

EXPLORING NYC DEPARTMENT OF HEALTH RESTAURANT INSPECTION RESULTS



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INTRODUCTION

New York City has thousands of restaurants, and health inspections are critical to ensuring public safety. Analyzing inspection scores over time helps understand how food safety practices have improved or worsened, and can inform future policy decisions.

Research Question: Are there measurable improvements in restaurant inspection scores over time, and what trends do these changes reflect about NYC's food safety practices?

DATA OVERVIEW

Dataset Name: DOHMH New York City Restaurant Inspection Results

Data Source: NYC Open Data Portal

Data Provided By: Department of Health and Mental Hygiene (DOHMH)

Created: August 1, 2014

Last Updated: May 31, 2025

Rows: 269,560

Columns: 28

Scope: Covers inspections from 2014 to 2025

Reference: <https://data.cityofnewyork.us/Health/DOHMH-New-York-City-Restaurant-Inspection-Results/43nn-pn8i/about> data

METHODOLOGY

Tools: Python, with libraries: pandas, matplotlib, seaborn

Data Cleaning:

- Converted date fields to datetime format
- Removed missing or invalid scores
- Selected seven key columns

Transformations:

- Filtering by borough: Brooklyn, Manhattan, Queens, The Bronx, Staten Island
- Filtered valid inspection grades and scores
- Grouped data by year, grade, and borough to calculate averages and percentages

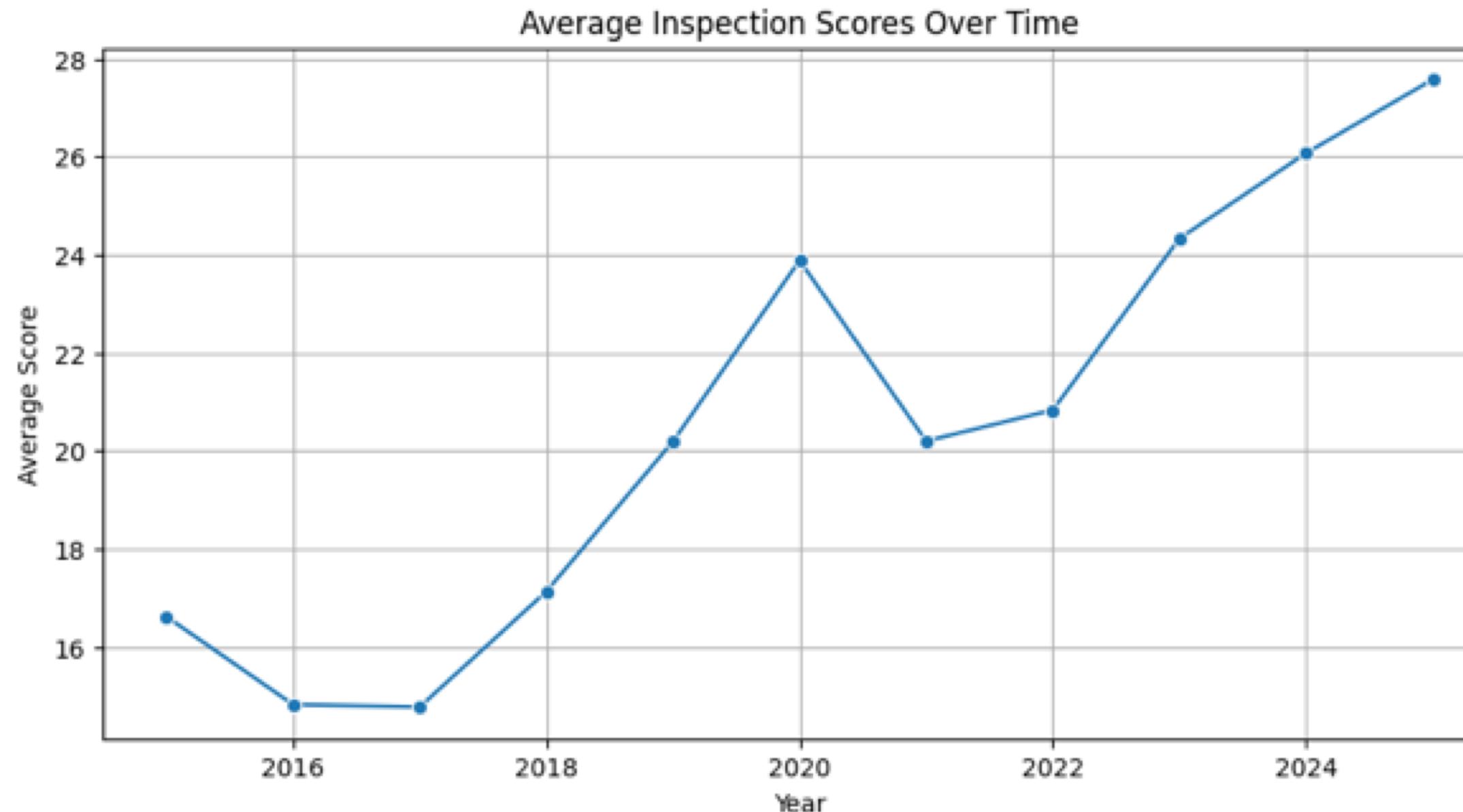
Visualizations:

- Line graphs: Trends in average scores, and trends in percentage of “A” and “C” grades
- Bar graphs: Average score by borough, and most common violation types

NYC RESTAURANT INSPECTION SCORE GRADING SYSTEM

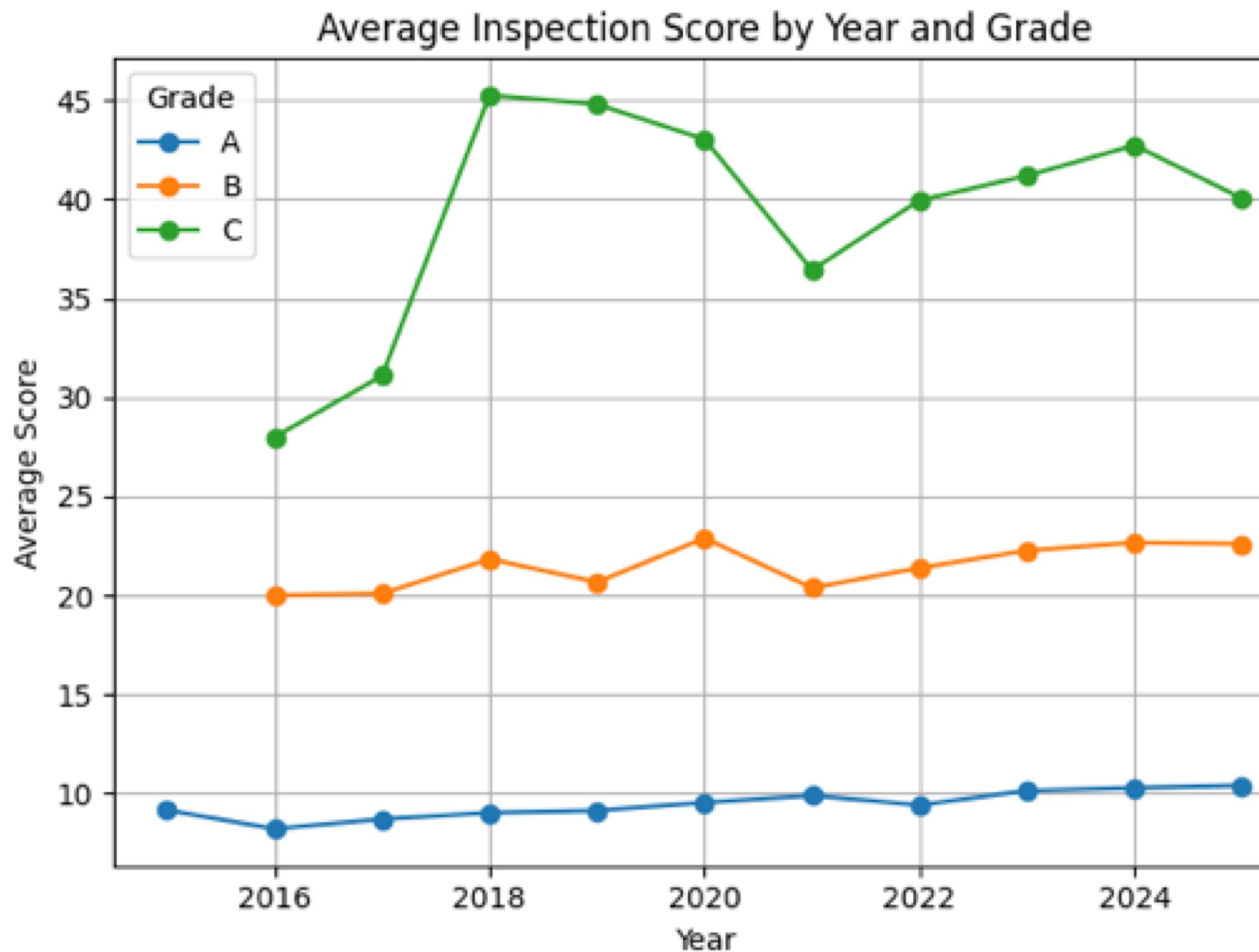
Score Range	Grade	Explanation
0–13	A	Best rating
14–27	B	Some violations
28 or more	C	Many violations

