A Data-Driven Analysis of Restaurant Delivery Platforms

A Proposal report for the BDM capstone Project

Submitted by

Name: Rishabh Indoria

Roll number: 21F3001823

IITM Online BS Degree Program,

Indian Institute of Technology, Madras, Chennai

Tamil Nadu, India, 600036

Table of Contents

1 A Data-Driven Analysis of Restaurant Delivery Platforms 2

2 Organization Background 2

3 Problem Statements 3

3.1 Investigating the Impact of Cuisine Type on Customer Preferences. 3

3.2 Assessing the Competitive Dynamics of the Restaurant Industry. 3

3.3 Identifying Strategic Opportunities for Restaurant Expansion. 3

4 Background of the Problem 3

5 Problem-Solving Approach 4

6 Expected Timeline 5

7 Expected Outcome 6

List of Figures

1 Work Breakdown Structure 5

2 Gantt Chart 5

Declaration Statement

I am working on a Project Title “A Data-Driven Analysis of Restaurant Delivery Platforms”. I extend my appreciation to Kaggle, Github, Zomato, Swiggy, and UberEats, for providing the necessary resources that enabled me to conduct my project.

I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered through secondary sources and carefully analyzed to assure its reliability.

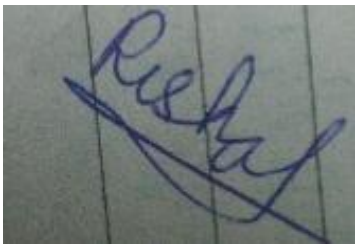
Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

I am dedicated to adhering to the information of academic honesty and integrity, and I am receptive to any additional examination or validation of the data contained in this project report.

I understand that the execution of this project is intended for individual completion and is not to be undertaken collectively. I thus affirm that I am not engaged in any form of collaboration with other individuals, and that all the work undertaken has been solely conducted by me. In the event that plagiarism is detected in the report at any stage of the project's completion, I am fully aware and prepared to accept disciplinary measures imposed by the relevant authority.

I agree that all the recommendations are business-specific and limited to this project exclusively, and cannot be utilized for any other purpose with an IIT Madras tag. I understand that IIT Madras does not endorse this.

Signature of Candidate:



Name: Rishabh Indoria

Date: 10th March, 2024

1 A Data-Driven Analysis of Restaurant Delivery Platforms

The project focuses on multiple online delivery aggregates. This business is B2C and deals in the segment of Online food ordering.

Delivery services play a fundamental role in the marketplace today, this service helps to meet customer's demand for both accessibility and convenience. Restaurants face a number of challenges while trying to streamline their delivery plans to increase productivity, profitability and customer satisfaction. This study intends to gain insights into these problems by scrutinizing the data from many such delivery providers like UberEats, Swiggy, and Zomato. This study aims to assist restaurants in finding out better ways for their delivery operations, looking at criteria such as order volume, customer ratings, service quality, and regional patterns across multiple platforms.

The analytical approaches used in this study include descriptive statistics, which gives an overview of the dataset. Correlation Analysis is also used to identify strong relations between different variables. Another analytical approach used is the Regression Analysis, which aims to establish patterns or links between variables to try and identify what customers look for. Clustering is also attempted to see which is the most common attribute between restaurants, and also identify which cuisine type is most common between the customers. Finally, Geospatial Analysis is done to identify where the restaurants with the highest ratings are located.

The aim of the research is to increase growth of the food delivery market by giving advice to the restaurants regarding their partnership prioritization, service changes, geographic expansion and strategic move.

2 Organization Background

Zomato, Swiggy, and UberEats are leading online food delivery platforms that have revolutionized the global food industry. Zomato, founded in India, offers comprehensive restaurant discovery and delivery services. Swiggy focuses on fast, reliable delivery, catering to demand for convenient dining. UberEats, a subsidiary of Uber, provides seamless food ordering worldwide. These platforms offer diverse choices, efficient delivery, and enhanced dining experiences.

3 Problem Statement

3.1 Investigating the Impact of Cuisine Type on Customer Preferences. This is a study of Cuisine Type, Price, and Online Ordering Availability at the restaurants, which aims to give insights towards customer preferences.

