TO EAT OR NOT TO EAT...

An Analysis of Chicago Restaurants food inspections

PRESENTED BY
FRANK LINDWALL, JILL FARLEY & GENEVIEVE NIMETH

ABOUT THE CHICAGO FOOD INSPECTIONS DATA SET

"This information is derived from inspections of restaurants and other food establishments in Chicago from January 1, 2010 to the present. Inspections are performed by staff from the Chicago Department of Public Health's Food Protection Program using a standardized procedure. The results of the inspection are inputted into a database, then reviewed and approved by a State of Illinois Licensed Environmental Health Practitioner (LEHP)."

Source: https://data.cityofchicago.org/Health-Human-Services/Food-Inspections/4ijn-s7e5

RISK LEVELS EXPLAINED

"During the inspection, the health inspector will assess the types of food that will be prepared and the methods used for preparing and serving the food. This information will be used to assign a 'risk-level' – risk 1, 2 or 3 – to the food establishment. This risk level will be used to determine how frequent a food establishment needs to be inspected.

In general, risk 1 establishments are inspected twice per year, risk 2 establishments once per year, and risk 3 establishments every other year."

Source:
https://www.chicago.gov/city/en/depts/cdph/provdrs/healthy_restaurants/svcs/understand_healthcoderequirementsforfoodestablishments.html

Key Metadata

- AKA Name
- Facility Type
- Risk
- Inspection Date
- Inspection Type
- Results

THE PROCESS OF THE PROJECT

IMPORT

Data was originally pulled through the API, but due to the size and inconsistent errors with the call, the CSV file was utilized for analysis

CLEAN

Columns not relevant to analysis were dropped, object types were converted and variance in wording were streamlined

ANALYZE

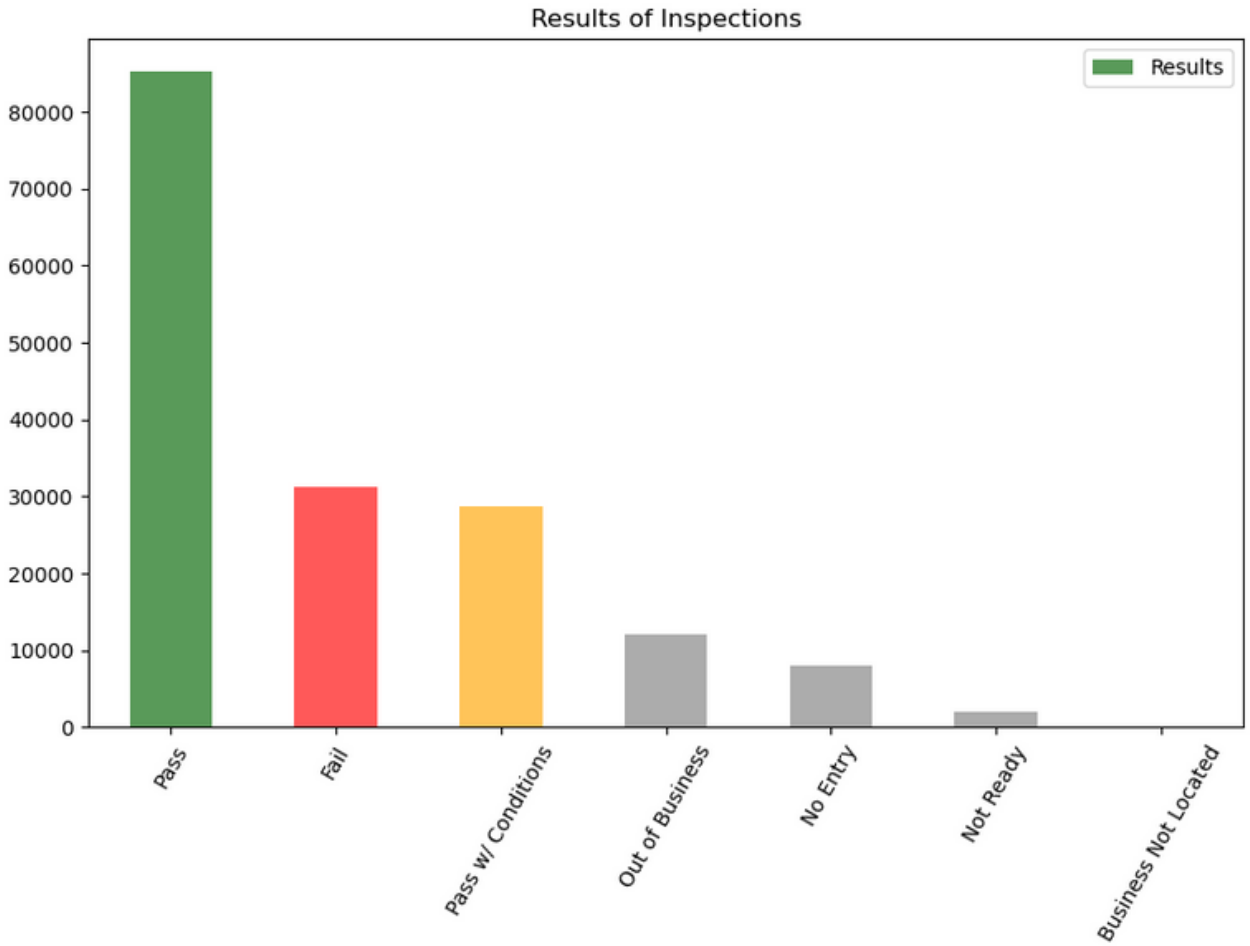
Explore the data to look at any trends or correlations between risk types and results

