

Restaurant Ratings and Customer Behavior Analysis – India

Project Overview

The project is an end-to-end data analytics tool developed based on authentic restaurant and customer data obtained from the Google Kaggle site. The purpose of this project was to study the nature of customer and rating information, and make this information meaningful. The project focused on analyzing various characteristics of customers and rating systems in Indian cities.

The entire process undertaken includes data acquisition, processing, storage, analysis, and visualization using Python, MySQL, and Power BI. Therefore, the project described here represents an impressive application of skills for data analytics.

Problem Statement

Customer Demographic and Preference Analysis

Determine the factors contributing to the ratings of restaurants

Examine the effects of the type of cuisine, serving of alcohol, availability of parking, and prices

Compare city-wise and cuisine-wise performance of restaurants

Add Value to Your Operations & Marketing Efforts with Industry Insights

As the name

End-to-End Workflow of a Project

1 Data Collection

Collected datasets of restaurants, customers and ratings from the following:

kaggle by Google

Other publicly available data platforms

Merged several datasets to develop an integrated analytical dataset.

2 Preprocessing & Data Cleaning- Python & Excel

Used Python (Pandas, NumPy) for:

Handling missing values

Removing duplicates

Standardize categorical variables: cuisine, city, parking, alcohol served

Initial data validation and formatting in Excel

Prepared clean datasets for ingestion into the database and BI analysis.

4 Data Visualization & Dashboarding (Power BI)

Linked Power BI to MySQL / processed datasets

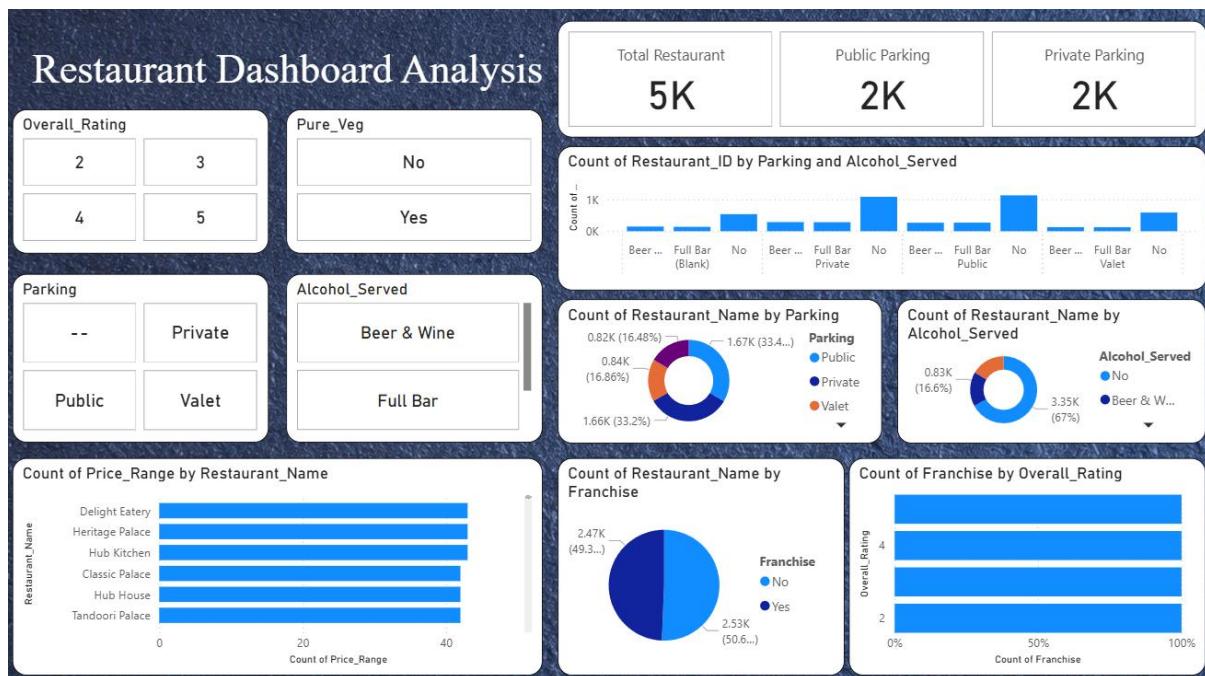
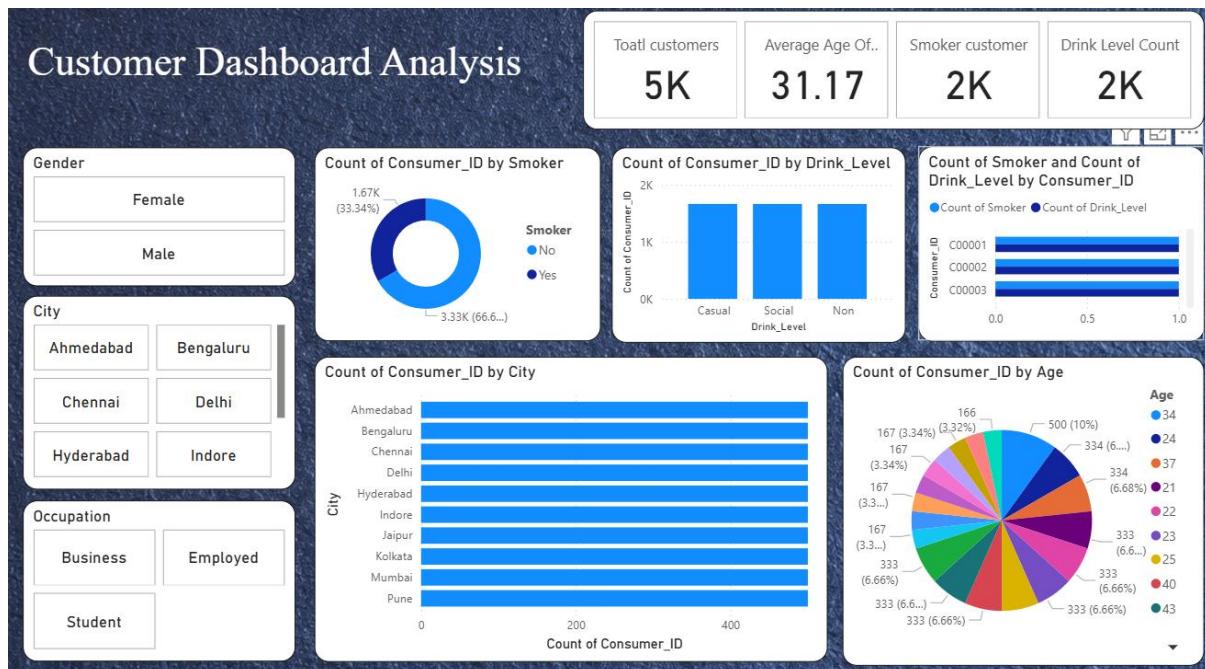
Added interactive dashboards with slicers and drill-downs:

