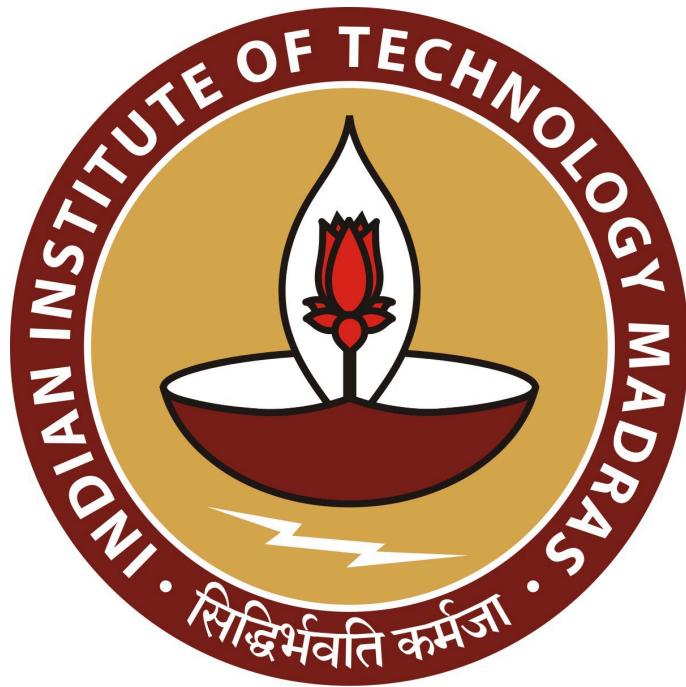


Case Study of Food Plaza Restaurant
A Mid-Term report for the BDM capstone Project

Submitted by:

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Declaration Statement

I am working on a Project Title “Financial and Operational Case Study of Food Plaza Restaurant”. I extend my appreciation to Food Plaza, 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 primary 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: (Digital Signature)

Name: Shreeya Baral

Date: July 2, 2024

Executive Summary

Food Plaza Restaurant, a small dining establishment in Vasundhara Enclave, East Delhi, has been operating since 2016. The restaurant faces operational challenges, including an extensive and inefficient menu, inconsistent customer footfall, and a weak online presence. This mid-term report analyzes these issues using data collected over four months (May-August 2024) to assess revenue patterns, customer behavior, and menu performance.

A comprehensive data analysis framework was applied to study daily revenue, customer feedback, cost structures, and sales trends. The dataset consists of key operational variables such as cost price, selling price, daily units sold, and revenue. Data visualization techniques, including bar charts, line graphs, and comparative analyses, were used to extract insights regarding revenue fluctuations and menu item profitability.

The findings indicate that certain menu items, such as Butter Chicken (₹140,585 cumulative profit) and Paneer Butter Masala (₹106,260 cumulative profit), consistently contribute to revenue, while other items, including Chicken Momos (₹35,673 cumulative profit) and French Fries (₹43,020 cumulative profit), underperform. Customer footfall analysis highlights weekend peaks and mid-week drops, suggesting opportunities for promotional interventions. Furthermore, initial observations suggest that refining the menu and adjusting pricing strategies could significantly enhance profitability.

The profit trend analysis indicates a decline from May to June (-₹19,273), followed by significant growth in July (+₹76,029) and August (+₹23,399), reinforcing the importance of seasonal strategies and optimized menu offerings. The next phase will focus on implementing these strategies, monitoring their impact, and refining the recommendations based on data-driven insights.

Proof of Originality

The data used in this report has been collected directly from Food Plaza through personal interactions with the owner and staff over a four-month period (May-August 2024). Due to the small-scale nature of the business, obtaining a recorded video interaction was not feasible. However, all financial figures, sales data, and customer feedback were collected firsthand and verified through consistent engagement.

A letter from the organization, verifying data authenticity, has been provided alongside this submission.



Food Plaza

Shop No. 5, DDA Market
Near Maharaja Agrasen College
Vasundhara Enclave
Delhi 110096

Mar 07, 2025

To whomsoever it may concern

This letter is issued to verify and authorise that SHREEYA BARAL has approached for obtaining the business-related data from Food Plaza, for the fulfilment of her Capstone project in the Business Development Management course. Relevant data has been provided to carry out the analysis as required for the project.

SHREEYA BARAL has confirmed that she will not share the provided business data with anyone else and use it purely for academic purposes.