VISUALIZE

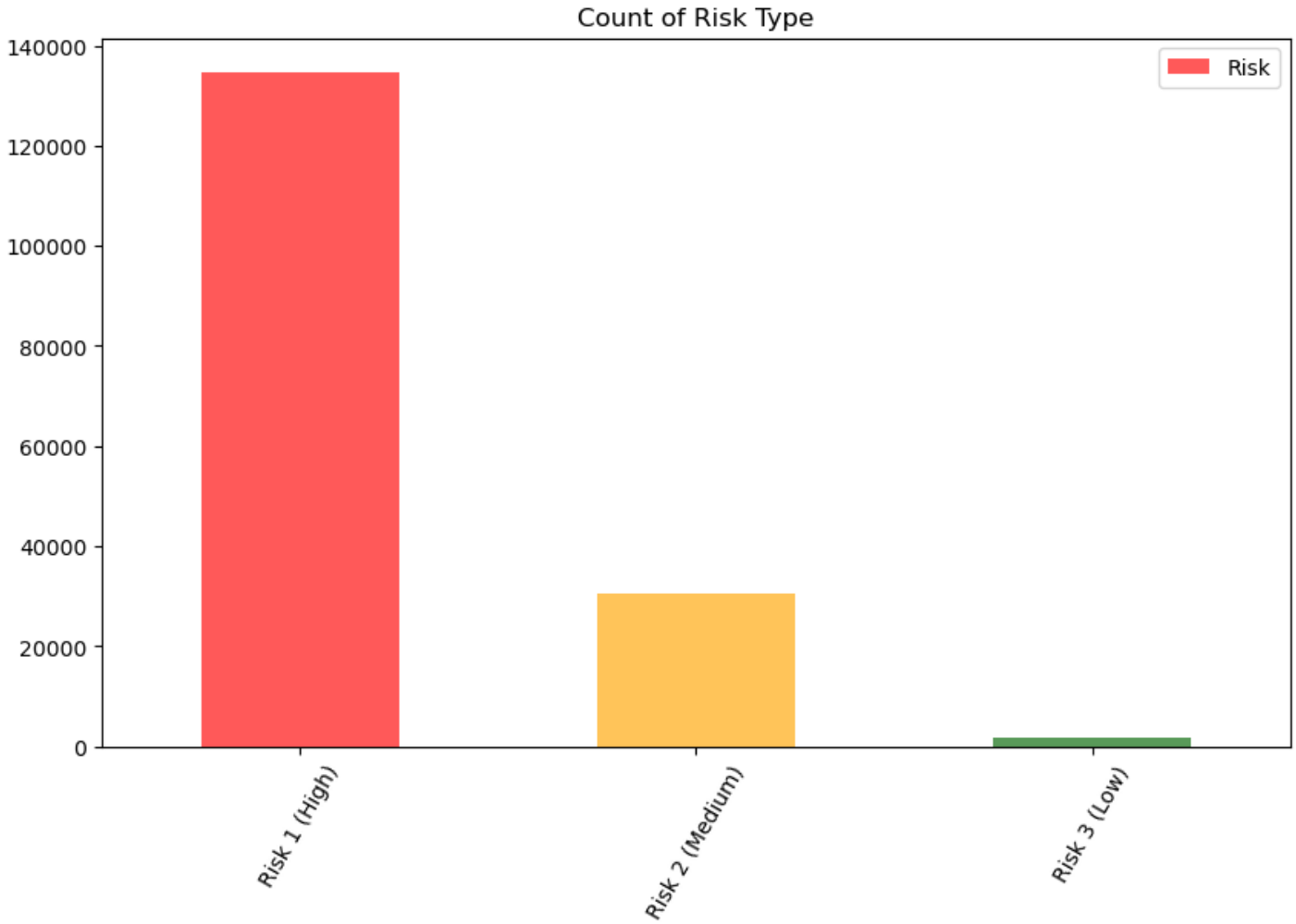
Using Matplotlib, chart the results of the analysis. An interactive map of restaurants from 2022 was created using Leaflet

