

# USA Restaurants

Akash Gangadharan, Sandhya Iyer, Himani Borana

## Abstract:

This data visualization analysis explores geographic distributions, densities, attributes, and interconnectivity across a dataset of over 60,000 restaurants spanning the United States. Interactive geospatial maps, charts, statistical graphics, and network diagrams characterize state- and city-level cuisine preferences, pricing variances, rating volatility, and review volumes.

The investigation spans diverse states, examining how the geographic distribution of restaurants correlates with the prevalence of specific categories, potentially revealing regional culinary inclinations. Additionally, it zooms into states with the highest restaurant density, unraveling nuances within cities that exhibit remarkable culinary diversity, upscale dining options, and reflections of significant economic or demographic influences. Through comprehensive data analysis and visualization, this study aims to decipher the underlying dynamics shaping the restaurant industry's geographic distribution, offering a comprehensive portrayal of the intricate relationship between dining preferences, economic factors, and demographic influences across states and cities.

## **Introduction:**

The distribution of restaurants across different states forms the bedrock of regional culinary landscapes, reflecting diverse cultural influences and culinary preferences. Understanding how this distribution correlates with specific restaurant categories unveils intriguing insights into the dining preferences of various regions. Certain states may exhibit distinctive concentrations of particular eatery types, signaling prevalent culinary inclinations or cultural proclivities unique to those areas.

Additionally, it is pertinent to note that this research initially commenced with a different dataset. However, upon a deeper evaluation and considering feedback from our initial proposal review, we recognized the limitations of the initial dataset in terms of depth and relevance. Consequently, we pivoted our focus to the more comprehensive and pertinent USA restaurant data, which offered a richer dataset for our analysis objectives. This shift has significantly enhanced the scope and quality of our research findings.

Within states boasting high restaurant density, an exploration into specific cities unveils nuances in culinary diversity, prevalence of high-end dining, and potential indicators of significant economic or demographic influences. Identifying these cities sheds light on the dynamic interplay between economic prosperity, demographic diversity, and the evolution of dining preferences within urban centers.

This study employs a robust dataset encompassing restaurant locations, categories, pricing, and other attributes to analyze and discern patterns in the distribution of restaurants across states and within cities. By scrutinizing these patterns, this research aims to offer a comprehensive understanding of how regional preferences, economic factors, and demographic influences converge to shape the culinary landscapes of various states and cities across the dataset.

## **Objectives:**

- How do the geographic distributions of restaurants across different states correlate with the prevalence of specific restaurant categories, and are

certain states characterized by a higher concentration of particular types of eateries?

- Among states exhibiting the highest density of restaurants, which cities within these states showcase greater culinary diversity, a prevalence of more expensive dining options, and potentially reflect significant economic or demographic influences?
- How Do Regional Dining Preferences Influence the Apparent National Trends in Popular Restaurant Categories?

## Motivation:

This analysis seeks to uncover regional dining preferences by examining the prevalence of specific restaurant categories across different states. It aims to discern patterns in dining choices across geographic regions, emphasizing the varied culinary offerings available in different areas. By exploring these preferences, the goal is to offer insights into how dining landscapes evolve based on geographic locations, potentially aiding businesses in tailoring their offerings to meet local demands.

This exploration not only strives to contribute to the understanding of regional dining patterns and economic influences but also aims to provide practical guidance for businesses operating within the restaurant industry. By leveraging data-driven insights, this research seeks to facilitate informed decision-making and strategy formulation, ultimately enhancing the alignment between restaurant offerings and regional preferences, thereby contributing to a more comprehensive comprehension of the diverse dynamics within the restaurant industry.

## Data:

The dataset we have used for this analysis from Kaggle comprises a 'restaurants.csv' file containing over 63,000 entries and 11 columns. Each entry within this dataset includes specific attributes providing comprehensive insights into various aspects of restaurants.

Key attributes encompass the 'id' serving as a unique identifier for each restaurant, 'position' indicating the restaurant's position in search results, 'name' specifying the restaurant's name, and 'score' representing the restaurant's numerical rating. Additionally, the dataset encompasses 'ratings count' denoting the number of ratings received by each restaurant, 'category' delineating the type of cuisine or restaurant category, and 'price\_range' segmenting restaurants based on their price levels categorized from '\$' for inexpensive to '\$\$\$\$\$' for very expensive. Furthermore, the dataset includes the 'full\_address' detailing the complete address of each restaurant, 'zip\_code' signifying the postal code of the restaurant's location, and geographical coordinates, namely 'lat' (latitude) and 'long' (longitude).

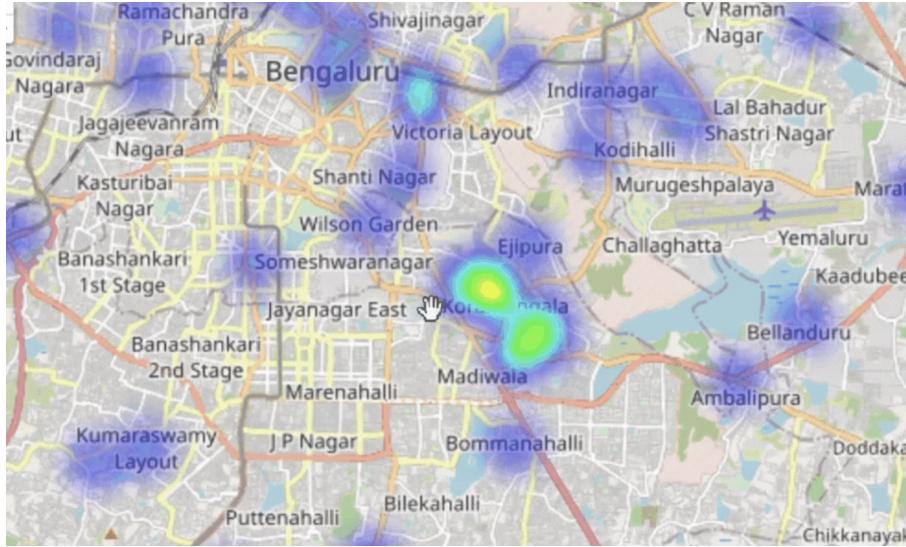
Column	Description
id	Restaurant id
position	Restaurant position in the search result
name	Restaurant name
score	Restaurant score (out of 5)
ratings	Ratings count
category	Restaurant category
price_range	Restaurant price range
full_address	Restaurant full address
zip_code	Zipcode of the count
long	Longitude
lat	Latitude

## Existing Work:

In the realm of restaurant research, a prevalent focus has historically been directed towards menu item analysis to uncover prevalent cuisines and popular choices among customers. Techniques such as word cloud visualizations have been frequently employed to extract commonly occurring terms from menus. These analyses provide valuable insights into evolving culinary preferences, highlighting trends and recurring themes in dining preferences among consumers.

When it comes to visualizing restaurant data, the predominant emphasis has been on specific urban areas or singular aspects, such as detailed examination of customer reviews. While some studies have delved into metrics within distinct urban neighborhoods, others have undertaken broad comparisons of restaurant categories and pricing structures. However, within this landscape, there exists a significant gap in understanding the hierarchical relationship between geographic factors and various restaurant attributes. This gap encompasses an exploration of how dining preferences and trends vary when scaling from localized neighborhoods to broader regional or national levels.

Moreover, within the domain of restaurant research, heatmaps have emerged as a prominent analytical tool for geographical analysis. In a recent project that I found online, heatmaps were employed to visualize geographical distributions of restaurants, showcasing the concentration and density of dining establishments across different regions without delving into city-level analyses. These heatmaps provided a comprehensive overview, offering insights into the broad spatial patterns of restaurant distributions, allowing stakeholders to grasp the overall geographic landscape of dining establishments across various states or regions. However, it's crucial to note that while these heatmaps provide a macro-level understanding of restaurant distributions, they might lack the granularity required for detailed city-level analyses or exploring localized variations within urban centers. Thus, while informative in presenting an overarching view of geographic trends, further analyses at more granular levels could offer deeper insights into localized dining preferences and variations within specific cities or neighborhoods.



**Fig: Geographical Heatmap on Bangalore found in one of the projects**

The absence of research investigating the hierarchical impact of geographic factors on restaurant attributes hampers a comprehensive understanding of the nuanced interplay between geographical scales and dining trends. Bridging this gap could offer profound insights into how dining preferences evolve across different geographic levels, shedding light on the influence of local, regional, and national dynamics on restaurant choices, pricing, and culinary trends. Such exploration could prove instrumental in informing urban planning, business strategies for restaurants, and understanding the diverse cultural influences shaping dining preferences at varying geographic scales.