Wishing her to have the best out of the data for the academic purposes.

Regards
Prakash Chandra Tiwari
Food Plaza

FOOD PLAZA

Proprietor

Fig1: Pictures of store and interaction with store owner

Verification of Data Collection & Business Authorization

The images showcase the interaction with the Food Plaza proprietor during the data collection process for the capstone project. The official authorization letter, signed by the proprietor, confirms the legitimacy of the business data provided for academic analysis.

Metadata and Descriptive Statistics

The dataset consists of financial and operational parameters collected over a four-month period. Below is a statistical summary of key variables:

Metadata Overview

The dataset consists of operational and financial records for the restaurant from May to August 2024. The following key variables were collected:

- Cost Price and Selling Price: Used to compute profit margins.
- Units Sold: Tracks demand trends for each menu item.
- Customer Footfall: Records the number of daily customers.
- Revenue Data: Total earnings per day.
- Online Engagement Metrics: Includes social media interactions and reviews.

Descriptive Statistics

Item name vs measure	VEG MOMOS	CHICKEN MOMOS	CHILLI POTATO	VEG SPRING ROLL	FRENCH FRIES	VEG NOODLES	CHICKEN NOODLES	PANEER BUTTER MASALA	PANEER DO PYAZA	PANEER TIKKA MASALA	PINDI CHANA MASALA	CHICKEN TIKKA MASALA	CHICKEN MALAI TIKKA	BUTTER CHICKEN	KADHAI CHICKEN	CHICKEN MASALA
count	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123
mean	15.0081301	8.78861789	13.7154472	9.6504065	5.82926829	13.7560976	9.04878049	6.17073171	3.67479675	6.37398374	6.28455285	5.81300813	4.52845528	7.37398374	3.7804878	3.63414634
std	5.73384535	4.79284308	3.16621594	3.36565035	2.71820613	3.44593242	4.96191009	3.3989085	2.10189585	3.29280979	2.98499066	3.84824762	3.19663041	4.34835257	2.58791829	1.86981323
min	2	1	7	2	0	4	1	1	0	1	0	0	0	2	0	0
25%	11	5	12	7	4	12	5	3.5	2	4	4	3	2.5	4	2	2
50%	15	8	14	9	6	14	9	5	4	5	6	5	3	6	4	3
75%	19	13	16	11.5	7.5	16	12	8	5	8	9	8.5	7	10.5	5.5	5
max	28	20	22	18	15	23	19	16	13	15	13	16	15	17	11	9
Variable	Mean	Median	Mode	Std Dev	Skewness											
Units Sold	948.875	778.5	447	454.154434	0.80130183											
Daily Revenue (in ₹)	21762.1212	18960	15570	5252.00721	0.8761407											

Interpretation of Statistical Parameters:

- Mean: Represents the average trend in revenue and customer turnout.
- Median: Shows the middle value, providing a more stable measure.
- Mode: Highlights the most frequently occurring sales figure.
- Standard Deviation: Helps analyze revenue fluctuations across different days.
- Skewness: Indicates whether revenue distribution is symmetrical or affected by outliers.

The standard deviation suggests high variability in daily revenue, while the skewness indicates that some days generate significantly higher sales than others. These insights help in adjusting pricing and promotional strategies.

Data Collection Process

- The data was collected physically by visiting the restaurants through daily and alternate-day visits.
- Period: 4 months (May to August 2024)
- [link to data](#)

Detailed Explanation of Analysis Process

- To analyze the restaurant's financial and operational performance, various data-driven methods were employed. The following key techniques were applied:
- Data Cleaning & Structuring: Missing values were handled, and outliers (e.g., large sales spikes during special events) were flagged.
- Descriptive Statistics: Key performance metrics such as average revenue, cost trends, and customer turnout were calculated.
- Data Visualization: Trends were presented using line charts, bar graphs, and stacked histograms to identify key revenue drivers.
- Comparative Analysis: Sales performance was benchmarked across different menu items to assess profitability trends.

This structured approach enabled an in-depth understanding of operational strengths and weaknesses, helping to shape actionable recommendations.

Results and Findings (Graphs and Other Pictorial Representation)

Total 16 food menu has been considered for the study. The net profit obtained for these menus for these four months is shown in table 1.