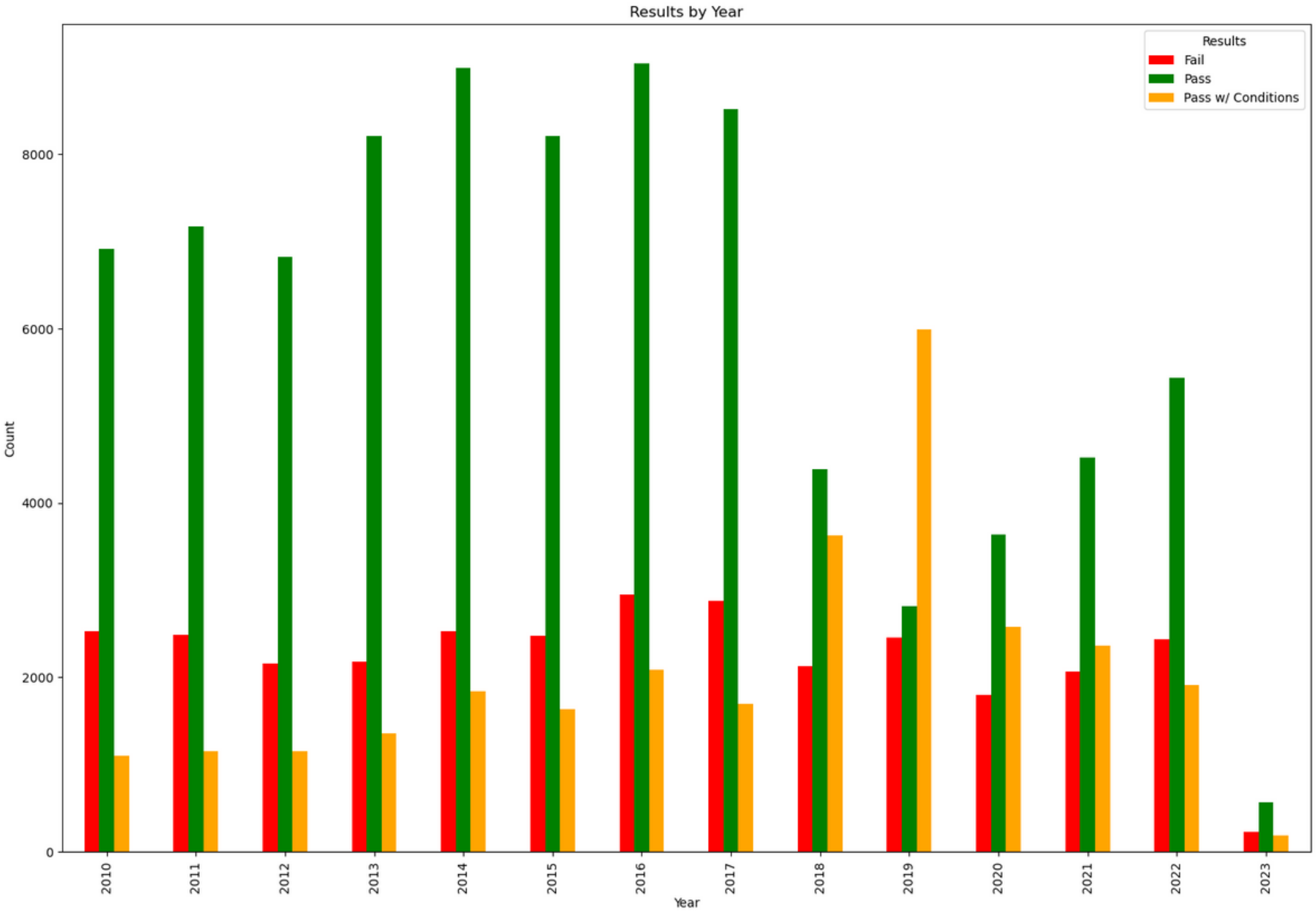
INSPECTION RESULTS

- 58.7% of restaurants that qualified for a result passed the inspection



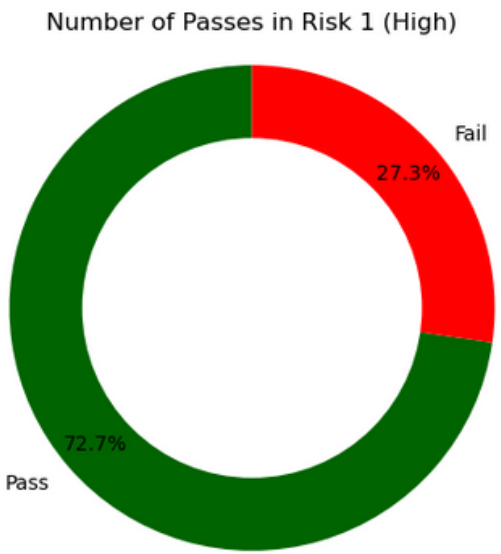
COUNT OF RISK TYPE

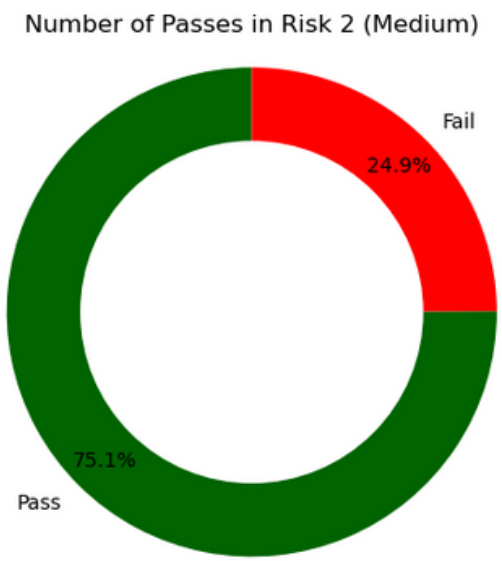


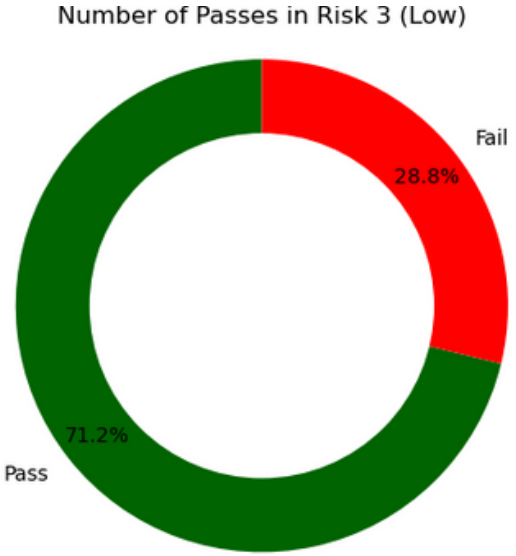

Results by Year
Results
Fail
Pass
Pass w/ Conditions
Count
0
2000
4000
6000
8000
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Year

PERCENTAGE OF PASSES BY RISK TYPE

- 72.7% of High Risk Restaurants Passed
- 75.1% of Medium Risk Restaurants Passed
- 71.2% of Low Risk Restaurants Passed





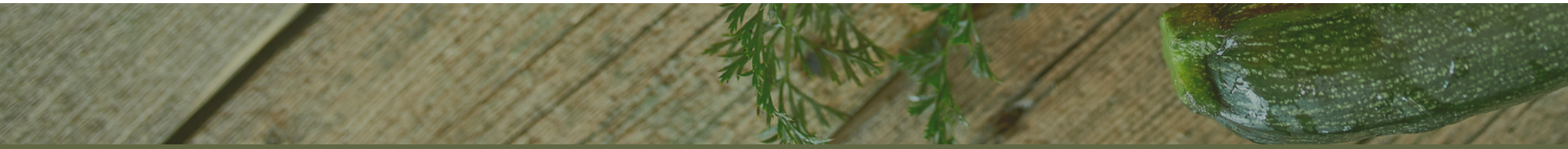


CHI-SQUARE TEST

