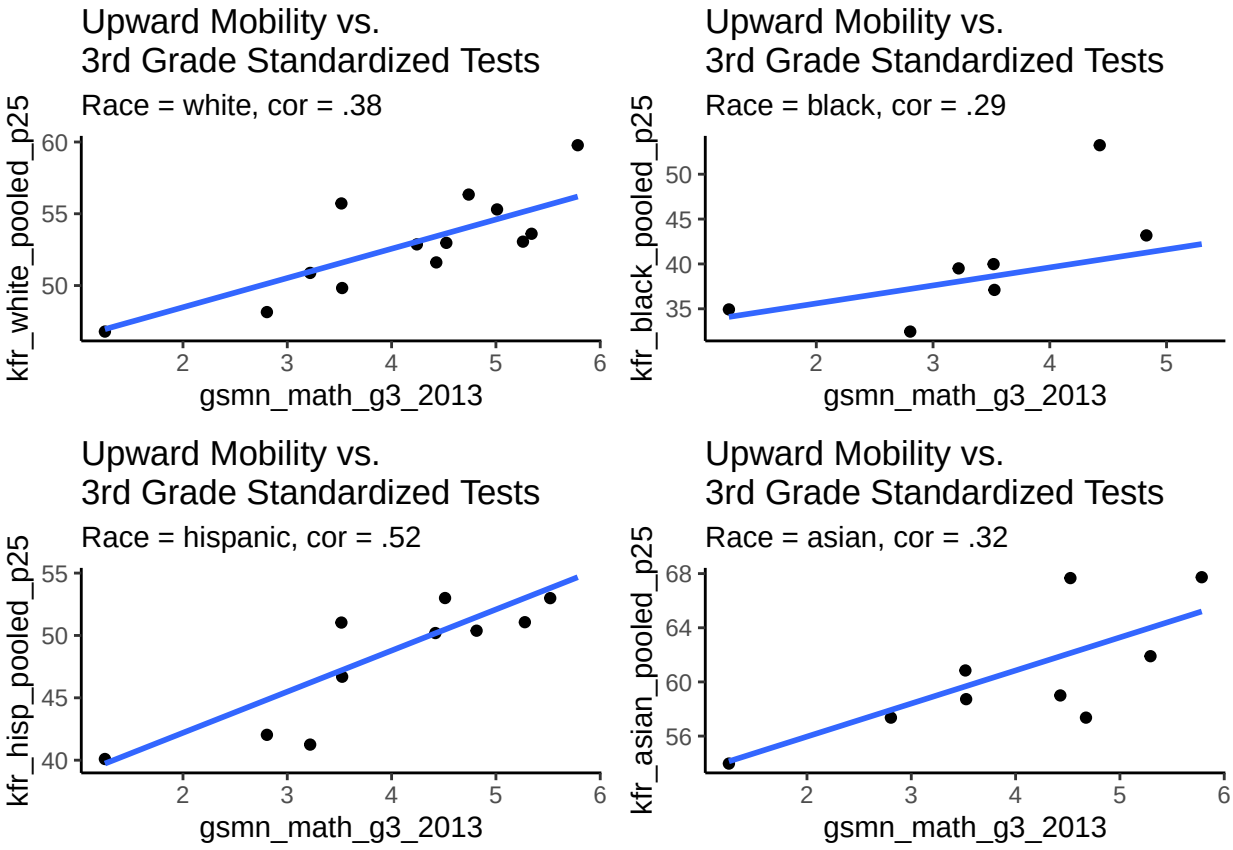
Part b

- The correlation of kfr_pooled_pooled_p25 and gsmn_math_g3_2013 = 0.6488575
- The correlation of kfr_pooled_pooled_p25 and singleparent_share2010 = -0.6804564