## Contribution:

This project provides comparative visualization spanning the continental nation down to street-level detail. Interactive maps plot metrics across states, enable drilling into urban centers revealing intra-city variance, and support extraction of neighborhood cluster patterns. The multi-scale geographic analysis connects high-level cuisine biases with highly localized density and diversity.

In contrast to the existing menu-centric analysis, our research adopts a more holistic approach, centering on an extensive evaluation of restaurants across the United States. This includes:

**Nationwide to Neighborhood Analysis:** We provide an interactive mapping experience that spans from a continental perspective down to street-level detail. This enables a unique exploration of restaurant metrics across states, delving into urban centers to reveal intra-city variances and uncover neighborhood-specific dining patterns.

**Holistic Restaurant Landscape Evaluation:** Moving beyond menu-centric analysis, our approach offers an extensive evaluation of the restaurant industry, encompassing a wide array of factors. This includes a thorough investigation of restaurant scores, category prevalence, and price range distributions, providing a detailed picture of the industry from various angles.

**In-Depth State and City Analysis:** We conduct a detailed analysis of Texas, identified through our research as the state with the densest concentration of restaurants. This is complemented by a deeper exploration of its major cities, with a particular focus on Houston, to provide context-specific insights.

**Comparative Regional Analysis:** By contrasting the overarching trends observed nationwide with those specific to Houston, our study highlights the diverse regional variances in dining preferences and practices, offering a nuanced understanding of how local markets can differ significantly from national trends.

**Microscopic Study of Houston's Dining Scene:** We delve into the streets of Houston to identify clusters of dining establishments and analyze the city's most dominant restaurant categories, offering insights into the micro-dynamics of its local culinary scene.

**Exploring Regional Dining Dynamics:** Our research addresses the often-overlooked discrepancies between national and city-specific restaurant trends. By doing so, we provide a clearer understanding of how regional preferences and economic factors shape the dining landscape, both locally and nationally.

# Data & Methods:

## Core Ideas:

The core idea of this research revolves around a comprehensive geographical analysis of restaurant data across the United States, with a focus on understanding regional dining trends and preferences. The study aims to bridge the gap between high-level national data and localized information, providing insights at various geographic scales – from states to individual streets. Key aspects include:

**Geographic Distribution Analysis:** Mapping restaurants to reveal nationwide patterns and local concentrations.

**Category and Price Range Evaluation:** Analyzing the prevalence of restaurant categories and price range distributions.

**Score Analysis:** Assessing restaurant scores to understand quality perceptions across different locations.

## Sketches and Prototypes:

### National Restaurant Distribution Map:

**Prototype:** An interactive map of the U.S. displaying restaurant locations.

**Design Details:** Utilizes color-coding to represent different restaurant categories, with zoom functionality to allow users to explore data at a state or city level.

### Category Distribution Bar Graphs:

**Prototype:** Bar graphs showing the number of restaurants in each category across different states and cities.

**Design Details:** Different colors represent various categories, with sorting options to view data in descending order of prevalence.

### Price Range Analysis:

**Prototype:** Grouped bar charts illustrating the distribution of price ranges within each restaurant category.

**Design Details:** Distinct color segments within each bar indicate the proportion of restaurants in different price ranges.

#### **Restaurant Score Distribution Plots:**

**Prototype:** Boxplots showing the distribution of scores across different categories and locations.

**Design Details:** Visual cues to indicate median scores and variability within each category or location.

#### **Houston Street-Level Analysis:**

**Prototype:** A detailed map of Houston highlighting streets with high concentrations of restaurants.

**Design Details:** Heatmap overlay or marker density to indicate areas with the most dining options.

### **Explanation of Visualization Design:**

**Interactivity in Maps:** Interactive elements in the maps, such as zooming and clickable markers, allow users to explore data at different levels, making the visualization more engaging and informative.

**Color Coding:** Using different colors for various categories or price ranges provides a quick and intuitive way to interpret data. It also enhances the visual appeal of the charts.

**Data Aggregation:** Aggregating data at various levels (national, state, city, street) helps in revealing patterns that are not apparent at a single scale. It provides a multi-dimensional view of the data.

**Use of Box Plots:** These plots are chosen for score distribution as they provide a clear view of the range, median, and outliers in the data, which are crucial for understanding restaurant quality perceptions.

### **Data Preprocessing and Cleaning:**

The initial phase of data preprocessing involved essential steps to refine the dataset for comprehensive analysis. Column renaming was executed to enhance

clarity and align column names like 'Ing' to 'long' with specific analytical requirements, ensuring improved readability and relevance. Addressing data quality, null and missing values were meticulously handled and removed from the dataset, resulting in a more refined dataset comprising approximately 30,000 entries. Moreover, to augment geographical insights and enable a more detailed state-level view, a strategic approach was adopted. Utilizing the 'uszipcodes' package, the zip codes from the 'zip\_code' column were meticulously linked to their corresponding states and cities, thereby enhancing the dataset with precise state-level and city-level geographical data. These detailed data preprocessing measures were undertaken to refine the dataset, ensuring its readiness for further analysis. Specifically, this enhancement was pivotal in enabling a more comprehensive exploration of state-level patterns and insights within the restaurant dataset, empowering a deeper understanding of geographical trends and regional variations within the restaurant landscape.

After completing the zip code to state mapping, we arrived at the final refined dataframe containing all the requisite attributes for analysis. Subsequently, a comprehensive geographical analysis was conducted on this dataset. This analysis delved into exploring the spatial distribution, geographic trends, and regional patterns inherent within the dataset. By leveraging the geographic attributes such as latitude, longitude, and mapped states, this geographical analysis aimed to unveil insights into the distribution of restaurants across different geographical regions, allowing for a deeper understanding of geographic variations and their impact on restaurant attributes and trends.

## Data & Methods: Visualization Methods Selection

### Potential Visualization Methods:

In selecting the appropriate visualization methods for this study, various options were considered, each with its strengths and weaknesses. The key methods evaluated include:

#### **Interactive Maps:**

**Pros:** Provides essential geographical context for analyzing restaurant distributions across various scales, from specific regions to broader state-level overviews.

**Cons:** High data volume leads to occlusion issues, causing slower loading times and potential hindrance in visual clarity due to excessive data points.

### **Bar Graphs and Histograms:**

**Pros:** Effective for showing the restaurant distributions and comparisons across categories, simple and easily interpretable.

**Cons:** Limited in showing complex relationships

### **Boxplots Plots:**

**Pros:** Excellent for depicting score distributions, highlighting medians, ranges, and outliers.

### **Heatmaps:**

**Pros:** Useful for showing density and concentration of data points on the maps and is visually striking.

**Cons:** works well in this data but maybe less effective for sparse datasets.

### **Scatter Plots:**

**Pros:** Good for showing relationships between two variables (e.g., score vs. price range).

**Cons:** Can be less effective if data points are densely packed; may require additional context for interpretation.

Based on the study's objectives, the following visualization methods were selected:

**Interactive Maps:** Chosen as the primary tool for geographic analysis due to their ability to provide a macroscopic view of the data while also allowing for detailed, localized examination. Despite potential performance issues with large datasets, their intuitive nature and relevance to the study's goals outweighed the cons.

**Bar Graphs:** Selected for analyzing category prevalence and price range distribution. Their simplicity makes them suitable for quickly conveying key information about the distribution of restaurant categories and pricing.