- Chi-square is a statistical test that determines if there is a significant difference between the expected and observed frequencies in a data set
- It is commonly used in hypothesis testing to evaluate whether a sample of data comes from a population with a specific distribution
- The test measures the degree of discrepancy between the observed and expected data, and produces a p-value that indicates the level of statistical significance

	Results			
Results	Fail	Pass	Pass w/ Conditions	All
Risk				
Risk 1 (High)	17.65	47.06	16.20	80.92
Risk 2 (Medium)	3.65	10.98	3.40	18.02
Risk 3 (Low)	0.27	0.66	0.14	1.06
All	21.56	58.70	19.74	100.00

	Chi-square test	results
0	Pearson Chi-square (4.0) =	117.2474
1	p-value =	0.0000
2	Cramer's V =	0.0201



Click here for interactive map

LIMITATIONS OF DATASET

- No explanations of values on the API website
- Size hindered the ability to place all restaurants on map

SOURCES

- CITY OF CHICAGO. (2023). FOOD INSPECTIONS [DATA SET]. DATA.CITYOFCHICAGO.ORG. HTTPS://DATA.CITYOFCHICAGO.ORG/HEALTH-HUMAN-SERVICES/FOOD-INSPECTIONS/4IJN-S7E5

- CITY OF CHICAGO. (2023). UNDERSTAND HEALTH CODE REQUIREMENTS FOR FOOD ESTABLISHMENTS. WWW.CHICAGO.GOV. HTTPS://WWW.CHICAGO.GOV/CITY/EN/DEPTS/CDPH/PROVDRS/HEALTHY_RESTAURANTS/SVCS/UNDERSTAND_HEALTHCODEREQUIREMENTSFORFOODESTABLISHMENTS.HTML


QUESTIONS?