Question 9

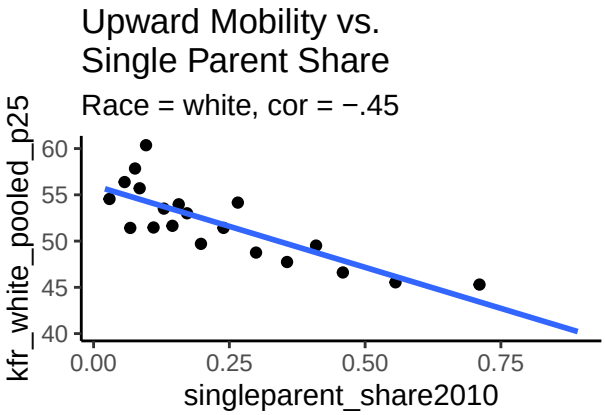
Third Grade Test Scores

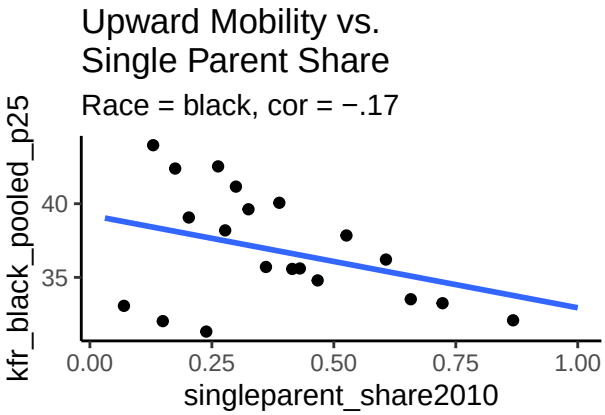
The graphs below show the relationship between upward mobility and 3rd grade test scores by race. The graphs are binned scatterplots and the correlations for the relationships can be found in the subtitle of the graphs. Looking at the graphs, it is evident that there are differences in the strength of the correlation between upward mobility and standardized test scores among different racial groups. The correlation between these two variables is strongest for hispanics, followed by whites, asians, and blacks.

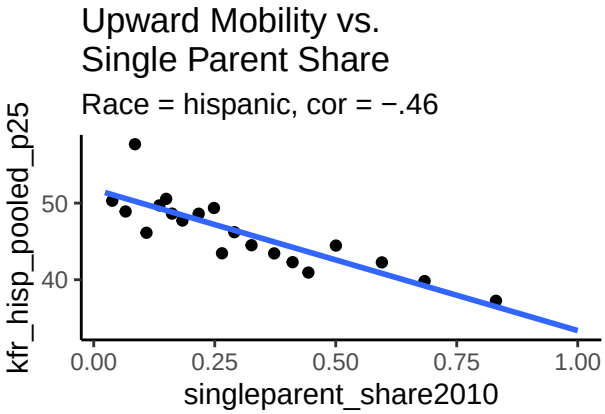


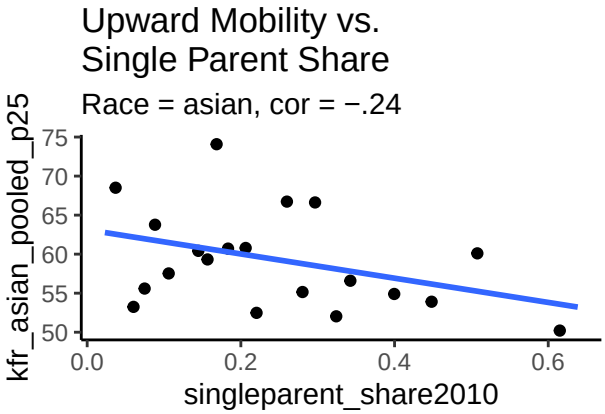
Single Parent Households

The graphs below show the relationship between upward mobility and share of single parent households by race. The graphs are binned scatterplots and the correlations for the relationships can be found in the subtitle of the graphs. As with what we saw in the standardized test score analysis, there is variation in the correlation coefficients of upward mobility and single parent household among racial groups. The correlation is strongest for whites and hispanics, followed by asians and blacks.


Upward Mobility vs.
Single Parent Share
Race = white, cor = −.45
kfr_white_pooled_p25
60
55
50
45
40
0.00
0.25
0.50
0.75
singleparent_share2010


Upward Mobility vs.
Single Parent Share
Race = black, cor = −.17
kfr_black_pooled_p25
40
35
0.00
0.25
0.50
0.75
1.00
singleparent_share2010


Upward Mobility vs.
Single Parent Share
Race = hispanic, cor = −.46
kfr_hisp_pooled_p25
50
40
0.00
0.25
0.50
0.75
1.00
singleparent_share2010


Upward Mobility vs.
Single Parent Share
Race = asian, cor = −.24
kfr_asian_pooled_p25
75
70
65
60
55
50
0.0
0.2
0.4
0.6
singleparent_share2010