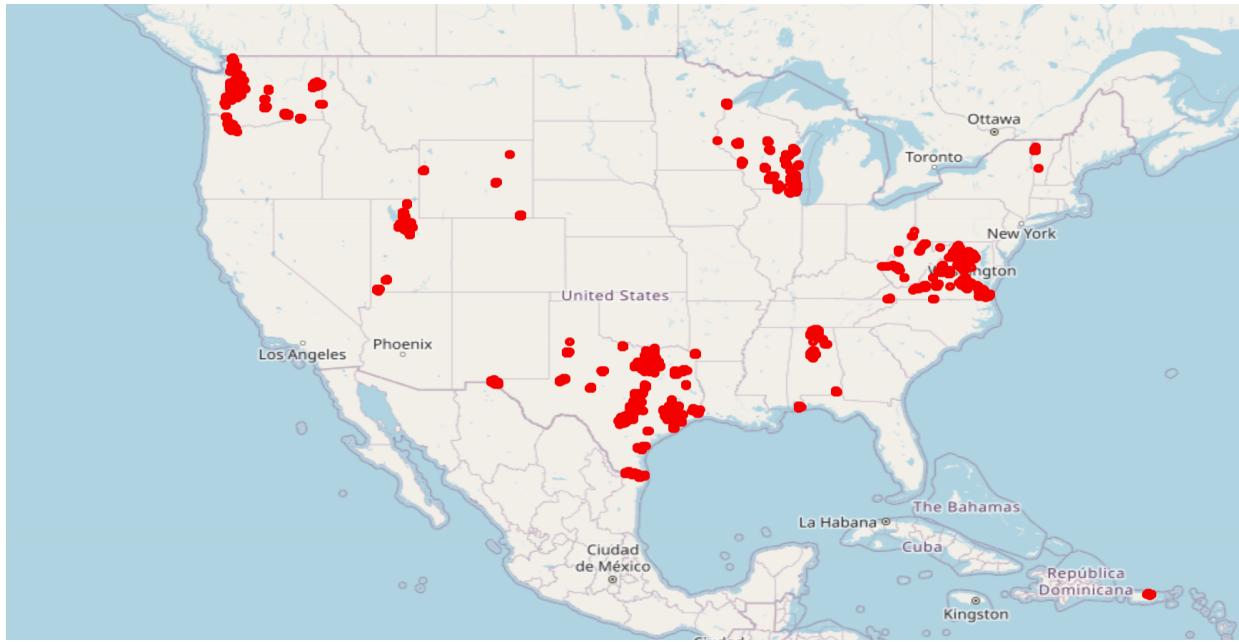
**Boxplots Plots:** Utilized for analyzing restaurant scores to capture the distribution and variance within each category or location. While potentially challenging for a general audience, they provide depth and detailed insights for more analytical users.

**Heatmaps:** Employed for high-density areas (like specific cities) to visualize the concentration of restaurants. This method effectively illustrates clusters and hotspots, although care was taken to ensure readability in densely populated regions.

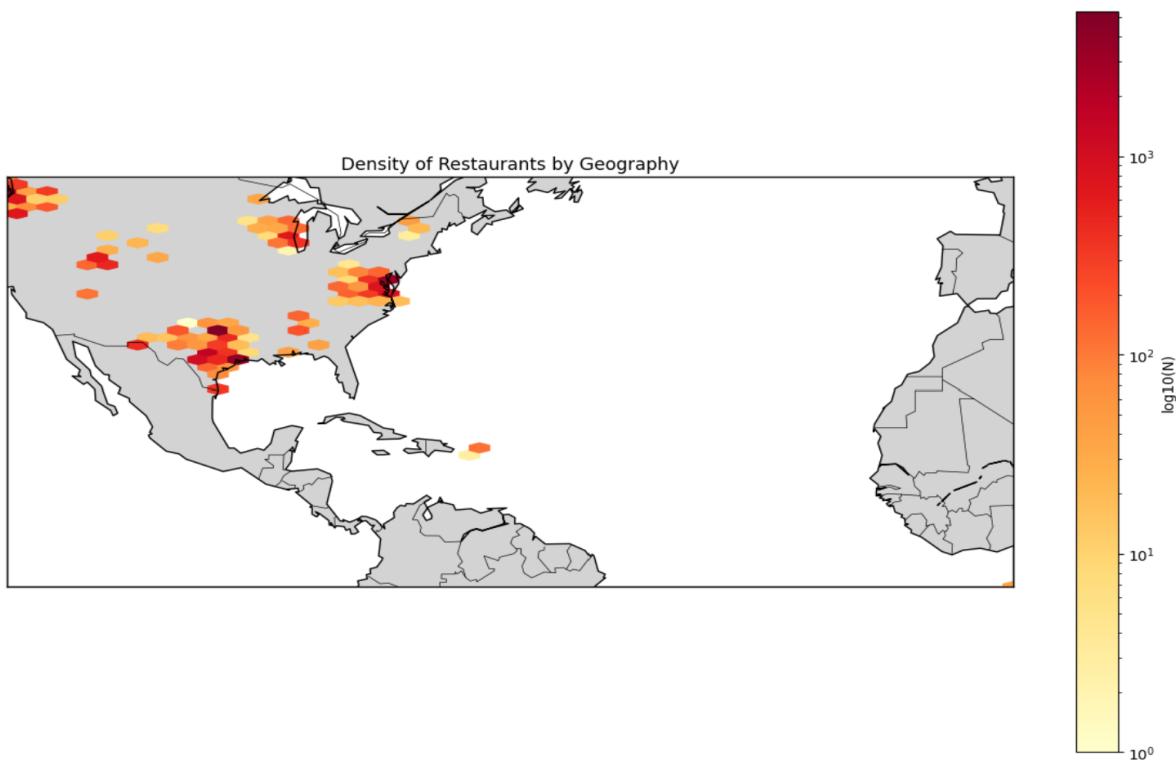
## Results:

### Geographical Analysis:

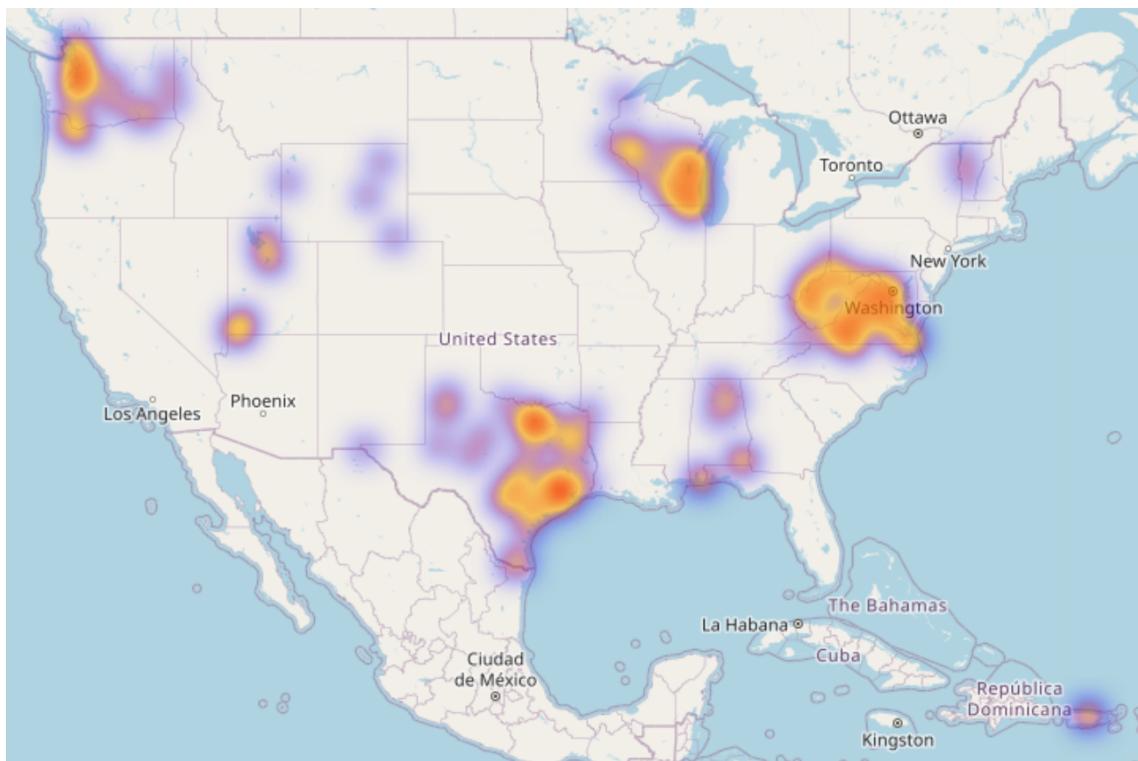
The visualization illustrates the geographic spread of restaurants across diverse US states, highlighting notable concentrations of points, particularly around Texas, Washington and Milwaukee.



To enhance interpretability beyond what was offered by the standard heatmap, we integrated a hexbin heatmap into our analysis. This approach distinctly highlights areas of high restaurant density on a logarithmic scale, providing a clearer and more precise visualization of concentration hotspots.



