

Examining Food Safety Equity Across Environmental Justice Communities in New York City



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Introduction

The objective of this research project is to find out if NYC restaurants are providing the same food safety standards across different communities. Environmental Justice Communities (EJCs) in New York City face many environmental hazards often resulting from historical and systemic inequities based on race, ethnicity, income, or other factors. This research investigates how these systemic issues relate to restaurant food safety. In a city where people eat out 25.79% of the time access to safe food is an important part of overall public health. Through identifying where disparities exist in restaurant food safety it will make it possible to propose policies that could improve health outcomes in these communities.

Research questions:

- How are systemic issues in NYC infrastructure affecting food safety ratings in NYC restaurants particularly in areas where environmental justice communities are located?
- What policies can be put in place to make food safety more equitable?

Methodology

Restaurant inspection data were collected from the NYC Health Department's ABC Eats website using UiPath automation. The restaurants were categorized as either located within an Environmental Justice Community (EJC) or outside of one, based on the Climate and Economic Justice Screening Tool (CEJST) provided by the NYC Mayor's Office of Climate and Environmental Justice. Indoor environmental complaints data were obtained from NYC Open Data and combined with U.S. Census data on income and population size to calculate complaint rates per 1,000 residents within each census tract. To identify the types of violations with the greatest disparities, the percentage differences between EJC and non-EJC restaurants were calculated and ranked. Finally, all datasets were cleaned, organized, and analyzed in Tableau to compare inspection scores, complaint rates, and violation patterns.