FINDINGS: AVERAGE SCORES OVER TIME IN NYC



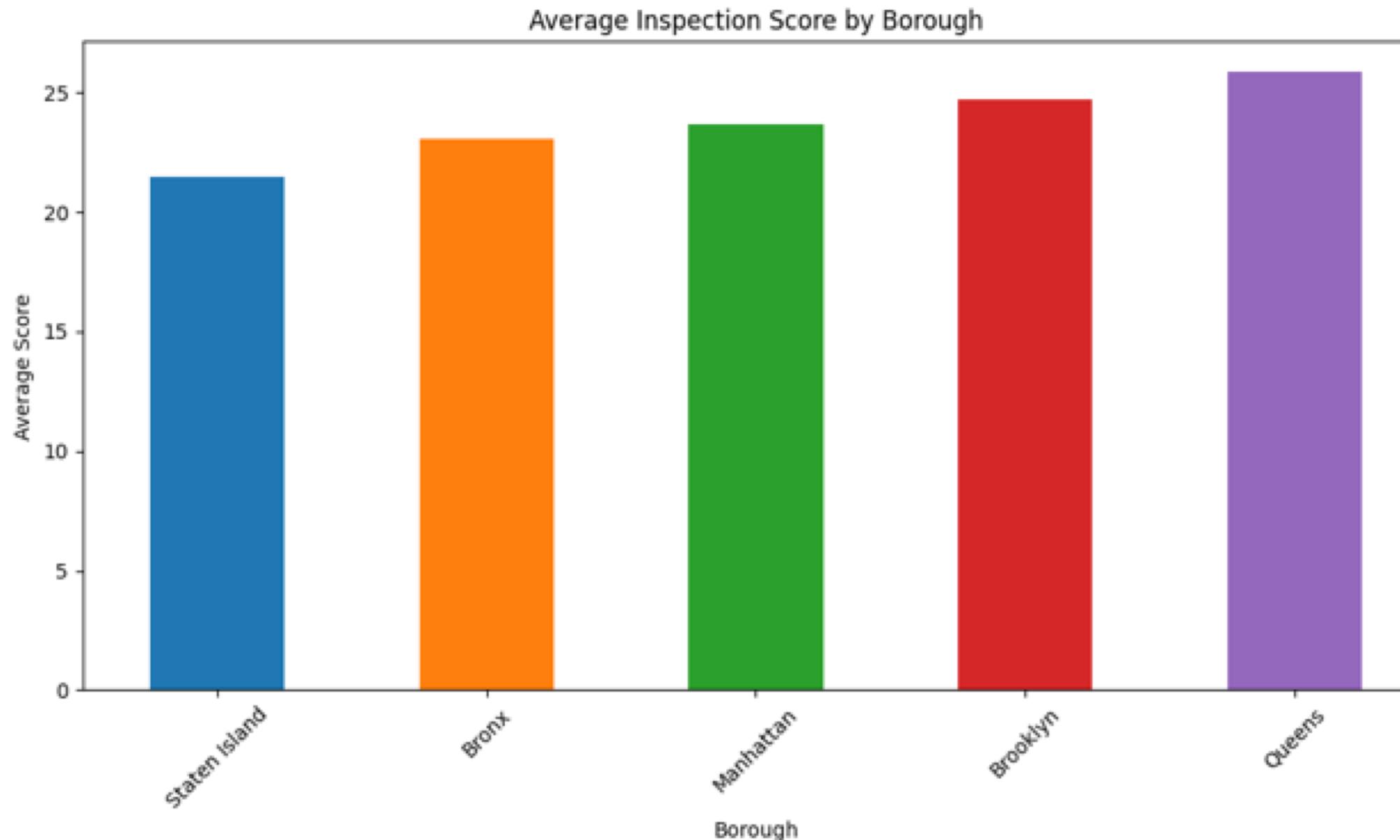
- The average inspection score has steadily declined over the years.
- The sharpest improvement occurred between 2014 and 2017, suggesting a potential policy or enforcement shift.
- After 2020, average inspection scores slightly improved, likely reflecting shifts in restaurant operations due to the COVID-19 pandemic.