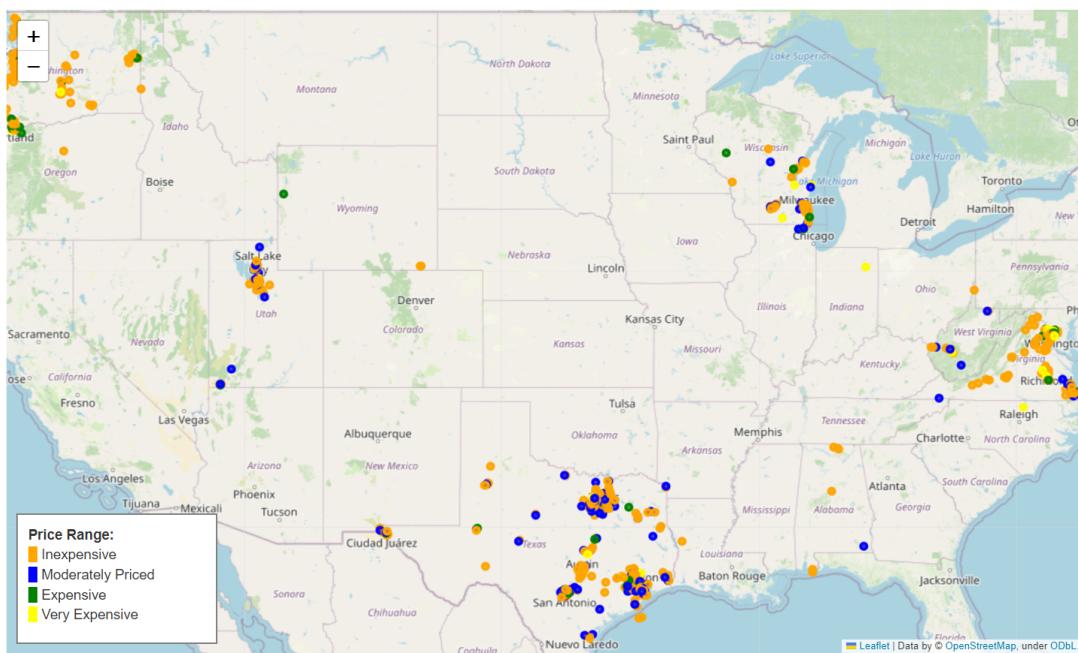
To gain a more detailed understanding of this distribution and address the potential occlusion issue arising from the sheer volume of data points, a geographical heat map was generated. This analytical method offers a clearer representation of the density and clustering patterns of restaurants across different geographic regions. By utilizing a geographical heat map, the visualization aims to provide a visual gradient that reveals the varying degrees of density or concentration of restaurants within specific states, thereby enhancing the comprehension of the spatial distribution trends inherent in the dataset. The heat map is shown below.



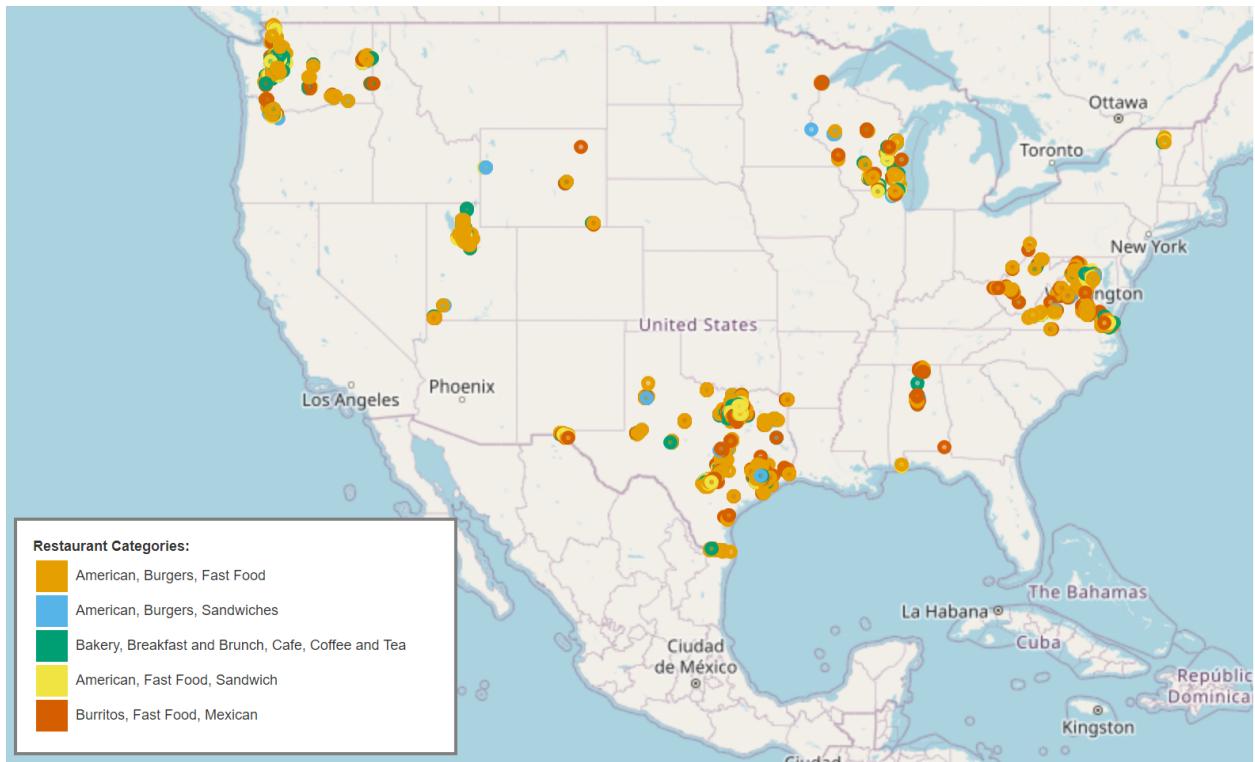
To analyze the distribution of price ranges across the United States, we utilized geospatial maps as a visual tool for comprehending the geographical spread of different price categories within the restaurant dataset. By visualizing this information on a map, we aimed to gain insights into the geographic patterns of restaurant pricing, facilitating a better understanding of how different price categories are distributed and clustered across the country.

We can clearly see that the majority of the restaurants fall under the category of inexpensive and moderately priced" - This suggests that within the total set of restaurants being analyzed, most have been labeled or categorized as either "inexpensive" or "moderately priced" in terms of their price range. There are few "very expensive" or "expensive" restaurants around Texas, Milwaukee and Virginia.

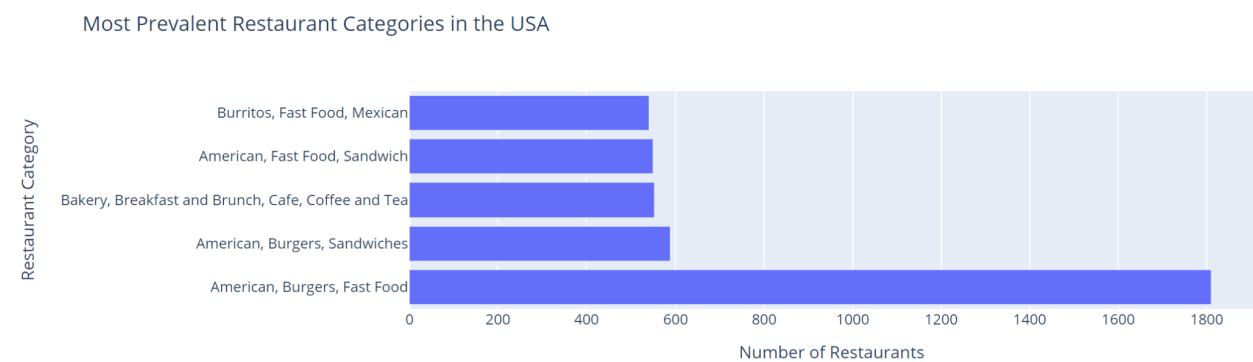
This is useful analysis as it provides insight into the predominant price points and potential accessibility/affordability of restaurants within this particular geography.



We have then analyzed the top restaurant menu categories available using the geospatial maps. Using this we see that the restaurant category "American, Burgers, Fast Food" is the most popular one among all the states in the data.



