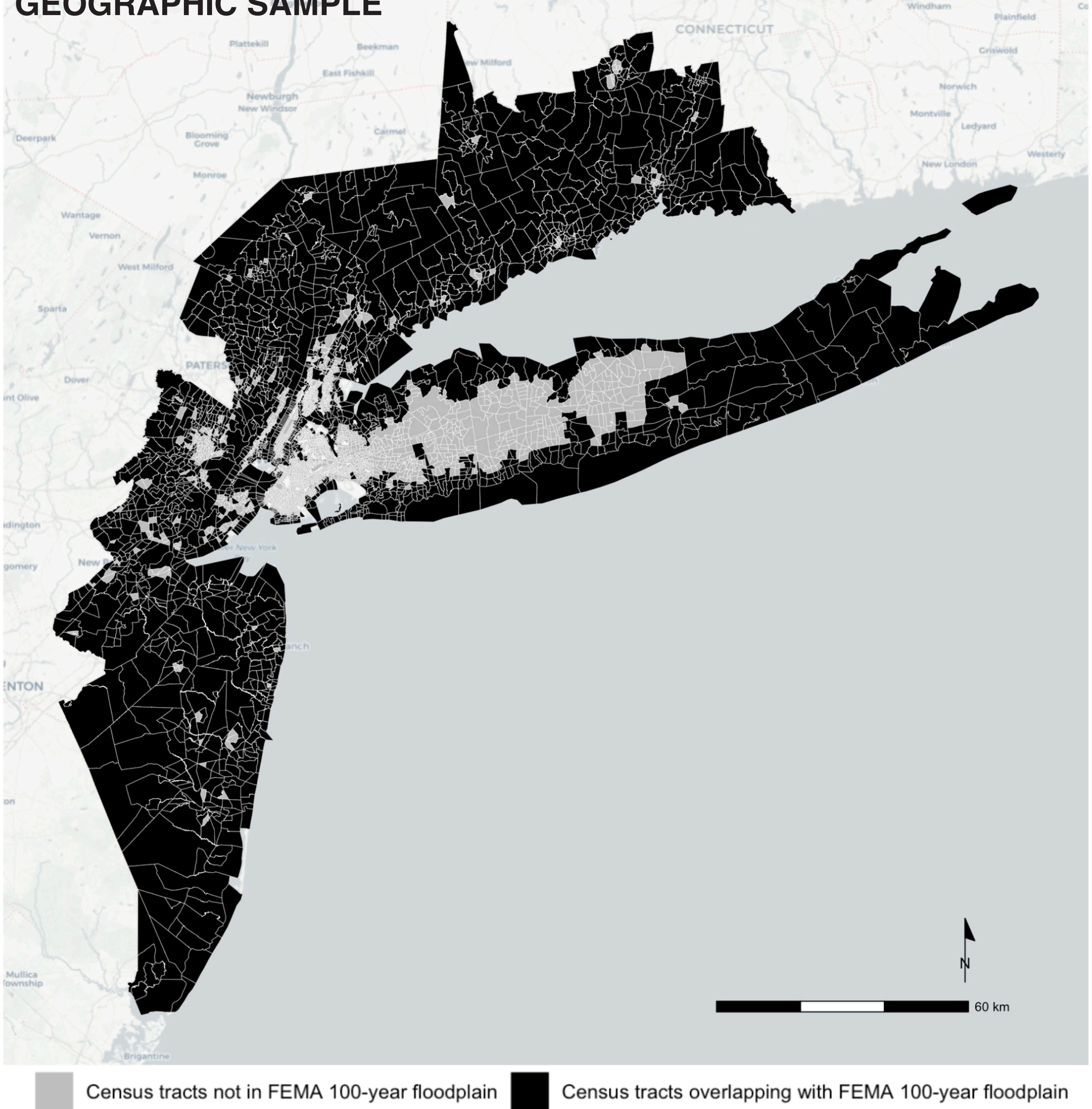


# POST-DISASTER POPULATION CHANGE

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## RESEARCH QUESTION

How well do demographic factors predict post-hurricane Sandy population change? Which factors are most strongly correlated with population change?



## KEY TAKEAWAYS

- There is a significant positive relationship between percent renter and percent population change.
- There is a significant positive relationship between a tract being within the FEMA 100-year flood zone and percent population change.
- There were no other significant relationships.