FINDINGS: AVERAGE INSPECTION SCORE BY YEAR AND GRADE FOR NYC



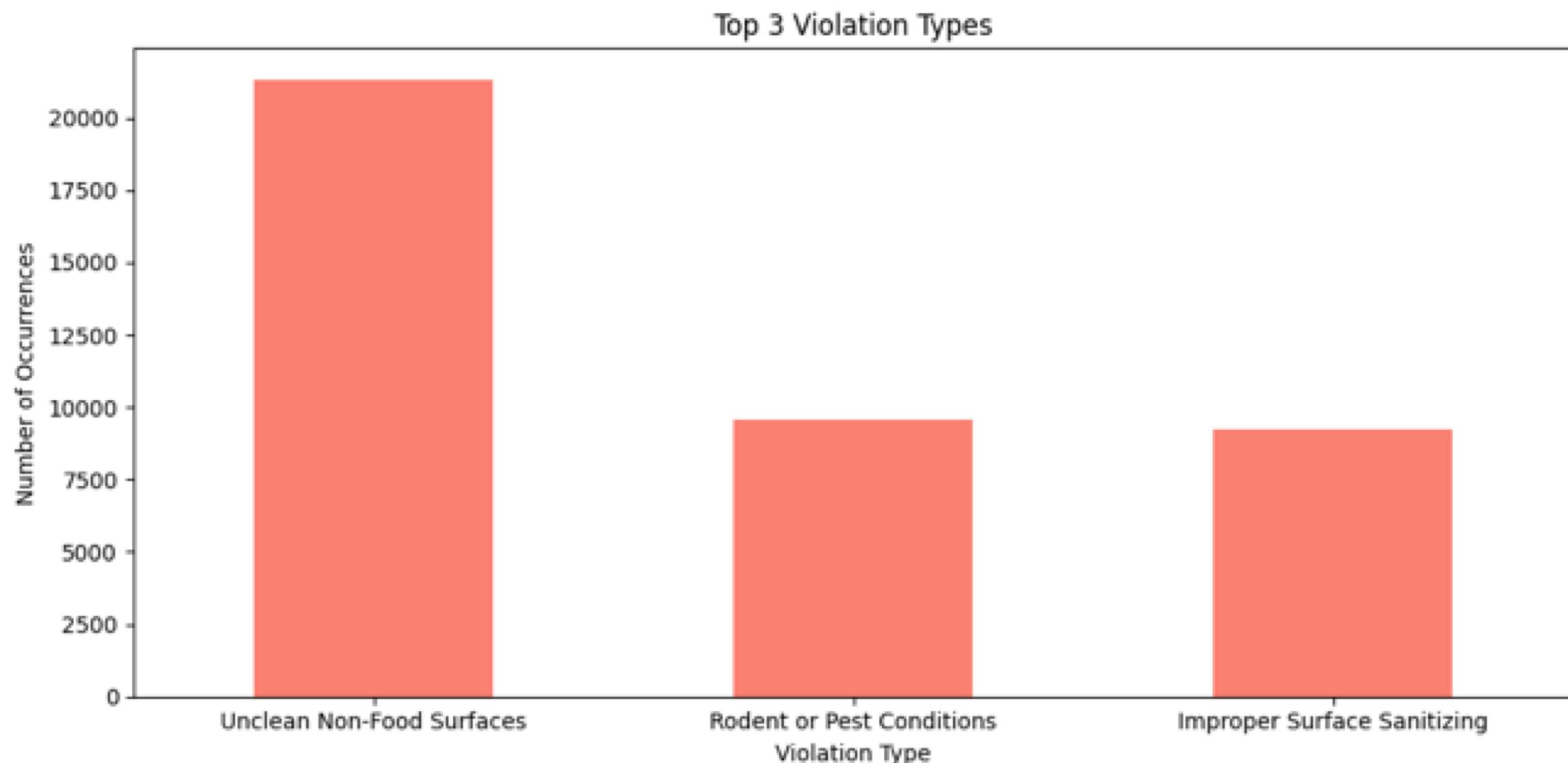
- Restaurants that receive an “A” grade consistently had the lowest average inspection scores.
- The score spread between “A,” “B,” and “C” grades narrowed slightly over time, which may indicate overall improvement across all grade categories.
- The sharp drop in “C” grade average scores after 2015 suggests that even poorly performing restaurants may be improving.

FINDINGS: INSPECTION SCORE BY BOROUGH



- Staten Island has the lowest average inspection score, indicating stronger overall food safety compliance.
- Queens has the highest average score, suggesting more frequent or severe violations compared to other boroughs.
- There is a slight performance gap of several points between boroughs, highlighting a disparity in food safety outcomes across NYC.

FINDINGS: TOP 3 VIOLATION TYPES



- Improper cleaning and maintenance of equipment remains the most cited violation, suggesting gaps in daily sanitation practices.
- Pest-related violations are still common, indicating ongoing structural or environmental issues in many establishments.
- Failure to sanitize food-contact surfaces results in a direct food safety risk and highlights the need for stronger staff training and oversight.

CONCLUSION

- Restaurant inspection scores have improved over the last decade, with the sharpest gains between 2015 and 2017.
- COVID-19 may have led to temporary improvements due to reduced dining and stricter sanitation protocols.
- Scores remain uneven across boroughs, pointing to the need for localized strategies and support.
- Top violations reflect recurring basic hygiene issues, suggesting targeted education and training could reduce risks.
- Overall, NYC's food safety system is progressing, but focused policy efforts are needed to close remaining gaps.



THANK YOU