Table1: Month wise Profit wrt food menu

Name of food	Profit (in Rs)				Cumulative
	May	June	July	Aug	
VEG MOMOS	22560	21760	15080	14440	73840
CHICKEN MOMOS	9240	7590	10032	8811	35673
CHILLI POTATO	19551	18473	28920	25740	92684
VEG SPRING ROLL	14795	14465	17435	18590	65285
FRENCH FRIES	8880	8340	12900	12900	43020
VEG NOODLES	26220	25500	26040	23760	101520
CHICKEN NOODLES	27700	24600	30100	28900	111300
PANEER BUTTER MASALA	21560	21840	30940	31920	106260
PANEER DO PYAZA	13250	13625	14250	15375	56500
PANEER TIKKA MASALA	22620	21320	28730	29250	101920
PINDI CHANA MASALA	25785	22950	27270	28350	104355
CHICKEN TIKKA MASALA	24640	19880	24080	31500	100100
CHICKEN MALAI TIKKA	5800	5000	19320	28420	58540
BUTTER CHICKEN	31775	29605	39680	39525	140585
KADHAI CHICKEN	13950	12865	20460	24800	72075
CHICKEN MASALA	15500	16740	15345	21700	69285

Problem 1: Menu Optimization

- Sales Data: The top five profitable items contributed to over 50% of total revenue. Butter Chicken alone accounted for ₹140,585 in cumulative profit.
- Recommendation: Remove or modify underperforming items (e.g., Chicken Momos) and enhance popular dishes with premium versions.

Overall Revenue Comparison

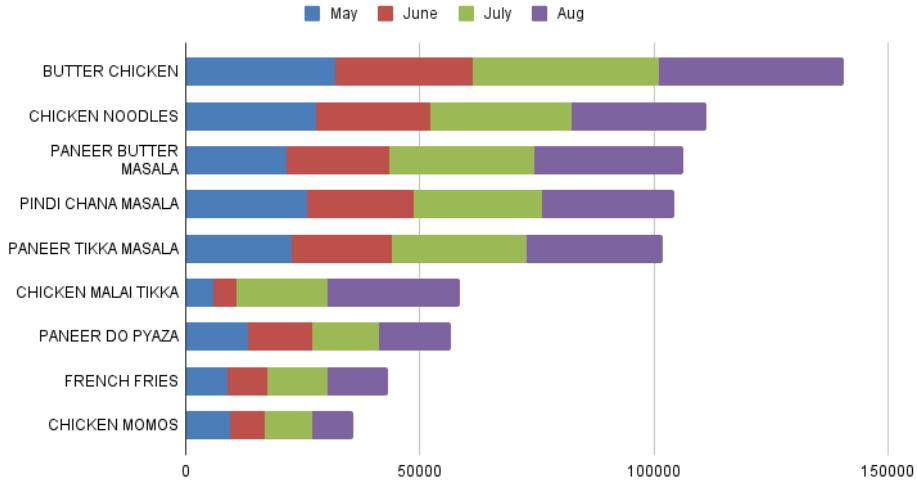


Fig2: Items vs Revenue generated (in ₹)

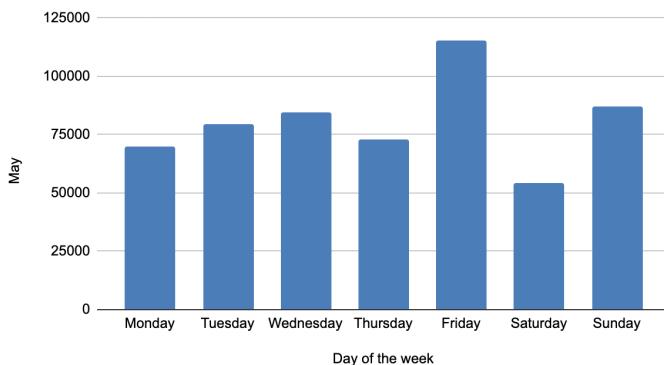
Problem 2: Weak Online Presence

- Data Limitation: No available data on social media engagement.
- Analysis Focus: Instead of tracking digital performance, this section discusses potential benefits of digital marketing in future phases.
- Recommendation: Consider introducing online promotions in the next phase and track their impact on customer footfall and revenue.

