The Educational Consequences of Growing Up Unequal:
Examining the relationship between local income inequality and educational attainment

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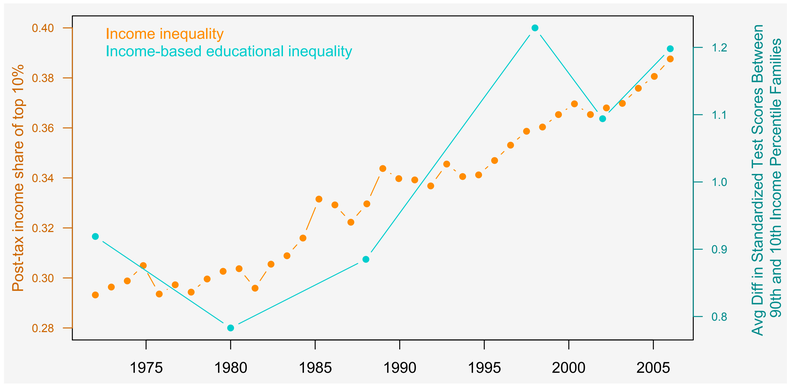
ABSTRACT

This paper examines the relationship between income inequality and income-based educational achievement gaps in the U.S., both of which have increased over the past several decades. Motivated by the theory of relative deprivation (Davis 1959), I hypothesize that people who grew up in areas of high income inequality with low family incomes are likely to have lower levels of educational attainment compared with those who were exposed to less income inequality. I use the Gini coefficient to examine income inequality at multiple geographic levels, raising the question: what level of aggregation of inequality matters? I find weak evidence for a negative relationship between income inequality at the tract and county levels during adolescence and eventual educational attainment.

MOTIVATION

Coinciding increases in income inequality and income-based educational inequities at the national level



DATA & METHODS

I use restricted data from the **Panel Study of Income Dynamics** to measure educational attainment in adulthood and those same individuals' geographic location during adolescence, parental income, and parental education. My sample consists of all respondents who were in the dataset in 2005 listed as a child of a head of household or head's spouse and who were 21-25 years old in the 2015 sample. There are 1,407 such individuals, and I divide this sample in half to create "low-income" and "high-income" groups, based on their parents' income in 2005. I then merged in community characteristics (Gini coefficient, median household income, race/ethnicity composition, educational attainment) at the census tract and county levels from **American Community Survey** 5-year estimates from 2006-2010 (the first available tract-level data).

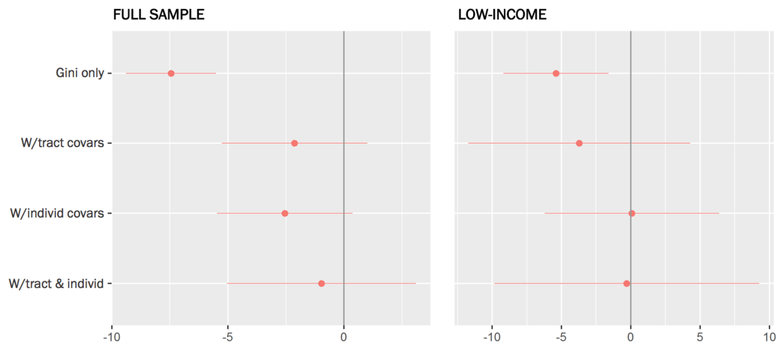
I use least squares regression with clustered standard errors at the geographic level at which Gini coefficient is estimated to account for correlated errors across observations within the same area.

RESULTS

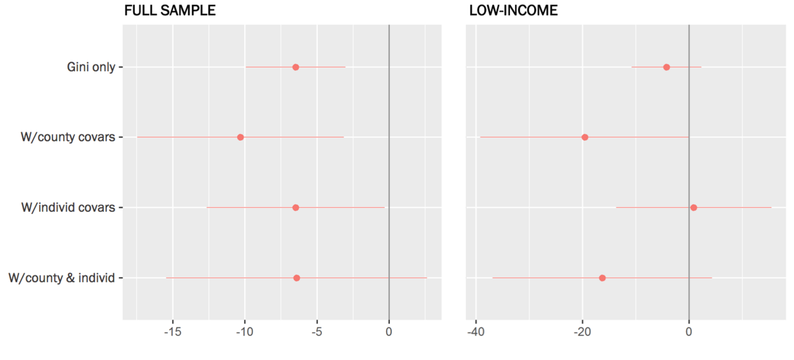
Negative relationship between tract-level childhood income inequality and educational attainment as adult

Multivariate models with educational attainment (in years) as DV

Estimates for Gini coefficient in tract-level models



Estimates for Gini coefficient in county-level models



CONCLUSIONS

Overall, more income inequality in childhood is associated with fewer years of education for most models run on the full sample. Income inequality tends to be negatively associated with low-income educational attainment and positively with high-income attainment.

In models with controls for childhood community characteristics, income inequality is insignificant and negative in the census tract-level models but it is significant and negative in the county-level models: a 0.1 unit increase in the Gini (range 0-1, with 1 most unequal) is associated with about one year less of schooling. For low-income respondents, this effect doubles. For high-income respondents, the Gini estimate is insignificant but positive.

In models with controls for individual-level characteristics (race, parental income, parental education), both tract- and county-level models show a small, significant negative impact of income inequality on educational attainment.

NEXT STEPS

1. Increase sample size by extending analysis over more years
2. Estimate maximum likelihood models with outcome variables being whether or not the person graduated from high school, whether or not the person enrolled in college, and whether or not the person holds a bachelor's degree (modeling based on Susan Mayer's 2001 paper which examines the relationship between state-level income inequality and educational attainment)
3. Estimate models with other geographic levels of aggregation, such as core-based statistical area (CBSA) and state
4. Consider alternative mechanisms linking income inequality and educational disparities, since relative deprivation theory hypothesis cannot be tested

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Mayer, S. E. (2001). How Did the Increase in Economic Inequality between 1970 and 1990 Affect Children's Educational Attainment? *American Journal of Sociology*, 107(1):1-32.

Panel Study of Income Dynamics, restricted use data. Produced and distributed by the Survey Research Center, Institute for Social Research, University of Michigan, Ann Arbor, MI (2018).

*Data sources for **MOTIVATION** chart:*

Piketty, T., Saez, E., and Zucman, G. (2018). Distributional National Accounts: Methods and Estimates for the United States. *The Quarterly Journal of Economics*, 1-57. Data downloaded from wid.world (2018).

Reardon, S. F. (2011). Gap Between the Rich and the Poor : New Evidence and Possible Explanations. In Duncan, G. J. and Murnane, R., editors, *Whither opportunity?: Rising inequality, schools, and children's life chances*, chapter 5. Russell Sage Foundation.