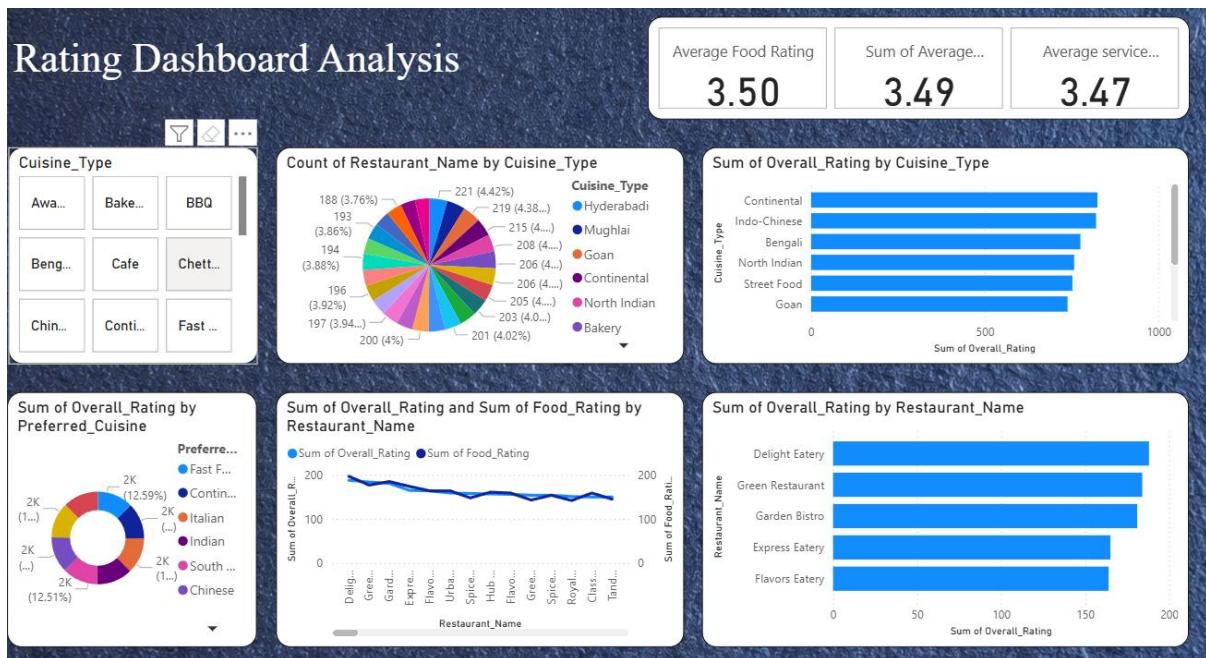
Customer Dashboard - Demographics, Lifestyle Habits, City Distribution

Restaurant Dashboard – parking, alcohol served, franchise, pricing

Rating Dashboard spotlights food and service performance, as well as overall rating indicators.
Rating indicators

Created KPIs, bar charts, donut charts, and trend lines for narrative purposes





Key Insights Generated

The majority of customers do not smoke and are moderate drinkers

The Metro Is Home to the Greatest Number of Clients and Restaurants

Restaurants for a particular cuisine (Continental, Indo-Chinese, North Indian) get rated high

Quality of food has the largest influence on the overall rating of restaurants

Franchised and non-franchised restaurants demonstrate similar performance results

Tools & Technologies Used

Techstack: There

Python (Pandas, NumPy) - Data Cleaning & Preprocessing

MySQL – Data Storage, Joins & Analytical Queries

Power BI

- Interactive dashboards & visual analytics

Excel – Initial exploration and validation

3. Database Design & SQL Analysis - MySQL

Clean data imported in MySQL

Designed structured tables for:

Customers

Restaurants

Ratings

Cuisines

Wrote SQL queries for:

Join several tables

Perform aggregation, filtering

Validate KPIs, for example average ratings, counts and distributions

Business Value

Provides an indication for restaurant operators to determine which cuisine and/or region work well and

Aids marketing departments in targeting the correct customer segments

Helps investors assess the operational aspects of restaurants

Facilitates Improvements in Service and Quality Based on Data

Skills Demonstrated

Collection of Information from Various Sources

Data Cleaning & Transformation

SQL Query Writing & Data Modeling

Business Intelligence & Dashboard Design