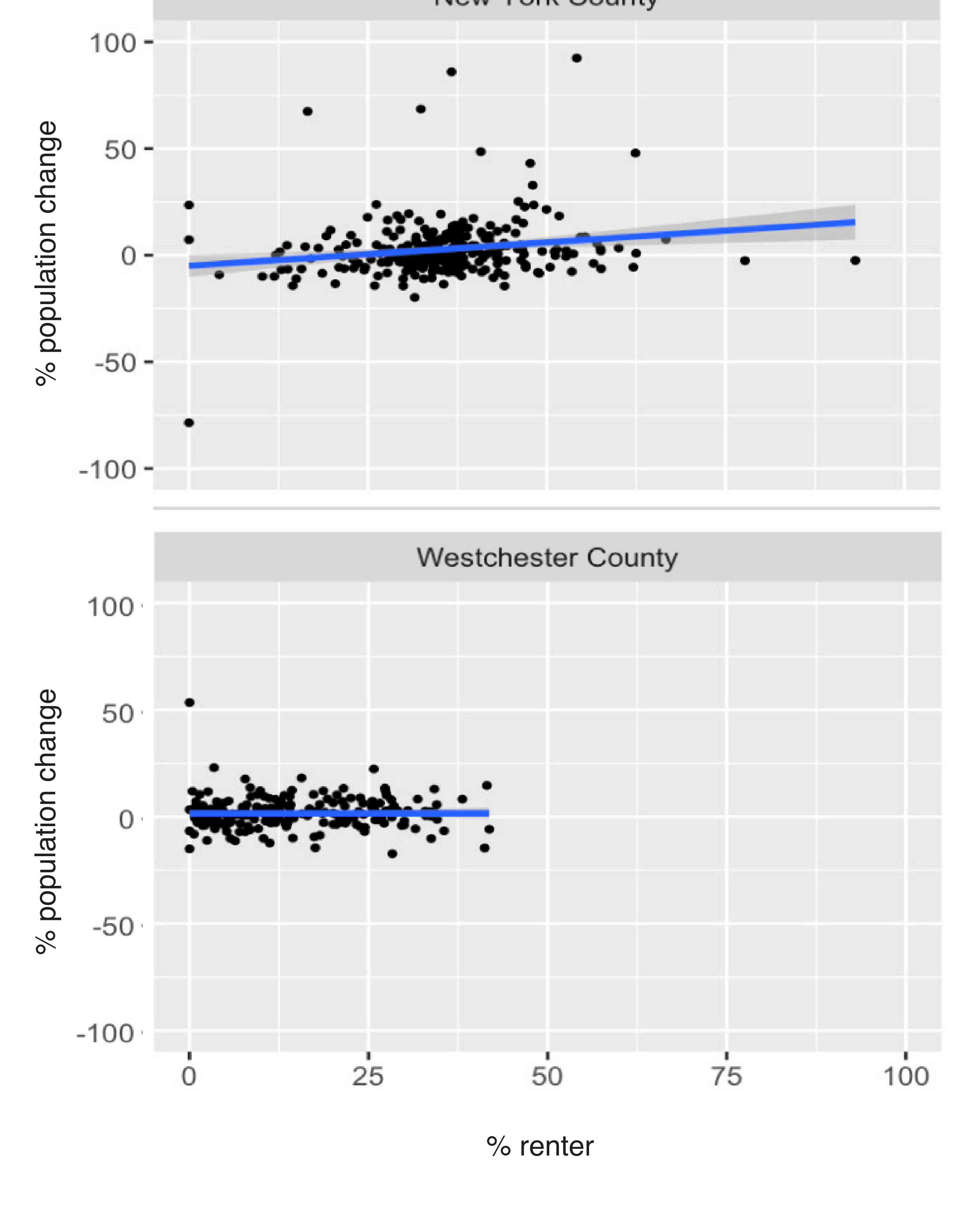
	Initial (pct pop change)	Centered (pct pop change)	Centered (pct pop change*100)
Constant	0.35 (p = 0.85)	1.86 *** (p = 0.00)	-448.67 (p = 0.73)
% Black	-0.01 (p = 0.60)	-0.01 (p = 0.52)	-1.39 (p = 0.46)
% White	-0.01 (p = 0.69)	-0.01 (p = 0.66)	-0.78 (p = 0.66)
% Asian	0.02 (p = 0.32)	0.02 (p = 0.45)	1.46 (p = 0.48)
% Hispanic	0.00 (p = 0.87)	0.00 (p = 0.93)	-0.18 (p = 0.89)
% Renter	0.09 *** (p = 0.00)	0.09 *** (p = 0.00)	9.47 *** (p = 0.00)
Median Income	0.00 (p = 0.81)	0.00 (p = 0.45)	0.00 (p = 0.10)
Median Income log			-79.62 (p = 0.18)
Median Property Value	0.00 (p = 1.00)	-0.00 (p = 0.83)	-0.00 (p = 0.10)
Median Property Value log			101.56 (p = 0.10)
Majority Vote Republican	-0.71 (p = 0.09)		
Flooded Tract	0.64 * (p = 0.03)		
N	4371	4371	4371
R2	0.02	0.02	0.02

\*\*\* p < 0.001; \*\* p < 0.01; \* p < 0.05.

## DISCUSSION

Our multivariate regression analysis demonstrated that whether a tract was flooded or not (flooded = y) was significantly correlated with population change (p<0.05) and an increase in rentership was very significantly correlated with population change (p<0.001). These results held true even when the data was mean-centered, scaled, or otherwise transformed.

While rentership emerged as our most significantly correlated variable to population change, we question the degree to which this relationship is correlated with hurricane Sandy. By splitting up the bivariate relationship between rentership and population change by county, we can see that there are significant outliers in positive change in population in New York County and Kings County (Manhattan and Brooklyn in New York City) and that these may have a disproportionate influence on the correlations between overall demographics and overall population change.



In conclusion, we feel that the range of factors and geographies included in our study may be too broad to demonstrate a strong correlation between demographics and displacement due to Hurricane Sandy between 2011 and 2013. We believe the study may be improved by looking at a shorter time frame or in being able to narrow census tracts to those that received direct aid or experienced quantifiable impacts from Hurricane Sandy.