Designing a Marketing Campaign for a Restaurant Chain Using Exploratory Data Analysis: A Zomato Case Study

Objective

The purpose of this case study is design a marketing campaign for a restaurant chain in India, using exploratory data analysis (EDA) to understand customer preferences, dining trends, and the competitive landscape in various regions. We will explore the key insights and analyses from a comprehensive dataset of Zomato restaurants in India.

Dataset Overview

The dataset contains detailed information about restaurants, including their name, establishment type, location, city, and cuisine, average cost for two, price range,

aggregate ratings, and more. With over 211,000 entries, it offers a rich source of data for in-depth analysis.

Data Cleaning and Preparation

To ensure data quality and consistency, the following steps were taken:

- **Handling Missing Values:** Columns with a large number of missing values, such as 'zip code', were removed, and other missing values were filled with appropriate placeholders.
- **Detecting Inconsistencies:** The data types were corrected, and mislabeled categories were identified and resolved.
- **Feature Engineering:** Additional information was extracted from existing data, where necessary.

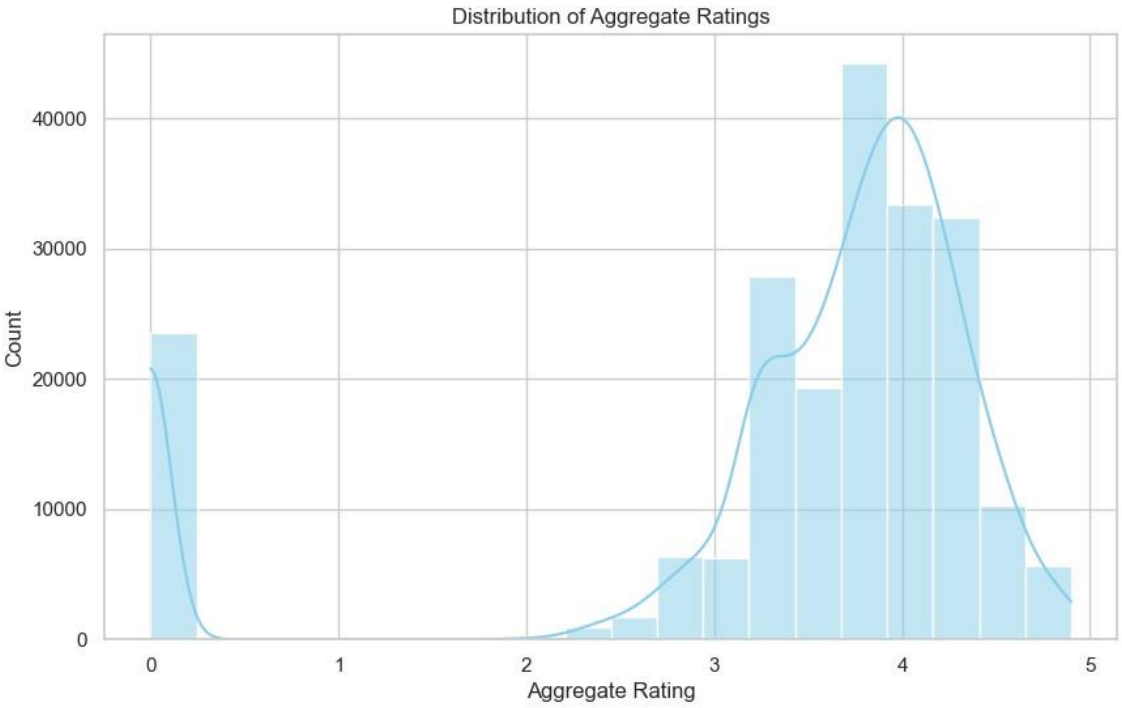
Exploratory Data Analysis

EDA is a crucial step in understanding the dataset and uncovering valuable insights. The following analyses were performed:

Descriptive Statistics

Descriptive statistics provide a summary of the dataset's central tendency, dispersion, and distribution shape. This includes:

- **Distribution of Aggregate Ratings:** A histogram revealed that the distribution of ratings is skewed, with most restaurants receiving ratings between 3 and 4.
- **Distribution of Price Ranges:** A bar plot showed that most restaurants fall within the first two price ranges, with fewer restaurants in the higher price ranges.
- **Top 10 Most Common Cuisines:** An analysis of the most common cuisines highlighted the dominance of North Indian and Chinese cuisines.