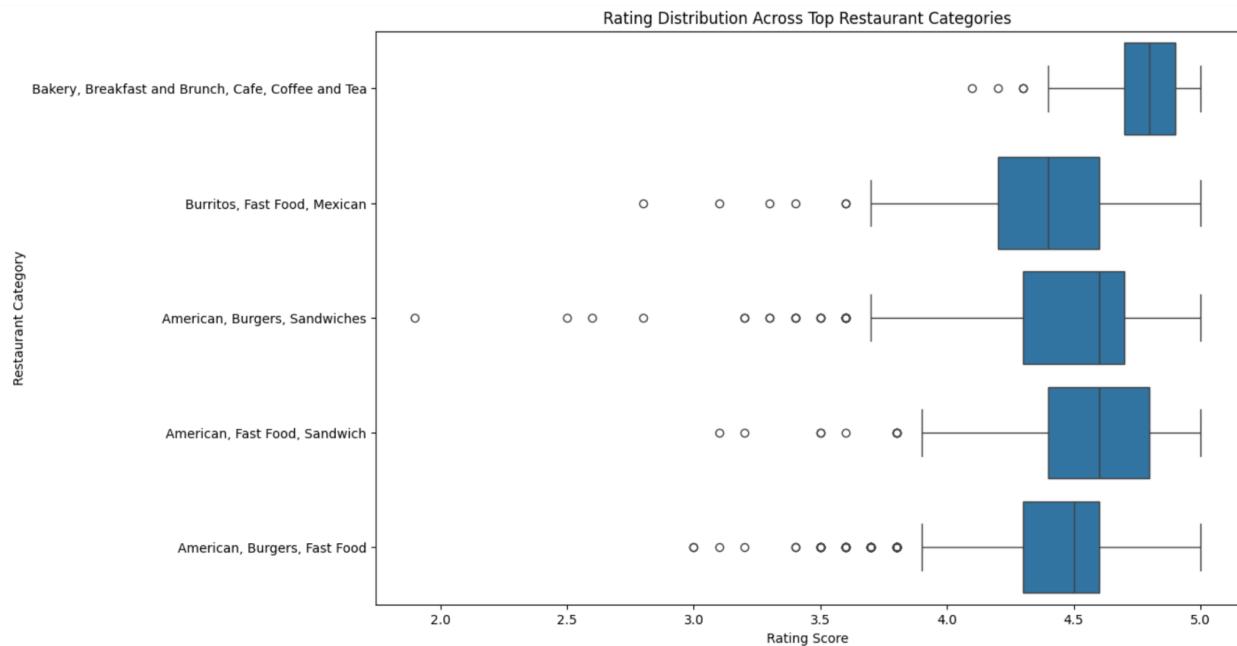
The bar chart below also tells us that American, Burgers, Fast Food has around 1800 restaurants in the US giving us a statistical analysis of the geographical data seen above. All the other categories seem to have restaurants around an average of 400-600.



In the below boxplots, we are comparing the different categories to the rating score out of 5.0. We can say that:

1. The median ratings are quite high (over 4) for most categories, indicating generally good ratings. However, there is also significant variance.

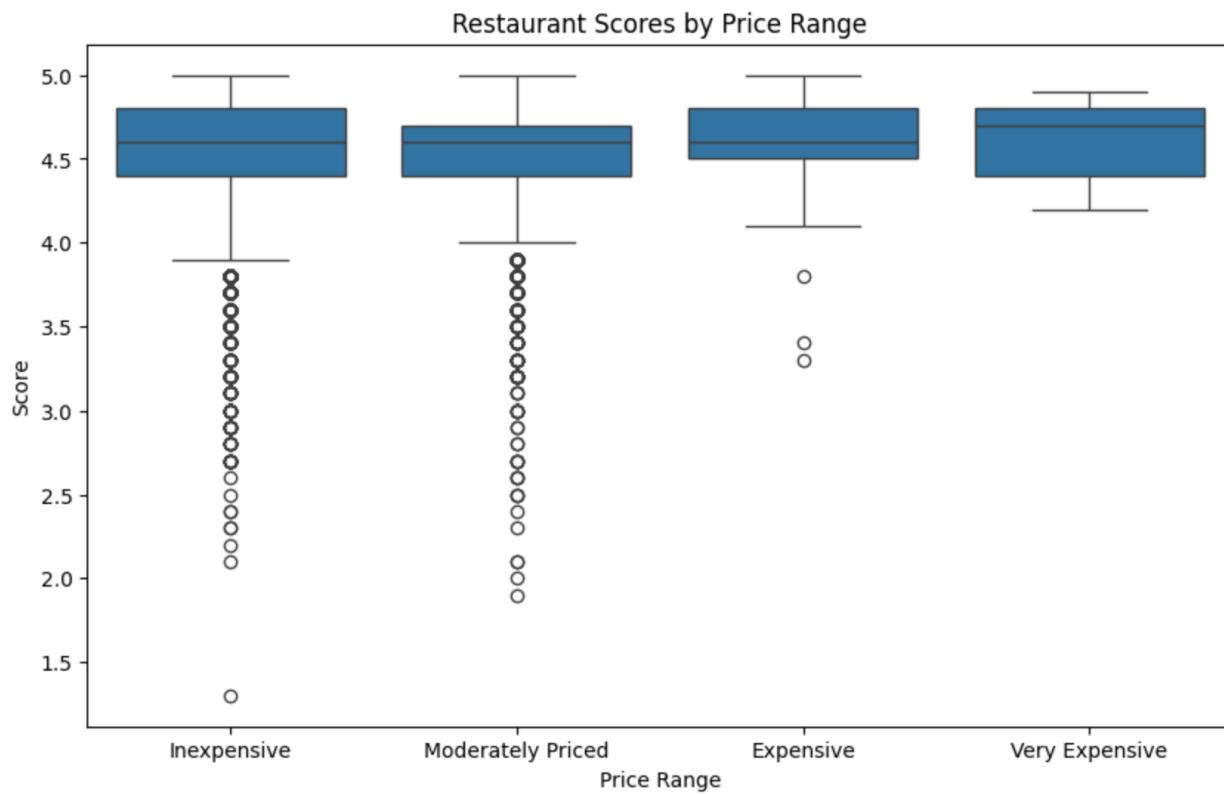
2. Bakeries have the highest average rating (4.77) as well as the smallest standard deviation (0.12). This indicates bakeries tend to reliably satisfy customers, with less polarizing experiences.
3. Mexican restaurants have a high standard deviation (0.25) in their ratings, despite a decent average rating (4.54). This suggests experiences can greatly vary across Mexican restaurants, leading to more polarized opinions.
4. American cuisines like burgers and fast food have moderately high averages (4.46-4.59), but also reasonably high standard deviations (~0.29).



Then we have compared the score and price range of the restaurants to understand how the price range affects the score given by a customer. We found that the:

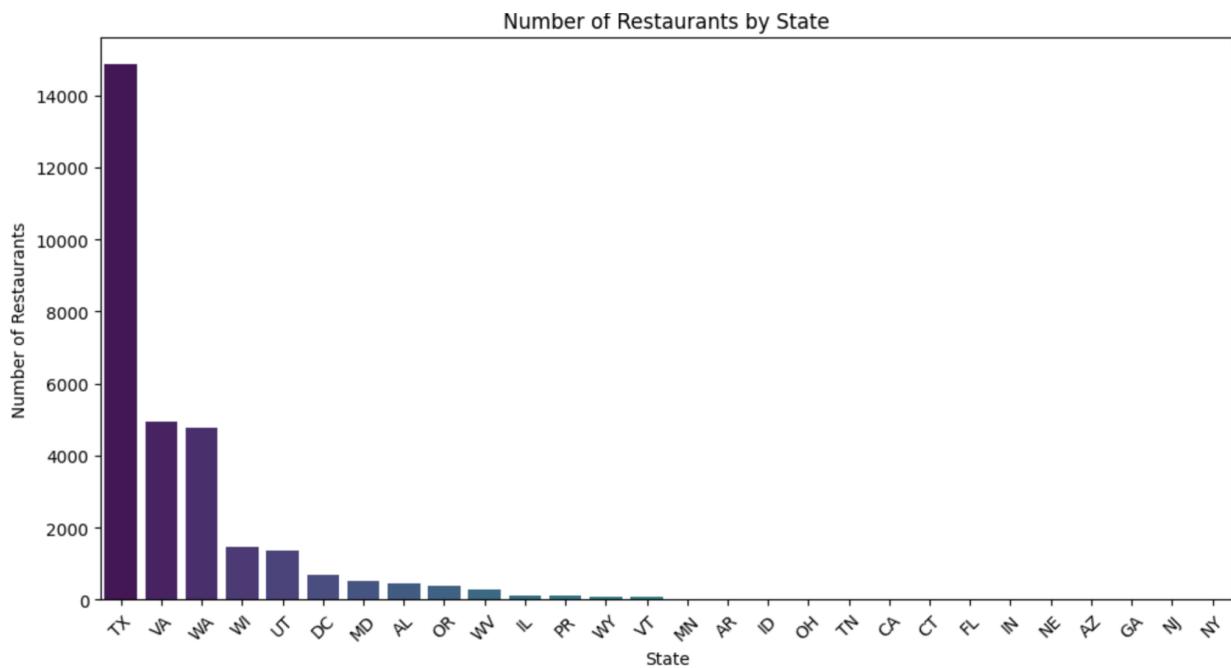
1. Restaurants categorized as 'Expensive' and 'Very Expensive' showcase higher mean scores with lower variability (smaller standard deviations ~0.25). This indicates that higher-priced restaurants tend to maintain more consistent and elevated ratings, reflecting a trend of higher customer satisfaction across this price range.

