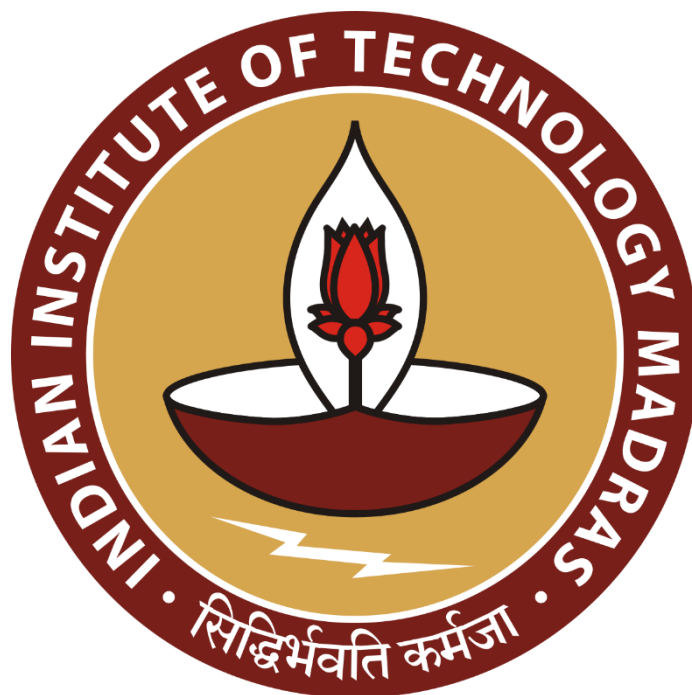


StoreSafe: Grocery Risk Assessment  
A Proposal report for the BDM capstone Project

Submitted by

Name: Shakti Soni

Roll number: 22f1001845.



IITM Online BS Degree Program,  
Indian Institute of Technology, Madras, Chennai  
Tamil Nadu, India, 600036

## Contents

1	Summary of StoreSafe: Grocery Risk Assessment	3
2	Organization Background	3
3	Problem Statement	4
3.1	Find loyal customers:	4
3.2	Find the sales and profit from each category:	4
3.3	Find the most preferred product from each category:	4
4	Background of the Problem	4
5	Problem Solving Approach	5
6	Expected Timeline	6
6.1	Work Breakdown Structure:	6
6.2	Gantt chart	7
7	Expected Outcome	7

## **Declaration Statement**

I am working on a Project titled “**StoreSafe: Grocery Risk Assessment**”. I extend my appreciation to Agrawal Soap Works & Kirana Store, 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 from 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 principles 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 understand that all recommendations made in this project report are within the context of the academic project taken up towards course fulfillment in the BS Degree Program offered by IIT Madras. The institution does not endorse any of the claims or comments.



Signature of Candidate:

Name: Shakti Soni

Date: 04/05/2024

## 1 Summary of StoreSafe: Grocery Risk Assessment

This project is titled “**StoreSafe: Grocery Risk Assessment**”. The project focuses on a small grocery store located at Morena, Madhya Pradesh. The business is B2C and deals in the segment of grocery.

The major business issues that the organization is facing are finding loyal customers, profits, and most preferred product in each category.

The issues will be addressed by analyzing the data via different analytical approaches to obtain a fruitful outcome. We will use analysis techniques like RFM (Recency, Frequency, Monetary), hazard probability, plots i.e. histogram, heatmap etc.

The expected outcome helps the organization to get loyal customers and their preferred product which will help increase profitability and decrease the inventory size.

## 2 Organization Background

The shop from which I have collected the data is Agrawal Soap Works and Kirana Store, which is a Kirana shop based in Morena, Madhya Pradesh. The shop was launched by Mr. Amit Goyal seven years ago. The store is currently owned by Mr. Amit Goyal and managed by his son, Ayush Goyal. It started as Agrawal Soap Works, but now it has become Agrawal Soap Works and Kirana Store. It is one of the most preferred store by customers in the city. Initially, they made only soaps, but now they started selling Kirana and daily-use items in their store.

