

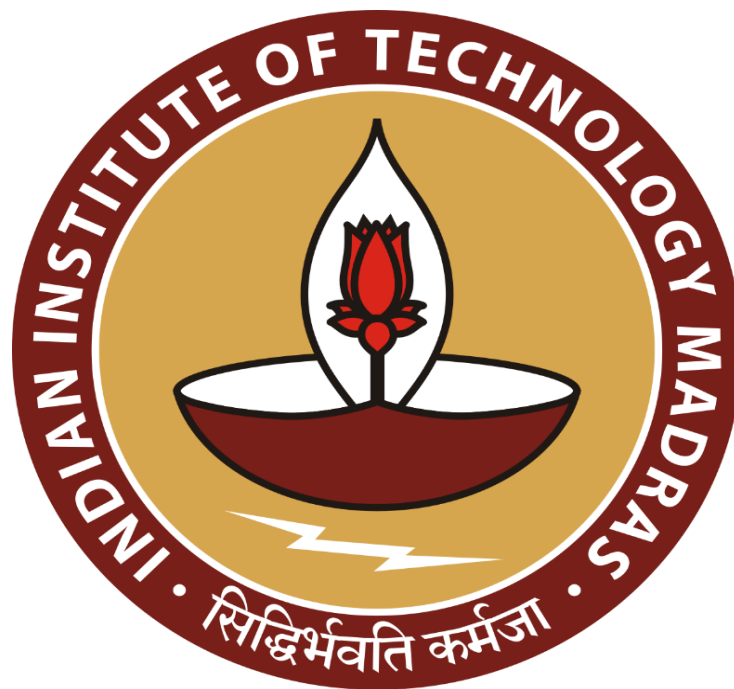
MODIKHANA METRICS: Unlocking Sales with Data

Proposal report for the BDM capstone Project

Submitted by

Name: Jashan Tiwari

Roll No. : 23F3000922



IITM Online BS Degree Program,

Indian Institute of Technology, Madras, Chennai

Tamil Nadu, India, 600036

Contents

Declaration Statement	2
1. Executive Summary	3
2. Organization Background	3
3. Problem Statements	4
3.1 Overstocking and Inventory Inefficiency	
3.2 Sales Volatility and Unreliable Cash Flow	
4. Background of the Problem	4
5. Problem Solving Approach	5
6. Expected Timeline	7
6.1 Work Breakdown Structure	
6.2 Gantt Chart	
7. Expected Outcome	8

Declaration Statement

I am working on a Project Title “MODIKHANA METRICS: Unlocking Sales with Data”. I extend my appreciation to “Guru Ji Da Modikhana” 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

Name: Jashan Tiwari

Date: 8-09-2025

1.Executive Summary

This project focuses on **Guru Ji Da Modikhana** a local retail business based in Rajpura, Punjab. Established in **April 2019**, this B2C enterprise is dedicated to supplying daily necessities with a core mission of providing convenience and reliable value. Serving hundreds of customers and processing over **6,500** transactions in the last quarter, the business aims to solidify its position as a trusted store for the community, serving many customers every month.

However, a recent analysis of sales data has identified two primary challenges impacting profitability. **First**, a significant amount of working capital is tied up in underperforming products, which limits cash flow and creates a risk of stockouts on high-demand items. **Second**, the business experiences a sharp sales drop in the second half of each month, creating an unstable revenue cycle.

To address these challenges, this project will apply targeted data analysis techniques. The primary focus will be on using **Product Performance Evaluation (ABC Analysis)** and **Sales Pattern Identification** to optimize inventory, improve cash flow, and create effective promotions.

By doing this, we expect to keep the right products on the shelves and achieve more stable cash flow. This plan will strengthen the store's ability to meet customer demand consistently and improve profitability in the long term.

2.Organization Background

Guru Ji Da Modikhana is a family-owned grocery shop that started in April 2019. It is located at Shop No. 2, New SBS Colony, Rajpura, Punjab. The shop was founded by Mr. Bhupinder Singh and is managed by his brother, Mr. Harpreet Singh, who looks after daily work with the help of three employees. The store runs on a **Business-to-Consumer (B2C)** model, serving local families directly with essential items like groceries, household goods, and personal care products.

Over the years, the shop has become a trusted part of the neighbourhood because of its convenience and friendly service. Its main aim is to provide a one-stop place for daily needs while also keeping up with changing customer habits.

Still, the shop faces some challenges. A lot of money is locked in products that do not sell fast, which reduces cash flow. Sales also drop in the second half of every month, creating ups and downs in income. Using sales data to make better decisions can help the shop run smoothly and grow in the future.