2.'Inexpensive' and 'Moderately Priced' restaurants exhibit greater variability in scores, with higher standard deviations. Ratings span from 1.3 to 5.0, portraying diverse customer perceptions. This suggests a wider range of customer experiences within these categories. While some lower-priced restaurants may receive high ratings, others might have comparatively lower scores, indicating more diverse customer perceptions within these price brackets.



To understand this better, we have analyzed this on a state-level, we have plotted a bar graph to understand the number of restaurants in each state in this dataset. We find that:

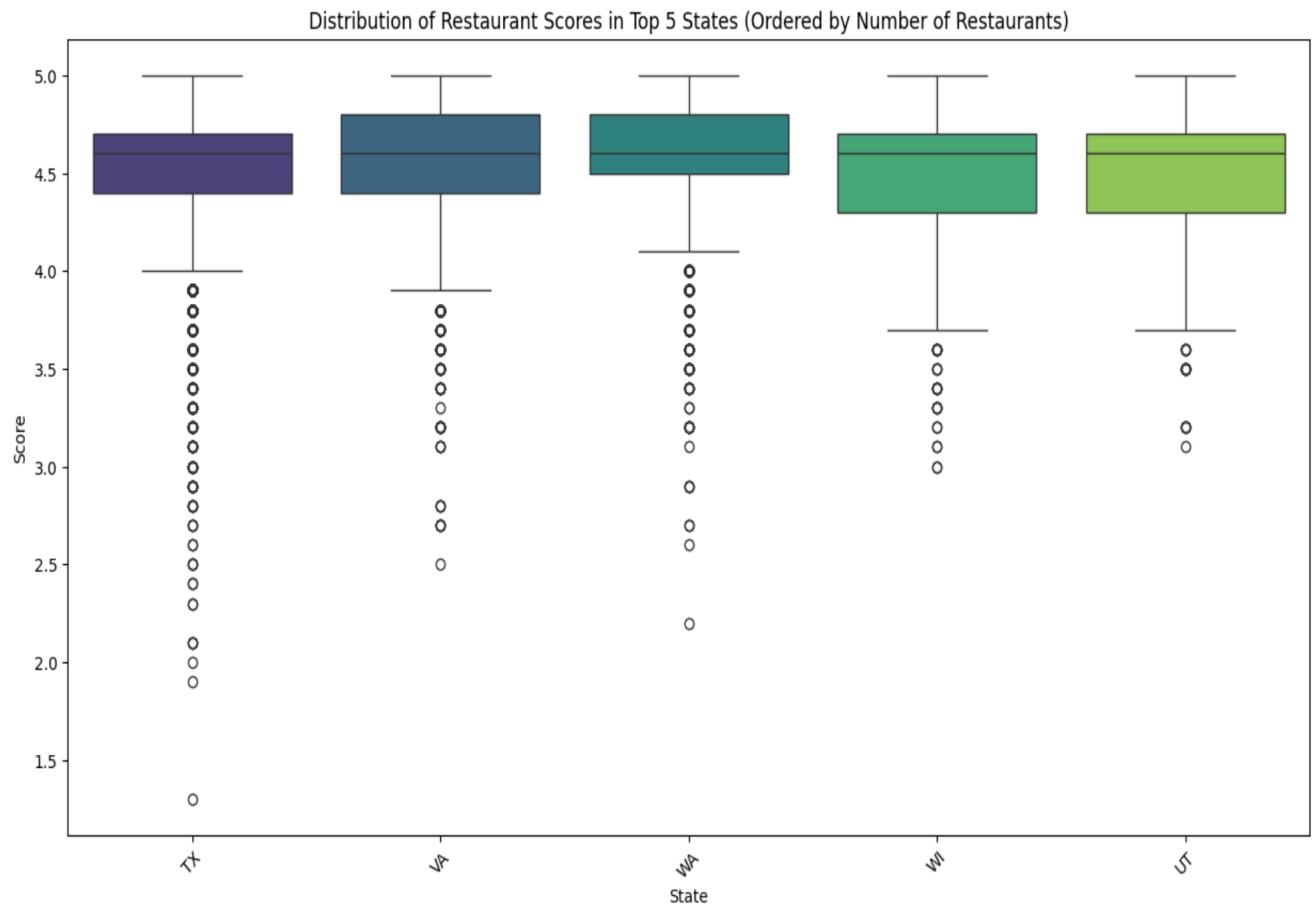
Texas (TX) stands out significantly with the highest number of restaurants (14,859) among all states in the dataset, reflecting a robust and diverse culinary landscape within the state. We next find Virginia with around 5000 restaurants and Washington with 4500 restaurants followed by Wisconsin and Utah,



To understand how the scores are distributed among the top 5 states found in the bar chart above, we have created bar charts to compare them. We see that Texas has the most amount of variation. The Lone Star state features a respectable average rating of 4.54 but that includes a wide variance from 1.3 to 5 stars.

Washington, WA demonstrates notably consistent high scores with a mean of approximately 4.67 and a relatively small standard deviation of around 0.28. This suggests a relatively consistent and high level of customer satisfaction across various dining establishments.

The ratings distributions generally show wide spreads for all states (2.5 to 3 points from min to max). No state guarantees universally good or bad dining experiences. Standard deviations measuring volatility span 0.25-0.36 for most states. Only minor differences in polarization appear state-by-state. Restaurant execution likely drives variation more than location.



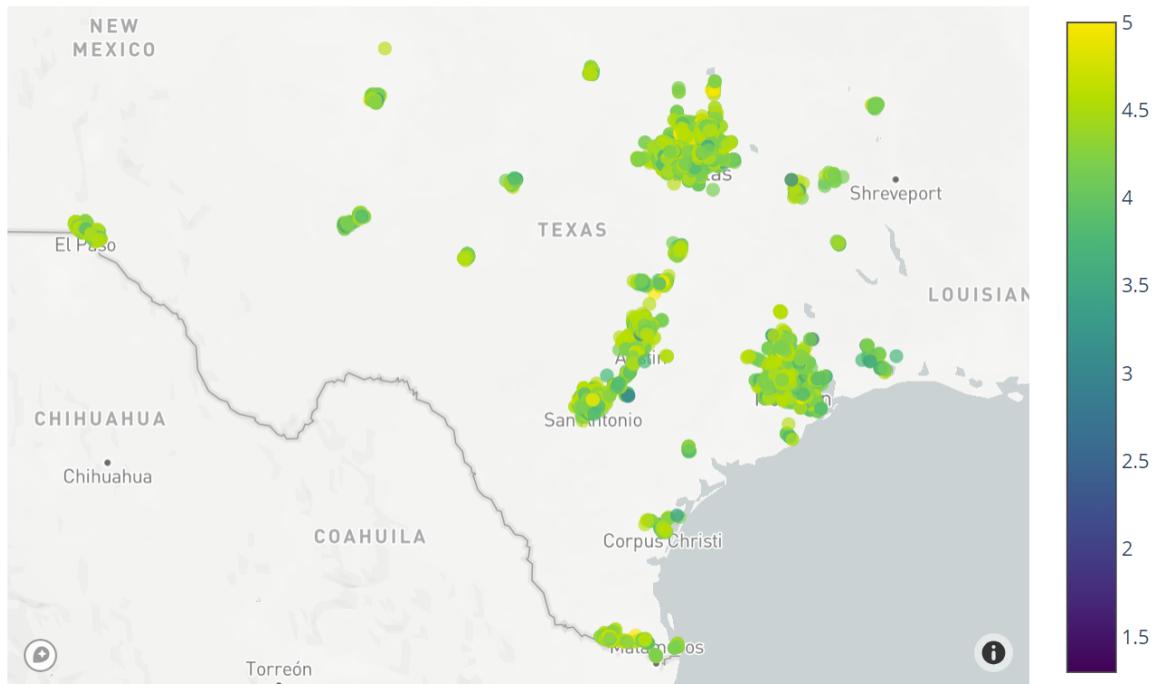
So, from the above two plots we see that Texas has around 50% of data. So, to understand which city shows the most culinary diversity we will dive deeper into the Texas restaurants.

