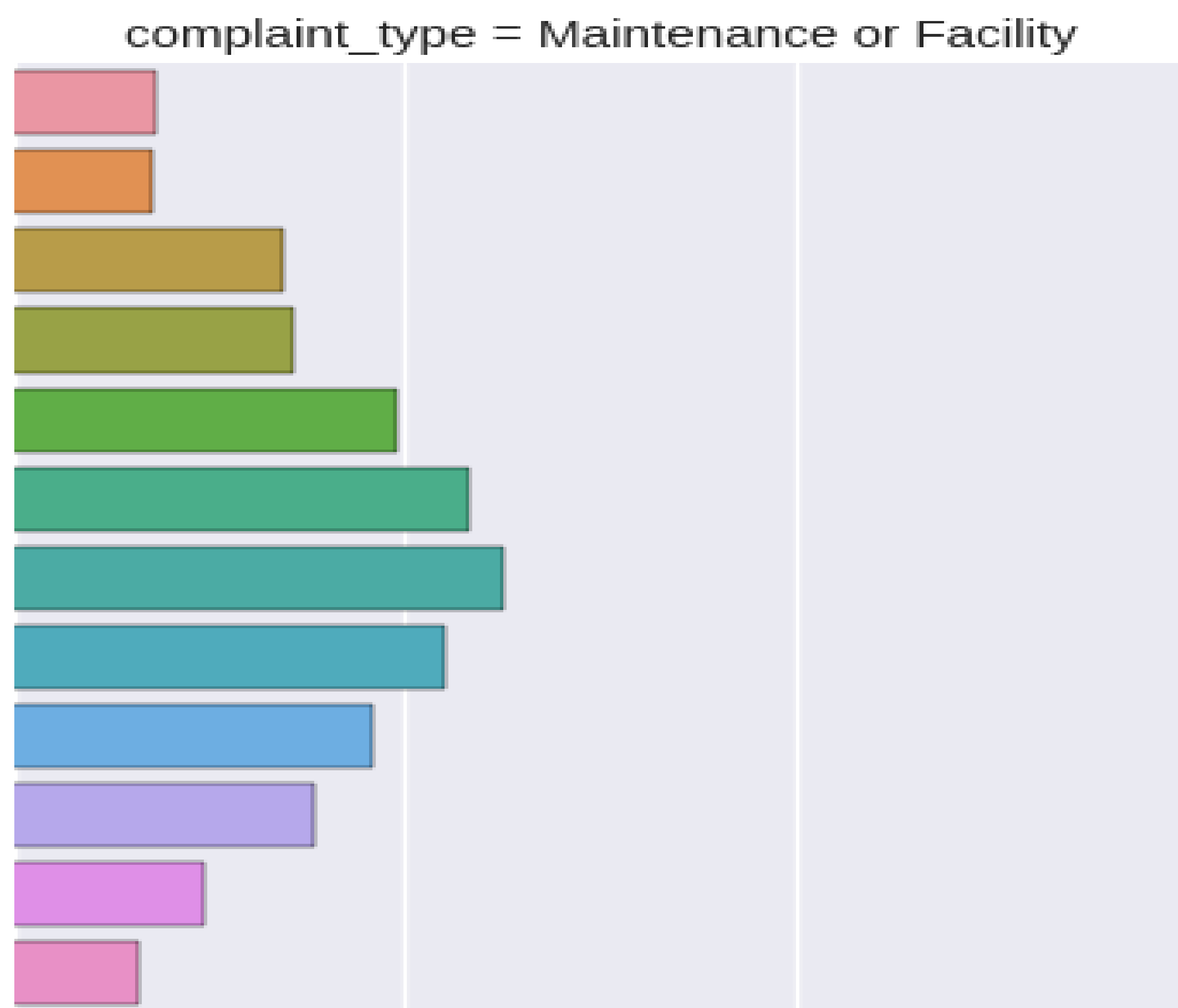


Quantifying Peace of Mind

Sam Blumenthal, Tom Hervieu, Marvin Lee, Suneet Mishra, Soham Mukhopadhyay, Jen Newell