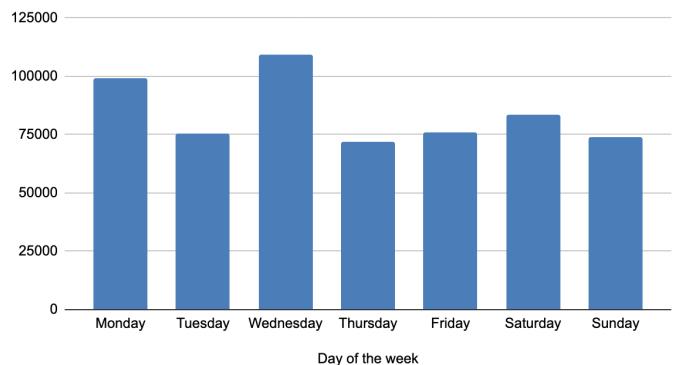
Problem 3: Low Sales on Certain Days

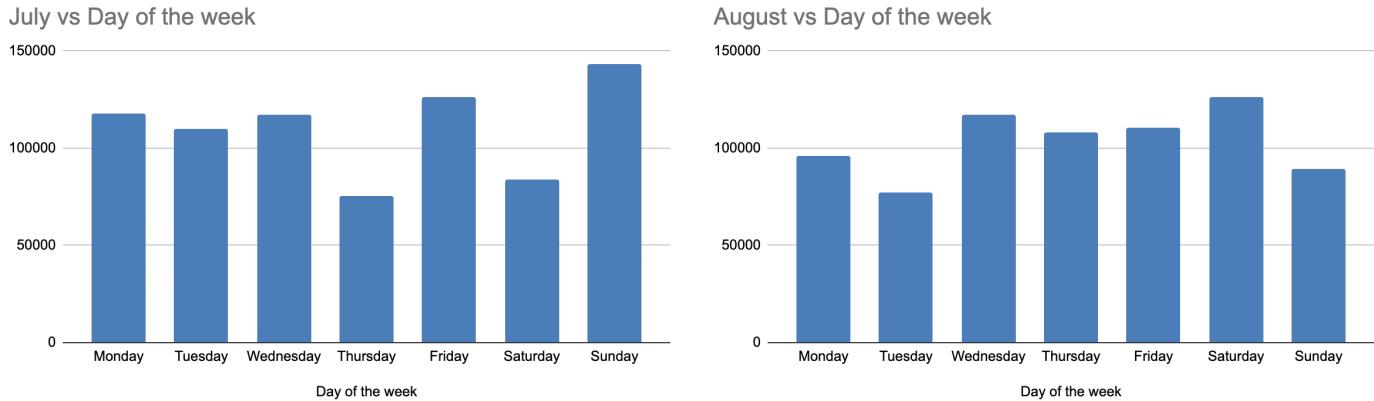
- Revenue Trends: Revenue fluctuates significantly across different days of the week. Sunday consistently generates the highest revenue, particularly in July (₹143,580) and August (₹89,360). In contrast, Thursday sees lower revenues, averaging around ₹72,850 in May and ₹75,180 in July.
- Weekday vs. Weekend Comparison: While weekends (Friday-Sunday) generally outperform weekdays, there are inconsistencies, such as in June, where Wednesday (₹109,170) had a peak revenue spike. This suggests customer behavior may vary based on external factors such as promotions or local events.
- Recommendation: Implement targeted discounts on low-performing days (e.g., Thursday and Tuesday) while capitalizing on high-traffic days (e.g., Sunday) with combo offers or premium pricing.

May vs Day of the week



June vs Day of the week





Breakdown of Highest & Lowest Revenue Days per Month

- May: Friday had the highest revenue (~₹115,120), while Saturday had the lowest (~₹54,380).
- June: Wednesday had an unexpected peak (~₹109,170), while Thursday was the lowest (~₹72,040).
- July: Sunday performed best (~₹143,580), while Thursday had lower revenue (~₹75,180).
- August: Saturday led (~₹126,160), while Tuesday was among the lowest (~₹77,500).

Key Takeaways from the Charts:

- Weekends (Friday-Sunday) usually perform better than weekdays.
- Unexpected spikes like Wednesday in June suggest external factors (promotions/events) may influence revenue and targeted weekday discounts (Tuesday & Thursday) can help stabilize revenue.