## Texas:

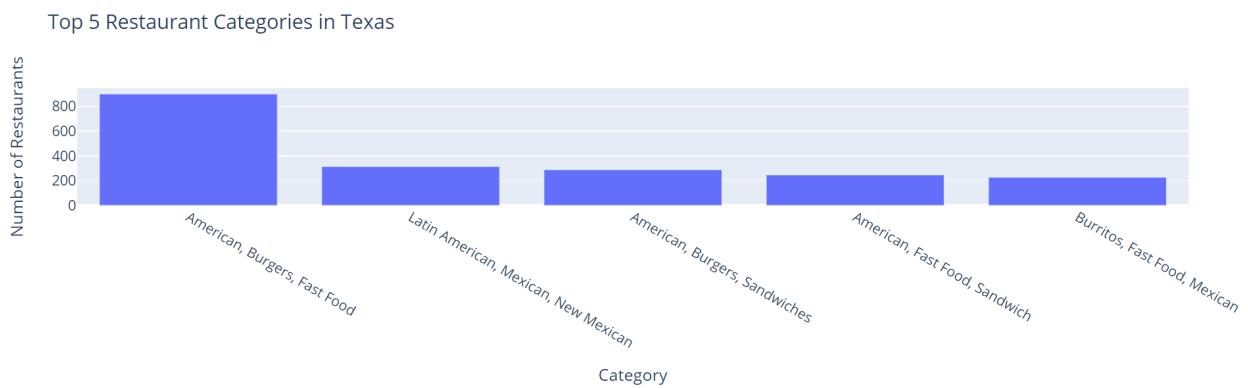
The below map is the distribution of Texas restaurants to the scores given to them by users on 5.0.

Here we see that there are a lot of restaurants along the 4-5 range and a lot of restaurants are seen to be situated in a few cities in Texas. One of them being Houston and Dallas, when seen from the map.

## Geographical Distribution and Diversity of Restaurants in Texas

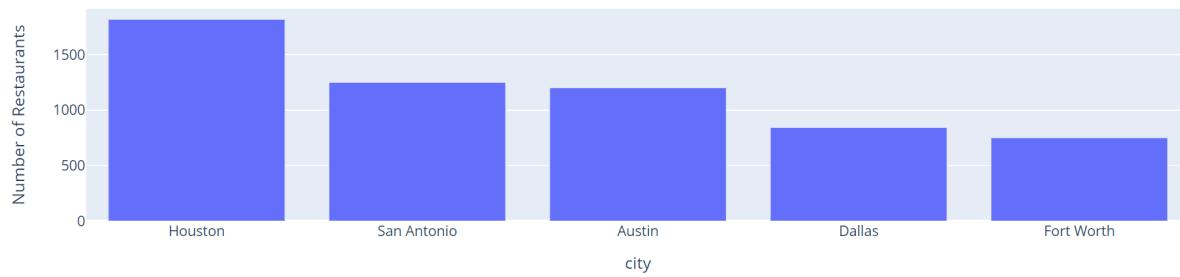


We plot the top 5 categories in Texas and find it to be American, Burgers, Fast Food to be around 800 which is similar to the trend of US as well.



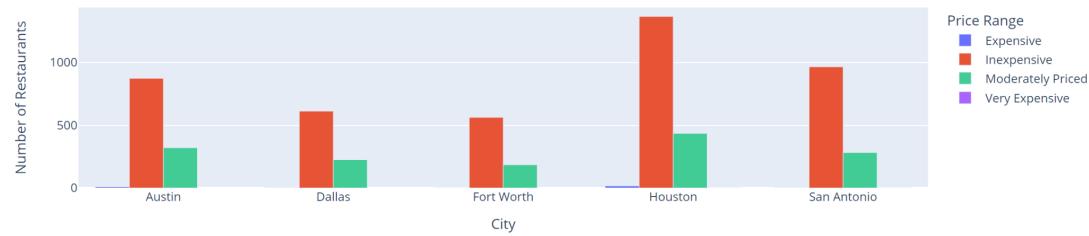
On plotting the restaurants in Texas to the respective cities present in the data. We find the top city being Houston around 1600, next we have San Antonio and Austin having around 1100-1200 restaurants followed by Dallas and Fort Worth.

Top 5 Cities in Texas by Number of Restaurants



For the same 5 cities in Texas, we create bar charts to represent the price range and number of restaurants. We find Houston to have the most varied price ranged restaurants, the highest inexpensive restaurants are found there with some moderately priced and few expensive restaurants.

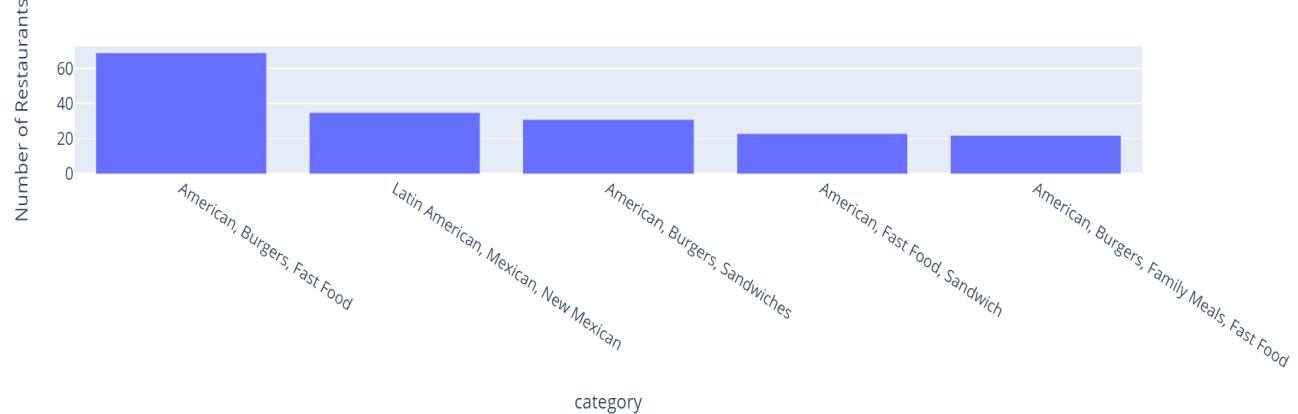
Price Range Distribution in Top 5 Cities in Texas



Hence, to get a better city level understanding of restaurants we will dive in deep into the price and restaurant category trends of Houston.

## Houston:

Top 5 Restaurant Categories in Houston, Texas



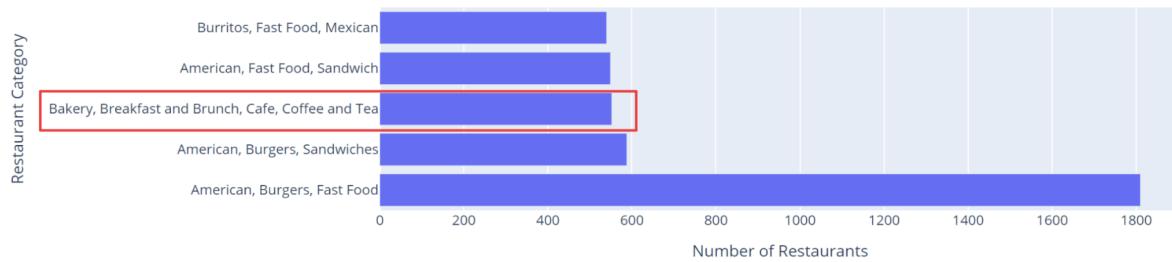
The above bar chart represents the visual overview of the restaurant landscape in Houston. The horizontal bars in the chart represent different categories of restaurants, providing a clear indication of their prevalence in the city. With more than 60 eateries, the “American, Burgers, Fast Food” category is the most common within the sample. Following closely is the “Latin American, Mexican, New Mexican” category, highlighting a significant presence of Houston’s dining scene. Notably, there are three categories within American cuisine in the top 5, showcasing a diversity that includes fast food, burgers, sandwiches, and family meals. Despite being the smallest in representation, the “American, Fast Food, Sandwich” category holds significance.