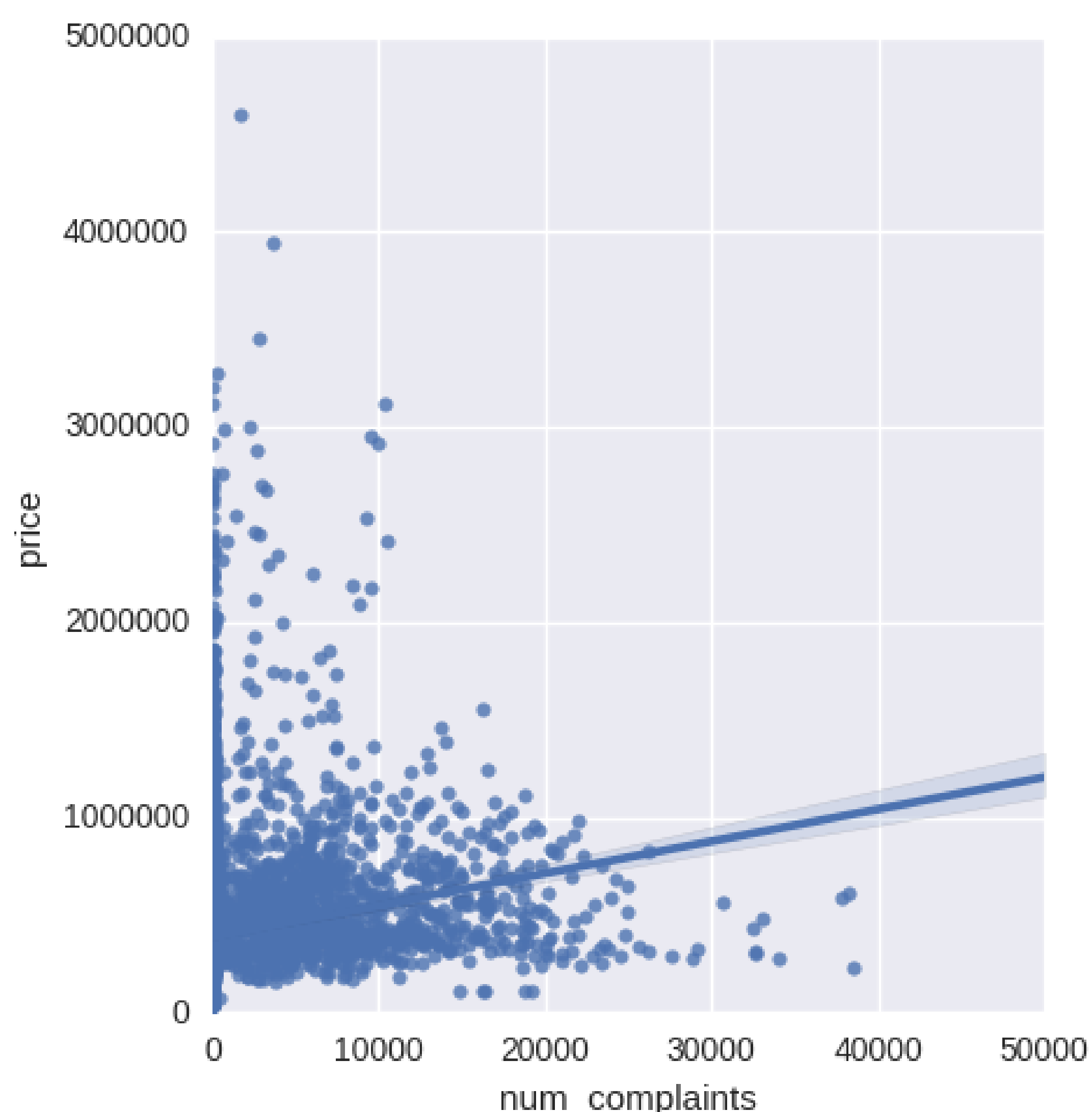
Summary

We gathered 311 data (non-emergency complaints) in NYC and LA and performed analysis to determine if the frequency and types of 311 calls had an effect on the housing markets. We hoped that our analysis and conclusions help those looking to move make better decisions.