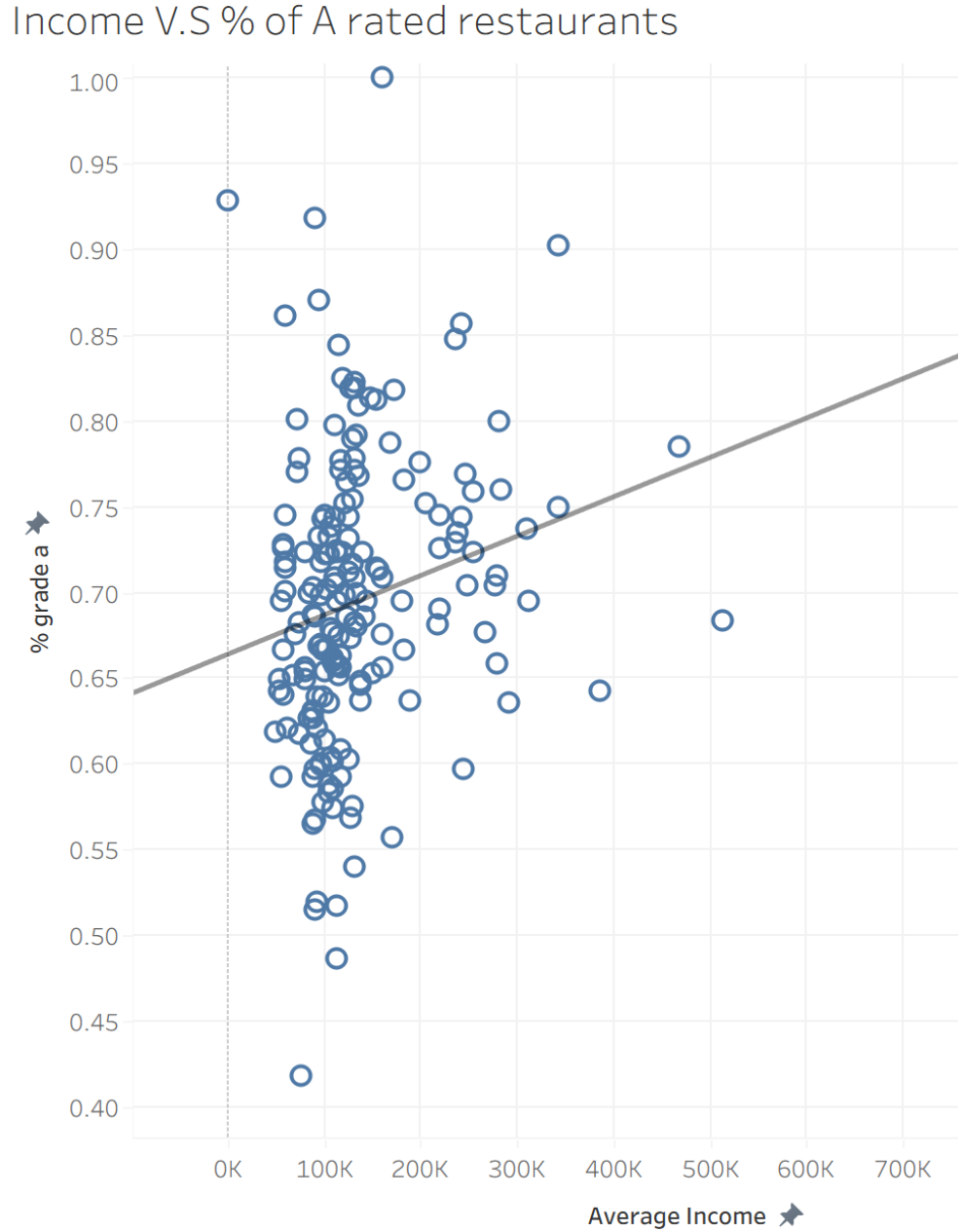
Results & Discussion

When examining the percentage of A-rated restaurants in each New York City zip code in relation to average income, there appeared to be a strong correlation, with a p-value of 0.006. This suggests that higher-income areas tend to have better food safety outcomes. Additionally, restaurants in Environmental Justice Communities (EJCs) had 6.99% more violations compared to their non-EJC counterparts. Across multiple categories of indoor environmental complaints, EJCs consistently performed worse. What most clearly highlighted the role of wealth as a barrier to food safety, however, was the nature of the violations themselves. In EJCs, the most common violations were those that required significant financial resources to remediate, such as infrastructure upgrades or pest control.

In contrast, many of the violations more common in non-EJCs could be addressed through administrative changes that did not require major financial investment.

Most Common Violations	
EJC's	NON EJC's
115% more violations for light fixtures not being shielded or shatterproof to protect against accidental breakage	67% more violations for no sodium warning icon where required
112% more violations for evidence of rats	67% more violations for obstruction of department personnel
104% more violations for sewage disposal system not provided, inadequate, or unapproved	67% more violations for ashtrays in non-smoking areas

Difference in indoor environmental complaints from EJC to Non EJC's	
Type of indoor environmental complaint	Percent difference between the number of complaints Per 1000 People in Population of EJC's and Non EJC's
Mold	1.27% higher for EJC's
Asbestos	2.85% higher for EJC's
Indoor sewage	5.70% higher for EJC's
Indoor air quality	2.59% higher for EJC's
Restaurant Inspection Scores Difference	
Average Score	6.99% higher for EJC's



Conclusion & Impact

The Climate & Economic Justice Screening Tool (CEJST) used in this research to identify federally disadvantaged areas was implemented by President Biden in 2022 in order to help identify regions in need of federal funding. However, this program has recently been dismantled by President Trump in January of 2025. After looking at these results it appears that there is a disparity between the indoor environmental conditions of those in environmental justice communities are worse than other areas. Therefore, there is a need for the Climate & Economic Justice Screening Tool to not only be brought back but also for federal funding to be put to help decrease this disparity in public health and safety. The most common types of violations in both communities is also very telling since most of the violations in EJC's require monetary resources demonstrates how critical funding is in these areas where businesses already face financial burden making building infrastructure improvements incredibly difficult. This is why there is a need for government intervention, such as implementing laws that offer low-interest loans for critical upgrades, including HVAC systems, sewage and drainage repairs, and mold remediation. Waiving violation fees for restaurants in environmental justice communities if they invest into remediating the problem. Improving the conditions in these establishments will increase the quality of the food consumed by people living in these environmental justice communities decreasing the public health risk in these areas.

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