Ref:

1. <https://maps.app.goo.gl/JmnJWGHBQybZbV51A>

### **3 Problem Statement**

- 3.1 Find loyal customers: Owner does not identify who are the loyal customers means who are the regular customers and who comes rarely. I will use visualization tools and RFM score to get loyal customers.
- 3.2 Find the sales and profit from each category: Owner doesn't identify which item or category give him more profit and which one give him loss. I will use visualization tools such as histogram.
- 3.3 Find the most preferred product from each category: Which product will be sold more, for ex. He sells ten types of biscuits but doesn't know which one is preferred more by the customers. I will use an excel sheet to find the most frequently selling item from each category.

### **4 Background of the Problem**

#### **Major cause of problems: -**

Sometimes demand for some products rapidly grows and sometime there is a sell of a particular product from a category is higher which is confused with the whole category sell, which leads to uneven inventory.

#### **Internal problems: -**

Unthoughtful inventory management leads to unwanted abundance of less demanded products and scarcity of high selling products, which leads to two major factors, customer dissatisfaction and product wastage because when a customer comes to a shop to purchase any item and the shop doesn't have that particular item then the customer is most unlikely to come again to the shop.

#### **External problems: -**

There is a fraction of customers that are not coming back to buy products hence there is a need to identify the reason behind it.

## 5 Problem Solving Approach

### 1. Astute Inventory Control

The primary issue is improper inventory management, which results in an excess of less in-demand goods and a deficiency of highly sought-after goods. To resolve this:

#### 1.1 Project Demand Using Data

It is possible to forecast future demand for each product category and individual item by examining previous sales data and client demand patterns. This will enable us to adjust our inventory in response to demand spikes. Accurate prediction can be achieved by employing methods such as machine learning algorithms and regression models.

#### 1.2 Enhance Stock Levels

Determine the appropriate stock levels for each product based on the demand projections to reduce stockouts and overstocking. To ascertain the optimal inventory levels using plotting techniques.

#### 1.3 Monitor Stock Levels in Real Time

Use a perpetual inventory system to keep an eye on inventory levels in real time. This will enable us to locate and rectify any inventory imbalances fast. For accurate and current data, integrate this system with our point-of-sale (POS) data.

### 2. Fostering Client Allegiance

Concentrate on increasing client retention and cultivating a devoted customer base to address the problem of non-returning customers.

#### 2.1 Determine Which of Your Most Important Clients

To separate your consumer base and determine which ones are the most devoted, use RFM (Recency, Frequency, Monetary) analysis. This will enable you to better target your marketing and customer support initiatives in order to keep these important clients.

#### 2.2 Create a Program for Loyalty

Establish a loyalty program that pays loyal and valuable clients. This might take the form of rebates, special deals, or a point system. Make sure the program is user-friendly and offers customers real benefits.

#### 2.3 Improving the Experience for Customers

Personalized interactions, prompt problem solving, and first-rate customer service can all help to enhance the entire customer experience. Gather client feedback on a regular basis and apply it to future developments.

### 3. Making Decisions Based on Data

Use a data-driven approach to maximize your sales tactics and product offerings.

### 3.1 Examine Profitability and Sales by Category

Examine each product category's sales and profitability using visual aids such as histograms. This will enable you to determine which categories are the most lucrative and direct your efforts in that direction.