Correlation between Score and Price Range in Houston Restaurants



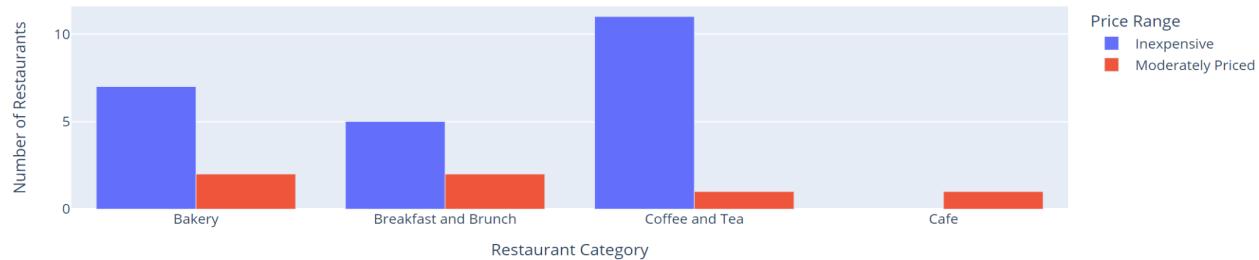
The scatter plot illustrates the correlation between Score and Price range among the Houston Restaurants, by analyzing the association between customer satisfaction scores and restaurant prices. Restaurants are categorized into four price ranges: Inexpensive, Moderately Priced, Expensive, and Very Expensive. Key observations include a noteworthy cluster of high ratings for budget eateries, centered around a 4, which indicates satisfactory consumer feedback. Similar to this, reasonably priced eateries show a trend of good ratings, which indicates that customers are happy. High-end eateries routinely receive scores between 3.5 and 5, indicating a relationship between higher costs and happier guests. Despite their rarity, extremely expensive restaurants generally garner scores surpassing 4, indicating a strong appreciation for premium dining experiences.

Most Prevalent Restaurant Categories in the USA



The graph highlights the popularity of the "Bakery, Breakfast and Brunch, Cafe and Tea" category, which is recognized as one of the top five food preferences in the United States and is considered reasonably priced, as seen in the below picture.

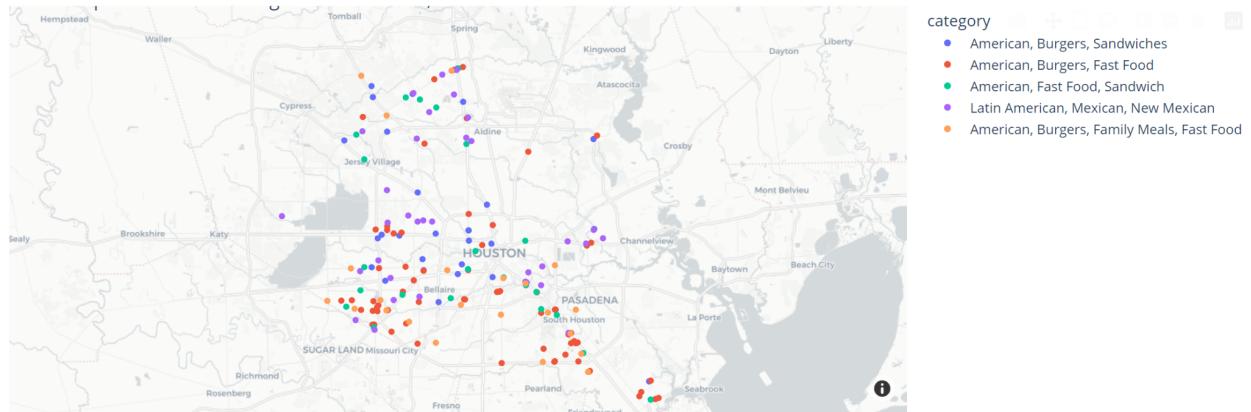
Price Range Distribution for Selected Categories Across the USA



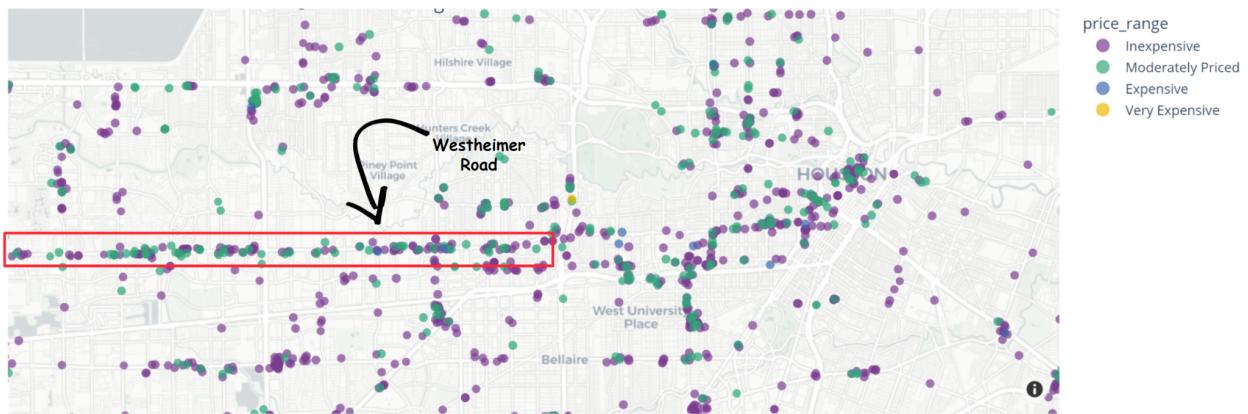
However, the observed correlation at the national level is reversed when looking at the data at a more localized level, illustrating Simpson's Paradox . Contrary to the national trend, in Houston, Breakfast and Brunch establishments are categorized under moderately priced menus, deviating from the broader pattern observed in the United States.

Price Range Distribution for Selected Categories in Houston, TX





Above, map represents the distribution of top 5 food categories in Houston,Texas.



The geographical distribution of restaurants in Houston provides insights into the city's dining landscapes. The high concentration of inexpensive restaurants, notably along the major roads like Westheimer, indicates widespread accessibility to affordable dining options, suggesting a robust market for budget friendly choices . The city's distribution of costly and modestly priced restaurants points to a stratified dining market, with a vivid dining environment that serves different economic groups. The limited availability of incredibly pricey restaurants suggests exclusivity and may be targeted at certain demographics in exclusive areas. A microcosm of Houston's diversity can be seen while examining Westheimer Road, since the street is home to a wide range of eateries representing different price points and ethnic cuisines. This concentration underscores the road's role as a vibrant culinary hub that unites several areas and highlights the diversity of the city's cuisine.

## **Discussion:**

This research embarked on a comprehensive journey through the vast landscape of the restaurant industry across the United States, employing a diverse array of data visualization techniques to unearth both macroscopic trends and microscopic details.

## **Key Findings:**

**Geographic Distribution:** Our maps revealed significant geographic variances in restaurant distribution, with certain states and cities, notably Texas and Houston, emerging as prominent hubs.

**Category and Price Range Dynamics:** The analysis highlighted distinct patterns in restaurant categories and price ranges, showing a diverse array of dining options that cater to various consumer preferences.

**Score Analysis:** The study provided insights into the perceived quality of restaurants across different regions and price brackets, challenging the conventional wisdom that higher prices always correlate with higher quality.

**Localized Trends vs. National Trends:** A fascinating aspect of our research was the observation of local trends, particularly in Houston, which sometimes diverged significantly from national patterns.

## **Limitations:**

The study relied on available data, which may have inherent biases or gaps.

# Conclusion:

In conclusion, the analysis explores the correlation between distribution in different states and specific categories. Some states show diverse culinary landscapes, with high restaurant density suggesting greater diversity and a prevalence of expensive dining options. This pattern reflects economic and demographic influences on the dynamic restaurant scene across different states. The journey through this dataset has been illuminating, providing a window into the diverse and dynamic world of the U.S. restaurant industry. Our findings underscore the importance of geographic context in understanding dining preferences and reveal the multifaceted nature of the restaurant industry, characterized by a rich tapestry of cuisines, prices, and qualities.

This research contributes to a more holistic understanding of the dining landscape, offering valuable insights for stakeholders ranging from restaurateurs and marketers to policymakers and urban planners. By marrying comprehensive data analysis with nuanced geographic exploration, this study paves the way for more informed strategies that align with both regional and national dining trends.

## Future Scope

1. Explore temporal trends and analyze customer reviews for deeper insights.
2. Leverage real-time data to keep-up with the evolving dining patterns.

## References

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- <https://www.tableau.com/resource/data-visualization>
- <https://www.analyticsvidhya.com/blog/2022/09/exploratory-data-analysis-of-zomato-bangalore-restaurants/>
- <https://github.com/NiveditaSureshK/Geospatial-Analysis>