Distribution of Aggregate Ratings
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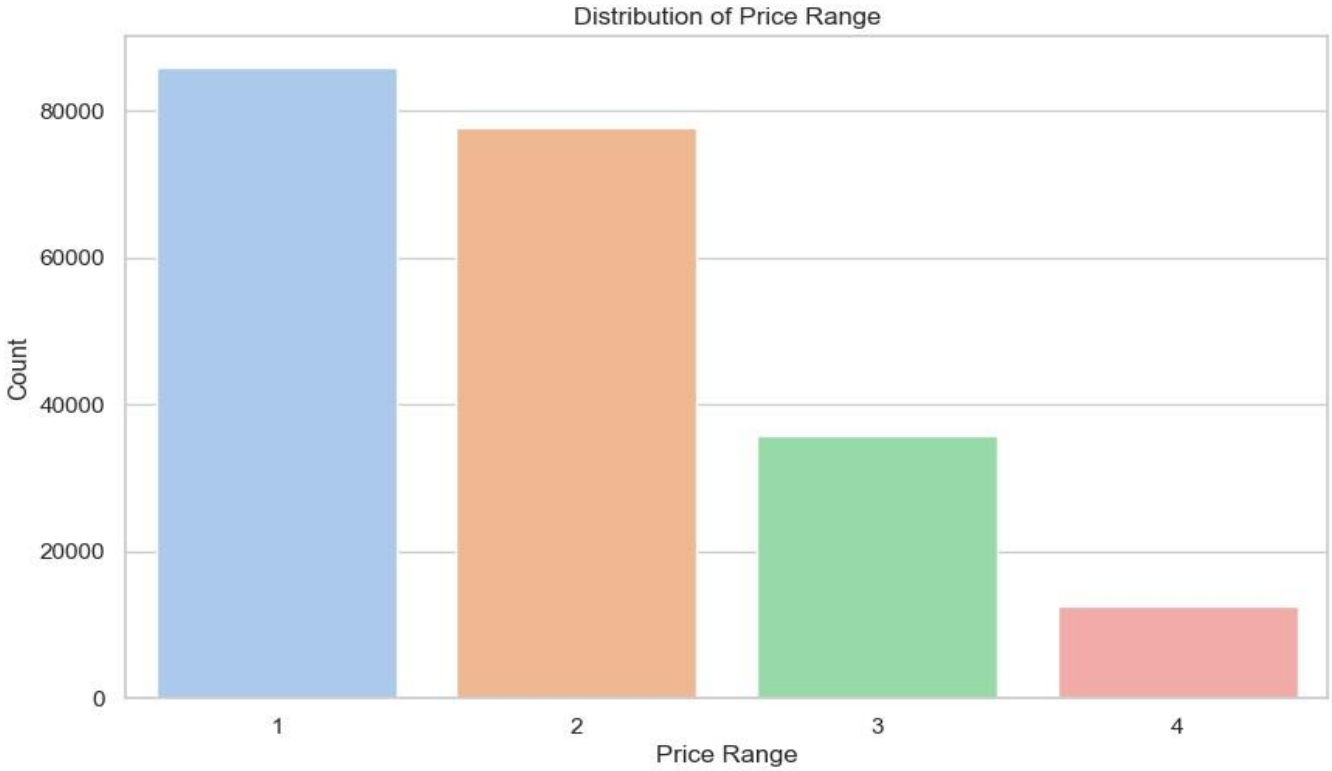
Distribution of Price Range