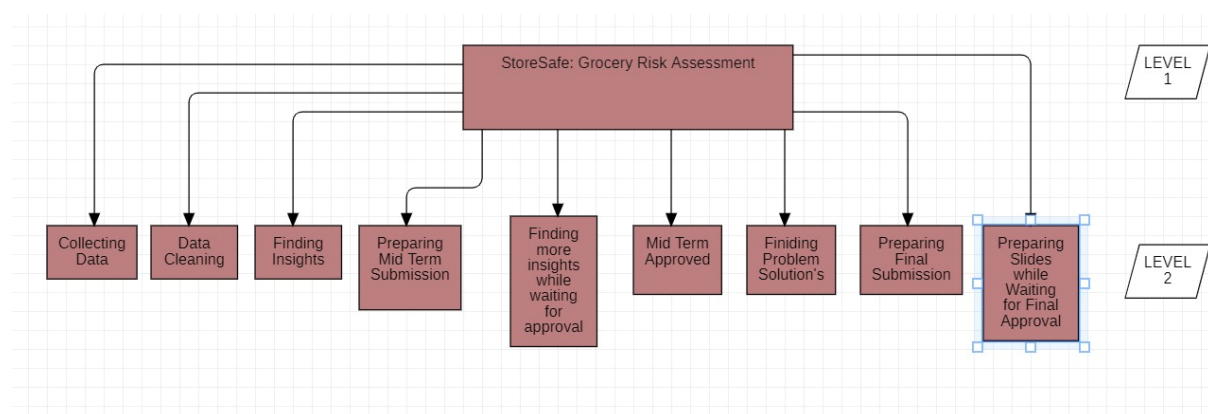
### 3.2 Determine Which Products Sell the Best

Keep a thorough record of every product's sale inside a given category. Utilize this information to identify the best-selling products and make sure there is enough stock on hand for these in-demand commodities.

By putting these strategies into practice, you may enhance inventory management, establish a devoted client base, solve the main issues your company is facing, and make data-driven decisions that will boost overall business performance.

## 6 Expected Timeline

### 6.1 Work Breakdown Structure:



## 6.2 Gantt chart

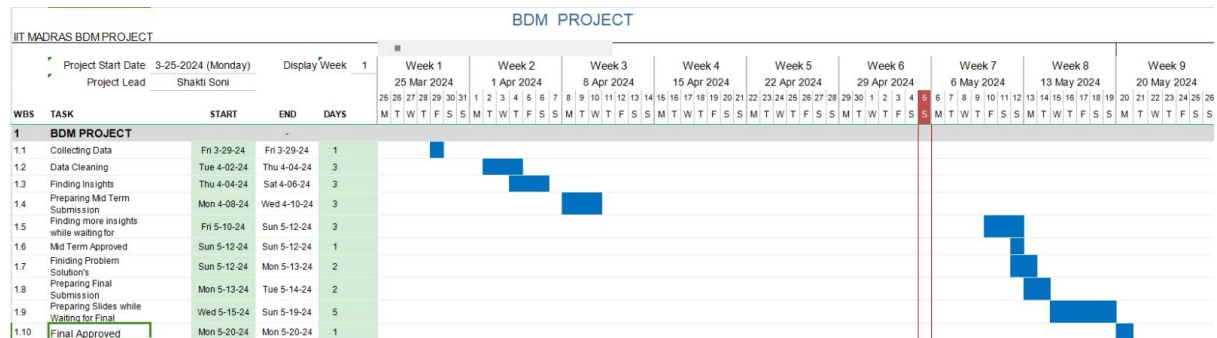


Figure 1 Expected timeline for completion of project.

## 7 Expected Outcome

- 7.1 **Improved Inventory Management:** This is expected to result in a more efficient inventory process, less surplus inventory of items that don't sell quickly, and fewer instances of high-demand product stockouts. Increased cash flow, reduced product waste, and greater operational efficiency are the outcomes of this improvement.
- 7.2 **Enhanced Customer Loyalty:** By identifying and fostering your most important customers, you should see an increase in customer loyalty and retention rates. Putting in place a customized loyalty program and concentrating on improving the general customer experience will probably result in more repeat business, more customer satisfaction, and favourable recommendations, which will build a devoted clientele.
- 7.3 **Data-Driven Decision Making:** You can anticipate making better decisions if you use data analysis to comprehend sales and profitability by category and identify top-selling products. You will be able to improve your marketing tactics, enhance your product offers, and ultimately spur business expansion and success with this data-driven approach.