Day vs Revenue Comparision

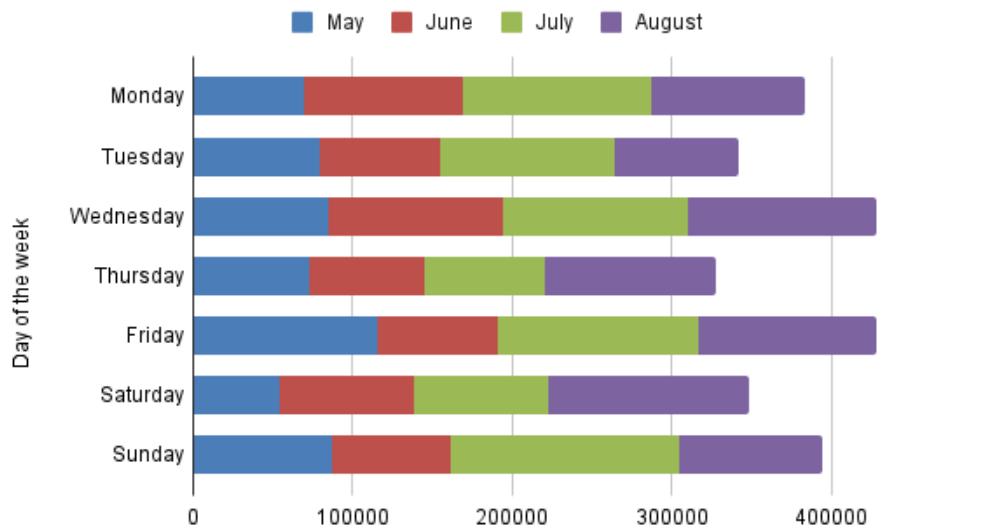


Fig3: Day vs Revenue generated (in ₹)

By combining these analysis techniques and visualizations, the analysis provided a comprehensive view of the restaurant's operational dynamics, customer preferences, and revenue performance. This approach enabled a strategic review of opportunities for improvement, including potential areas for cost reduction, targeted promotions, and optimizing the menu based on popular items.

Hence on the analysis of daily sales data and item performance charts, several key insights have emerged:

1. *Core Revenue Drivers*: Signature dishes such as Paneer Butter Masala and Chicken Biryani stand out as the primary revenue contributors for Food Plaza. These items consistently generate high sales volume, indicating strong customer demand.
2. *High Profit Margin Items*: While items like Chicken Biryani lead in total sales, side dishes such as Masala Papad and Raita exhibit the highest profit margins. Despite their lower sales volume, these items contribute significantly to the profit margin due to their low ingredient costs.
3. *Top Performing Days*: Analysis of daily revenue reveals that weekends (especially Saturdays) consistently outperform weekdays in terms of customer turnout and revenue. This suggests a strategic opportunity to offer weekday promotions to increase mid-week sales. Scheme like discount, free offer should provided to those who frequently ordered the food from the restaurant.
4. *Menu Optimisation Potential*: Certain items, such as Sweet Lassi and Veg Pulao, show lower sales and contribute minimally to both revenue and profit. Phasing out these low-demand items could help streamline kitchen operations and focus resources on higher-performing dishes. Dishes need to add new flavored to sustain the market demand. Authentic south Indian food will enhance the profit as most of south Indian community will add into the guest list.
5. *Stable Cost Patterns*: Ingredient costs remained relatively stable throughout the month, with minimal price fluctuations. This stability helps maintain consistent profit margins, allowing for more predictable financial planning.
6. *Customer Feedback Trends*: Positive feedback is frequently associated with high-selling items like Paneer Butter Masala, which aligns with the data showing these as customer favorites. Conversely, feedback regarding wait times was most common on weekends, indicating a potential area for operational improvement.

Conclusion

In summary, the analysis highlights the importance of focusing on popular, high-margin items and suggests that certain low-performing menu options may be optimized or removed. Additionally, the stability in ingredient costs supports consistent profit margins, while customer feedback provides actionable insights to enhance customer satisfaction, particularly on high-traffic days.

In the next step of the project, we shall work on increasing sales in underperforming menu items through targeted promotions and revamping recipes based on customer preferences. Additionally, we can aim to introduce weekday-specific offers to drive mid-week traffic, improving revenue consistency. Further analysis will also explore the potential of bundling popular items with less popular ones to boost their sales while enhancing the customer experience.