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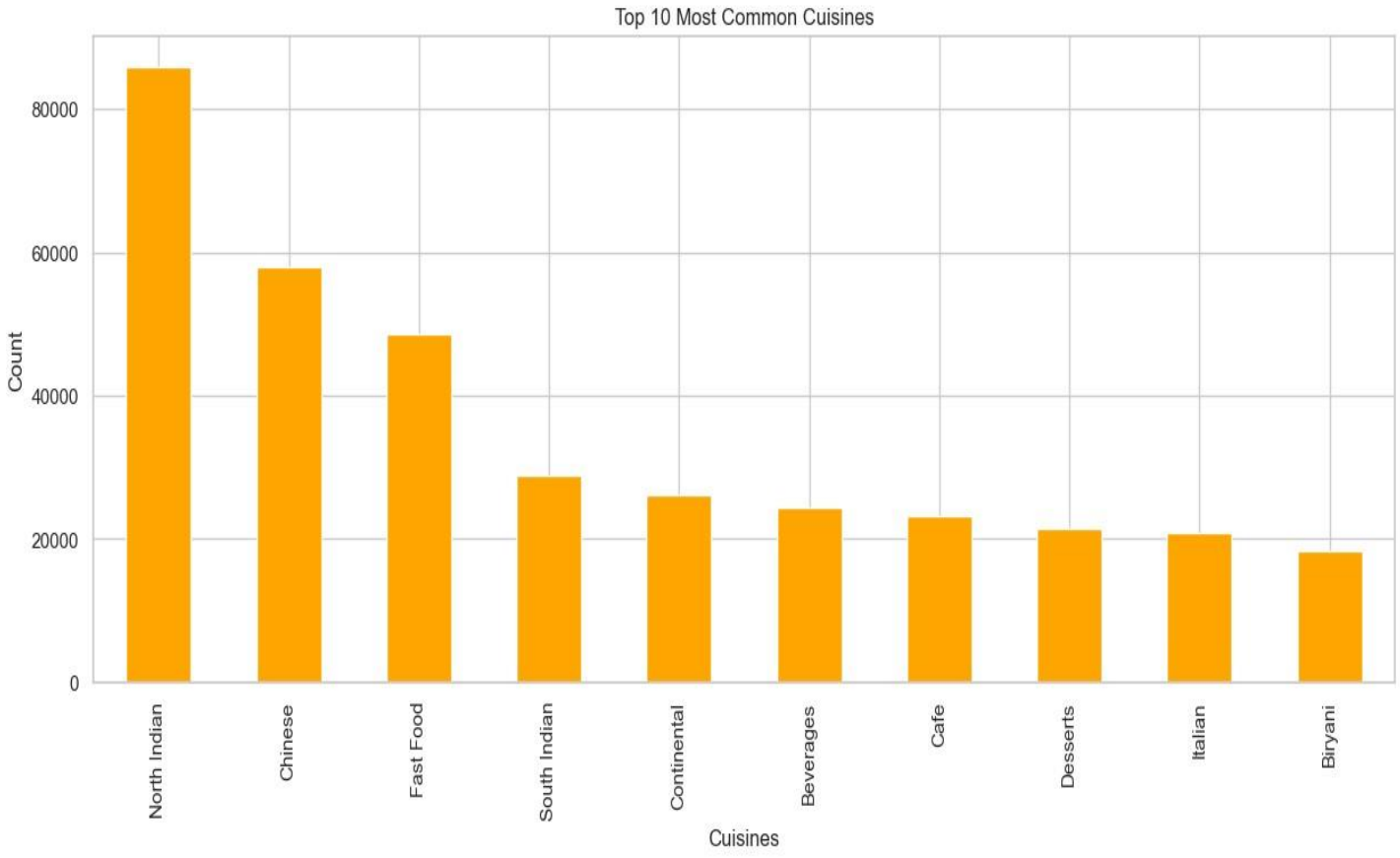
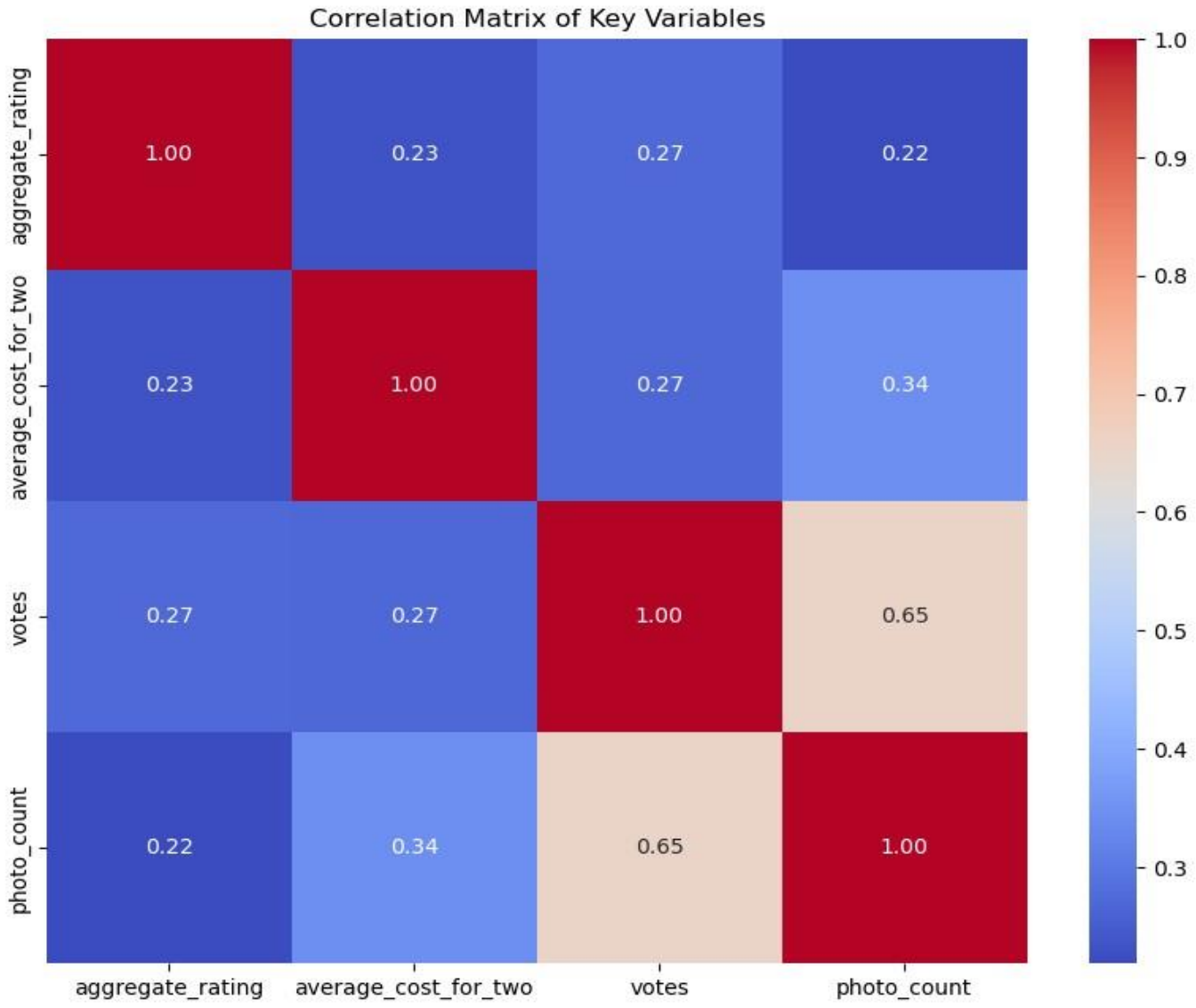