3.Problem Statements

Problem Statement 1: Overstocking of underperforming products is trapping cash and valuable shelf space, reducing overall profitability and creating a risk of stockouts on high-demand items.

Problem Statement 2: Significant sales volatility, with a sharp decline in the second half of each month, creates unreliable cash flow and prevents steady revenue growth.

4.Background of the Problem

Guru Ji Da Modikhana is facing two key challenges that directly affect its cash flow and long-term growth: **overstocking of slow-moving items** and **unstable sales patterns across the month**. These problems are the result of both internal practices and external market conditions.

Main Reason:

The central issue lies in the lack of structured demand forecasting and systematic use of available sales data. Although detailed sales registers are maintained, the information is not actively analyzed to understand demand trends, seasonal preferences, or customer purchasing cycles. As a result, the store faces difficulty in aligning its procurement with actual market needs. Overstocking of underperforming items ties up working capital and valuable shelf space, while fast-moving items occasionally run out, leading to missed sales opportunities. Furthermore, sales show a consistent decline in the second half of each month, reflecting weak planning against consumer salary-driven spending patterns.

Internal Factors:

- i. **Excess Inventory:** Large quantities of underperforming goods remain unsold, locking up cash and shelf space.
- ii. **Risk of Stockouts:** Popular items sometimes run out because funds are stuck in less-demanded products.

- iii. **Sales Imbalance:** A noticeable dip in customer purchases during the second half of each month reduces income stability.
- iv. **Limited Use of Records:** While sales are noted, the data is not fully used to guide purchasing or promotions.

External Factors:

- i. **Spending Habits:** Local buyers tend to reduce purchases after mid-month, likely due to salary cycles.
- ii. **Competition:** Other retailers offer discounts and flexible options that draw away customers.

These issues reduce profitability and limit steady cash flow. Tackling them through better stock control and sales analysis is essential for improving stability and supporting the shop's future growth.

5.Problem Solving Approach

5.1 Methods

To solve the problems of overstocking and sales volatility, the approach will rely on **data-driven inventory and sales analysis**. The first step will be to study product movement using the sales register, which records item details, bill dates, quantities, and revenue. By grouping products into categories (fast-moving, moderate, and slow-moving), the store can decide where to invest more cash and which items should be stocked in smaller amounts.

For managing uneven sales, **trend analysis** will be applied on daily and weekly sales totals. This will show whether the sharp decline in the second half of the month is consistent, and if so, the store can plan promotions or supplier negotiations to stabilize revenue.

Together, these methods will help reduce cash tied up in unsold goods, ensure that fast-moving items are always available, and provide better control over monthly income.

5.2 Data Collection

The data already available in the sales register contains the most relevant fields:

- i. **Bill Date (DD/MM/YYYY)** → To study sales trends by day and half-month periods.
- ii. **Item Code and Item Name** → To identify which products are strong performers and which are underperforming.
- iii. **Total Quantity Sold** → To check movement speed of each product.
- iv. **Rate per Unit and Net Amount** → To calculate total sales value and contribution of each product.
- v. **Gross Amount and Discounts (C.D.)** → To see how much impact discounts have on sales.

Additional information will also be collected from purchase and stock records:

- i. **Opening Stock and Closing Stock** → To track turnover and detect overstocking.
- ii. **Buying Price vs. Selling Price (Margin)** → To check which items generate profit and which block cash flow.
- iii. **Payment Mode (Cash / UPI / Credit)** → To check if sales cycles are linked to how customers pay (e.g., cash shortage after mid-month).
- iv. **Safety Stock** → To see if there is a proper buffer maintained for popular items.

5.3 Analysis Tools

The main tool for this project will be **Microsoft Excel**, which can easily handle sales registers and support comprehensive analysis using pivot tables, filters, and interactive charts. Pivot tables will help rank products by sales value and volume, while detailed line graphs will illustrate revenue trends and patterns across the month.