3.2 Assessing the Competitive Dynamics of the Restaurant Industry. The aim is to analyze factors that influence ratings, reviews, and revenue.

3.3 Identifying Strategic Opportunities for Restaurant Expansion. This aims to analyze geospatial distribution of the restaurants, and identify which location seems to be the most popular among customers.

4 Background of the Problem

The strategic success of any restaurant's development into a new market is dependent on the customer's preferences. As such, restaurants need to keep track of what factors do customers consider when choosing a restaurant to order, or dine in. The aim of this project is to research different factors affecting customer preferences and satisfaction. In a continuously evolving and dynamic sector, this research would enable the restaurants to modify their offers, devise strategies, and also pinpoint locales for their expansion and advancement.

5 Problem-Solving Approach

- **Data Collection:** Data for this research project was gathered from a variety of secondary sources which include online platforms such as Kaggle, GitHub, APIs (Application Programming Interfaces), and other publicly available datasets. By using these secondary sources, the research aims to capture a comprehensive view of the industry landscape.
- **Data Analysis:** The collected data is cleaned and preprocessed. Then it goes through a rigorous analysis using a combination of quantitative and qualitative techniques. Quantitative analysis involved statistical methods to uncover relationships and patterns within the data. Techniques such as regression analysis are utilized to identify the impact of restaurant attributes on customer satisfaction and revenue. Correlation analysis is also conducted to try and identify associations between variables. Finally, qualitative analysis is done, which should complement the quantitative findings by delving deeper into customer preferences.
- **Tools and Software:** Python is employed for quantitative analysis, enabling robust statistical tests and data modeling. It allowed for the easy manipulation and analysis of the datasets, facilitating the exploration of relationships and patterns within the data. Different libraries such as sci-kit learn also enable to perform Regression, Correlation, and Geospatial analysis. Data visualization tools such as Tableau and matplotlib are also used to create visually appealing and informative charts, graphs, and maps, which helps in interpretation of different relations between the variables.
- **Documentation and Validation:** Throughout the research process, meticulous documentation of methodology, data sources, and findings are maintained to ensure transparency and reproducibility.