Correlation Analysis

Examining the relationships between different variables helps identify trends and potential areas for further exploration:

- **Correlation Matrix:** A heat map visualized the correlations between aggregate ratings, average cost for two, votes, and photo count. There was a moderate positive correlation between ratings and votes, indicating that popular restaurants tend to have higher ratings.

Relationship between Price Range and Ratings: A scatter plot showed a positive correlation, suggesting that higher-priced restaurants generally have higher ratings.



Regional Analysis

Understanding regional trends is crucial for designing targeted marketing campaigns. The following analyses were conducted:

City-Wise Analysis

This analysis explored restaurant trends and customer preferences across different cities in India:

- **Top Cities with the Most Restaurants:** A bar plot revealed that Chennai, Mumbai, and Bangalore have the highest number of restaurants, indicating their prominence in the dining scene.
- **Popular Cuisines by City:** A count of unique cuisines in each city helped identify the most popular cuisines in different regions.

Average Rating and Price Range by City

Analyzing the average ratings and price ranges across cities provides insights into regional variations:

- **Top 20 Cities with the Most Restaurants:** This analysis confirmed Chennai's dominance in the restaurant scene.
- **Top 10 Most Popular Cuisines across Indian Cities:** This highlighted the popularity of North Indian cuisine in most cities.