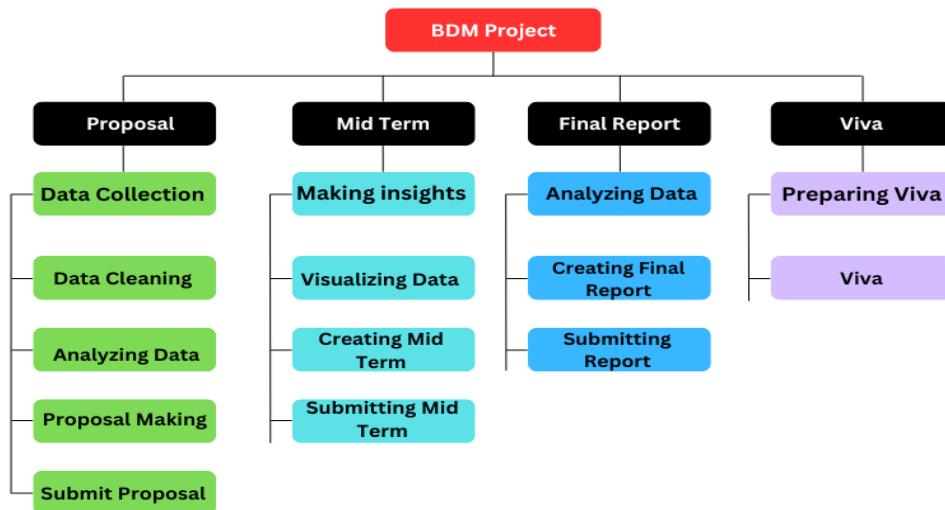
For quick sharing and collaborative visualization, **Google Sheets** may also be used effectively. For more advanced statistical analysis, **Python** can be applied to automate complex calculations, generate professional charts, and perform sophisticated trend analysis efficiently.

These tools are practical, cost-effective, and user-friendly, making them particularly suitable for a small retail business environment. They provide the valuable insights needed to make better informed decisions regarding inventory stock management and strategic monthly sales planning.

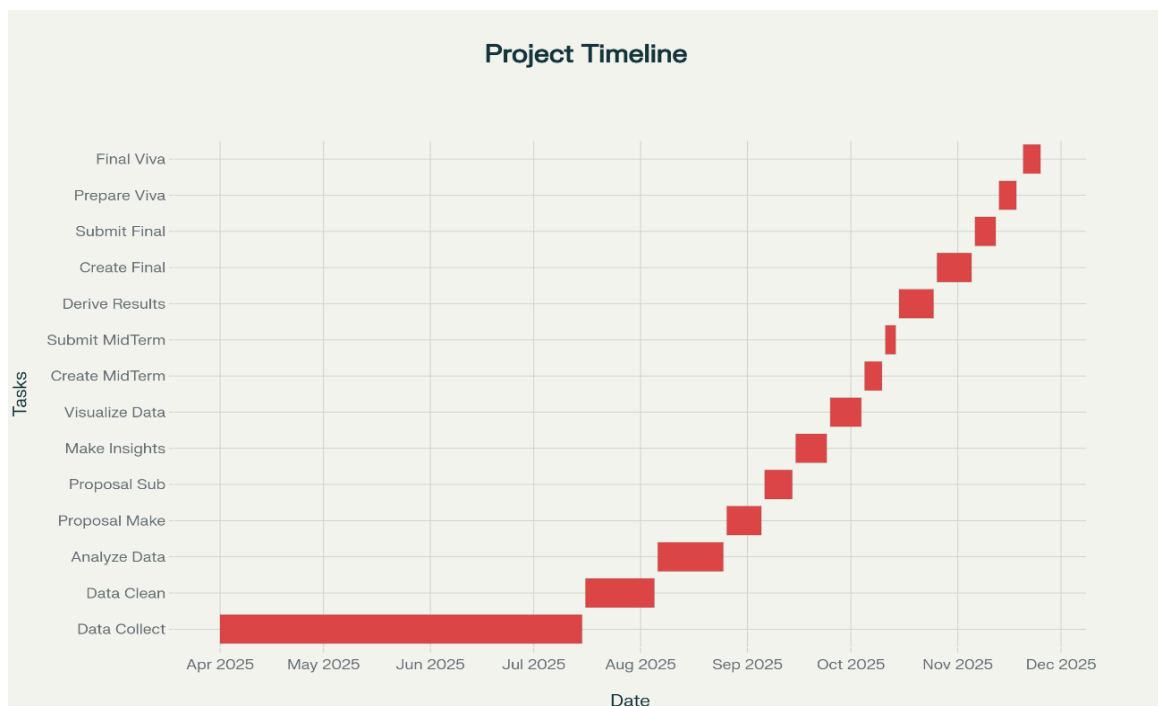
6.Expected Timeline

6.1 Work Breakdown Structure

Work Breakdown Structure



6.2 Gantt Chart



7.Expected Outcome

1. An ABC classification of products will be prepared to separate fast-moving essentials from slow-moving items.
2. A monthly sales trend will be mapped to confirm the revenue decline in the second half of each month.
3. Profitability insights will be drawn using rate, gross amount, and net amount to support better pricing and stocking.
4. Recommendations will focus on reducing excess stock of underperforming goods and ensuring the availability of daily essentials.
5. The role of discounts in improving sales during slow periods will be evaluated.
6. All outcomes will be based on structured analysis of sales register fields such as bill date, item name, quantity, discounts, and net amount, ensuring decisions rely on data rather than guesswork.