6 Expected Timeline

6.1 Work Breakdown Structure

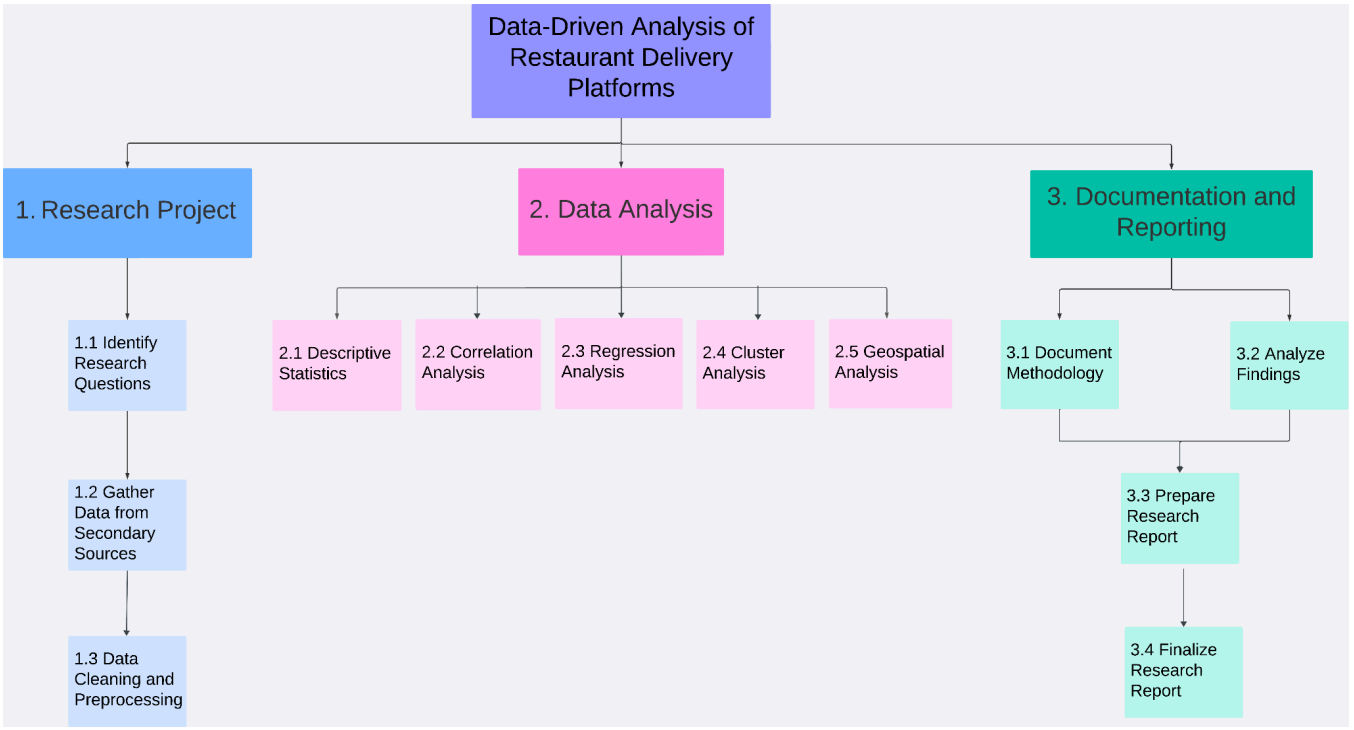


Figure 1: Work Breakdown Structure

6.2 Gantt chart

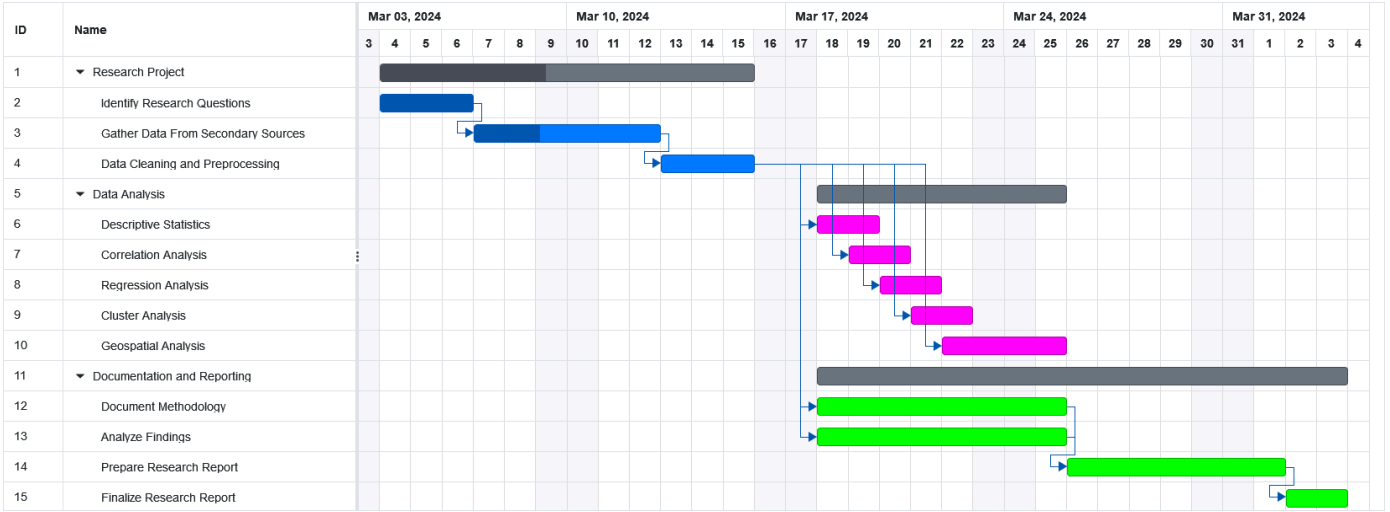


Figure 2: Gantt chart

7 Expected Outcome

7.1 Gain deeper insights into the impact of different factors that affect restaurant rating, popularity, and reviews.

7.2 Identify strategic opportunities for restaurant expansion by analyzing demographic patterns, and consumer preferences.

7.3 Provide actionable recommendations for strategic decision-making and operational improvements for restaurant operators.