Customer Preference Analysis

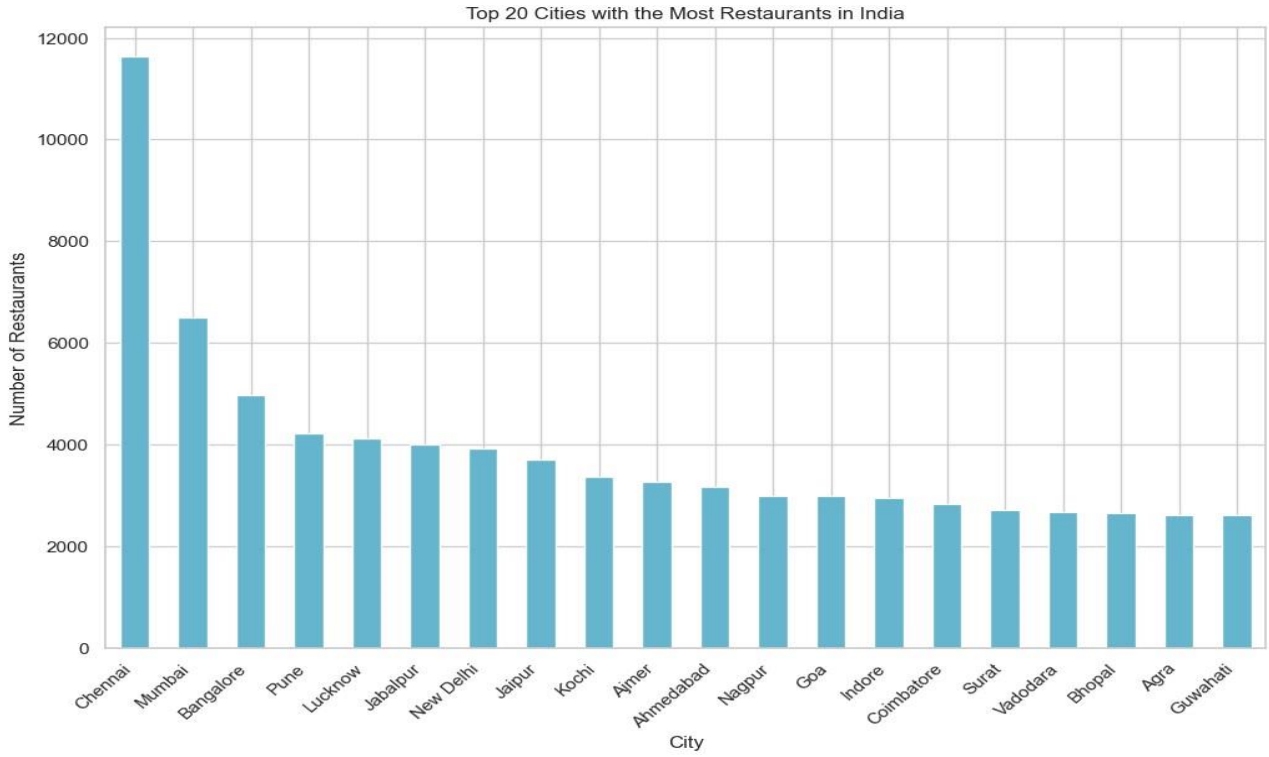
Understanding customer preferences is vital for designing effective marketing campaigns. The following insights were gained:

Popular Cuisines

An analysis of the most popular cuisines across India provided a comprehensive overview:

Top 10 Most Popular Cuisines across India: This analysis reaffirmed the dominance of North Indian cuisine, followed by Chinese, Fast Food, and South

- Indian.



Relationship between Price Range and Restaurant Ratings

A scatter plot examining the relationship between price range and ratings showed that higher-priced restaurants tend to have higher ratings.

Competitive Analysis

Competitive analysis identifies major competitors and their strengths and weaknesses:

- **Major Competitors by Cuisine:** This analysis highlighted key competitors across different cuisines.
- **Top-Rated Restaurants and Their Cuisines:** This analysis identified the top-rated restaurants and their corresponding cuisines.

Market Gap Analysis

Market gap analysis helps identify opportunities for differentiation and unique selling points for the restaurant chain:

Underrepresented Cuisines

By counting the number of restaurants for each cuisine, the analysis identified underrepresented cuisines with fewer than 10 restaurants:

- **Underrepresented Cuisines:** This analysis highlighted potential gaps in the market that the restaurant chain could capitalize on.

Underrepresented Price Ranges

A similar analysis was conducted to identify underrepresented price ranges:

- **Underrepresented Price Ranges:** This analysis identified price ranges with fewer restaurants, offering potential areas for expansion.

Designing the Marketing Campaign

Based on the insights from the above analyses, a marketing campaign was designed with the following strategies:

Targeting Different Regions

The marketing campaign was designed to target specific customer segments in different regions, focusing on unique characteristics and preferences.

Differentiating from Competitors

To stand out in a competitive market, the campaign proposed strategies to differentiate from competitors, including offering unique cuisines or focusing on underrepresented price ranges.

Promotional Tactics

The campaign suggested various promotional tactics, such as discounts, loyalty programs, or special events, to attract and retain customers.

Presentation of Findings

The final step involved preparing a report or presentation summarizing the key findings and the proposed marketing campaign. Visualizations and graphs were used to effectively communicate the insights and recommendations.

In conclusion, this case study demonstrated the power of exploratory data analysis in designing an effective marketing campaign for a restaurant chain. By leveraging data-driven insights, the campaign was tailored to meet customer preferences and capitalize on market gaps, ensuring a successful and impactful marketing strategy.