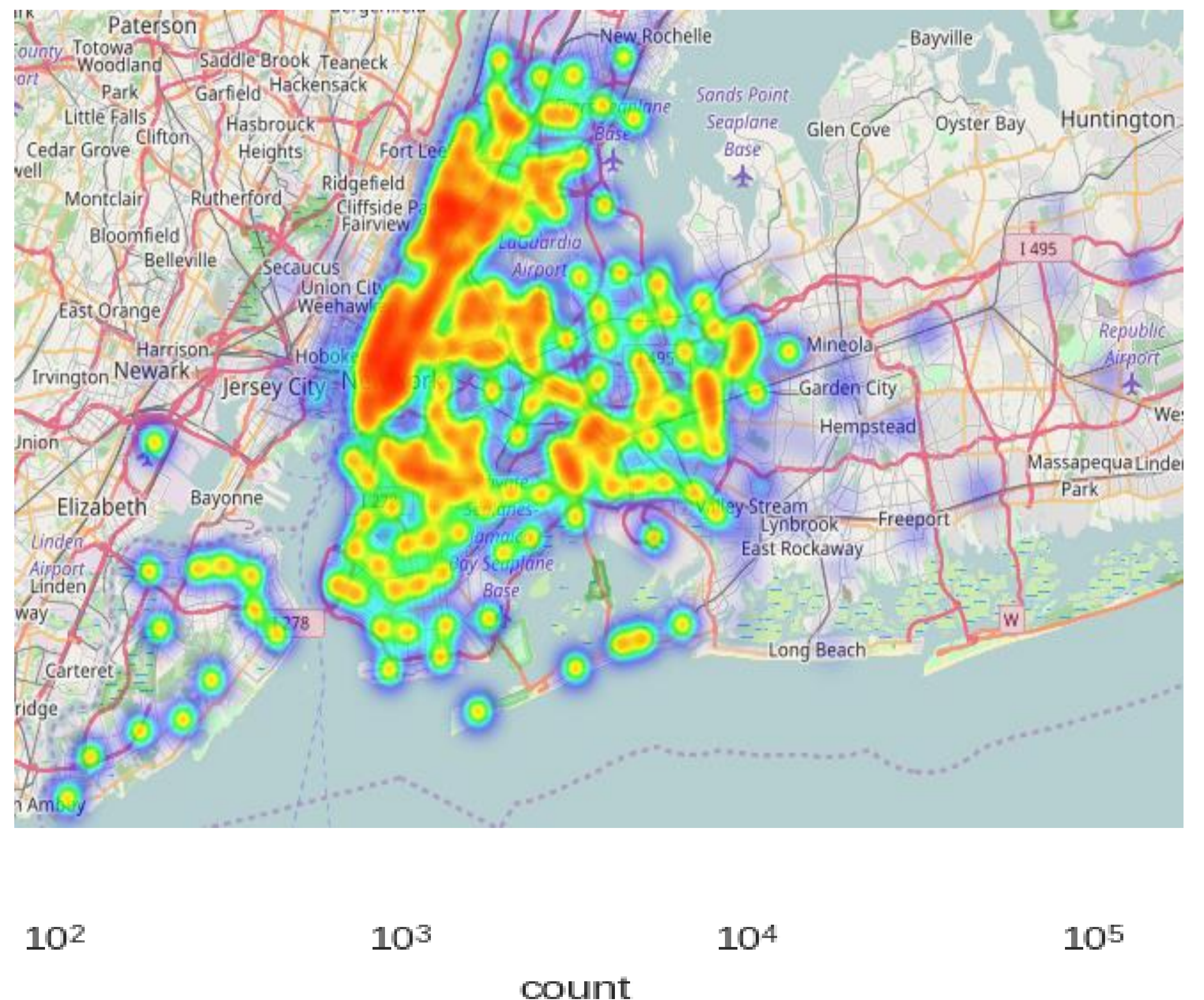
Data

We downloaded csv files from the websites for NYC and LA, then analyzed 7 million data entries from the years 2012-2015. We grouped the data based on zip codes and types of 311 complaints in order to spot patterns and perform our analysis



Approaches

We performed the following regressors: Random Forest, Adaboost, Gradient Boost, Ridge, and Lasso based on parameters such as the type of 311 call, frequency (by month), and volume of 311 incidences. Our approach is novel and has the potential to open the door for further analysis with more complex models.



Experiments and Results

The majority of our analysis was based on regression, including Random Forest and Lasso regressors. Due to the simplicity of our model, we cannot identify a strong enough correlation between just 311 call incidences and real estate values- the R^2 value was only 0.03. However, the linear regression yielded a statistically significant p-value across all confidence levels ($3.59e-54$), meaning our model predicts each complaint increases real estate value by \$16.44. This matches our intuition that higher income areas are more likely to report problems that fall under the umbrella of 311 incidences, but goes against our initial hypothesis that there is some quantity people are willing to pay in pursuit of tranquility.