BDM Capstone Project
Project Proposal

Data-driven solutions for weak customer footfall at Annapurna Mega Mart

Rajya Lakshmi Jampani

22f3002986

31st May 2023

Table of Contents

Executive Summary

Annapurna Mega Mart is a Kirana store located in Kukatpally, the commercial hub of north-western Hyderabad. Almost all the retailers in the area are able to take advantage of the prime location to boost their businesses. However, this store is struggling to attract any buyers. Although Kirana is an essential commodity, the number of customers that turn-up at Annapurna Mega Mart on any given day is not exceeding 20. A data driven approach best fits the case and is useful to understand the pitfalls and take corrective decisions.

As a part of this project, the data pertaining to the monthly sales and customer footfall will be collected and analyzed. General factors that attract customers to a retail outlet will be identified and checked for compliance. In an earlier visit to the store, it was identified that the storefront was not impressive as the containers put up for display are under-filled. So, the data related to Display Container Utilization will be collected and studied. The manufacturing and expiry dates of a sample of packaged products will also be collected to assess the quality of the stock available. Possible areas of improvement will be identified and the reports will be explained to the retailer.

Background of the organization

Annapurna Mega Mart is a wholesale and retail Kirana store located in Rajamma towers of Jaya Nagar Colony, Kukatpally, Hyderabad. Image of the facade is as below.

Mr. G. Narender is the sole owner of the store. He is into B2C Kirana business for over 35 years in different locations of Hyderabad. The current store was opened in 2016 in Satyavolu complex. However, in 2020, it was shifted to its adjacent building, Rajamma towers, due to non-financial reasons. The stock is procured from Begum bazar, which is 22km away from the store. The outlet has 2500 sq.ft. area. 2 full-time workers are employed for the purpose of maintaining the store, serving customers and cleaning the stock. Although necessary equipment for billing is in place, the store does not provide purchase bills to customers as the owner cannot afford employing a billing operator. The turn-over of the business is decreasing year by year.

Problem Statement

After shifting to a new building in 2020, Annapurna Mega Mart is facing weak footfall and an exponential drop in annual sales. This project aims at assessing reasons for the same. The objectives of this project are -

- To collect data related to
    - Monthly sales and customer footfall
    - volume of stock displayed
    - quality of the stock available
- To analyze the data and identify possible solutions
- To provide insights of the analysis to the business

Background of the Problem

With an average yearly profit margin of 15-20%, Annapurna Mega Mart had been a successful B2C Kirana store till 2019. Following the store's shift to an adjacent building in 2020, it has been failing to persuade enough number of customers to step in. The store's revenue was 2.03 crores for 2020. It started recording a steep fall to 1.24 crores in 2021 and 77 lakhs in 2022.

From mid-2020 to mid-2021, during COVID-19 pandemic and lockdown, since most consumers preferred online shopping, the drop in sales was expected. However, even after the markets recovered from the pandemic, this business could not record any improvement in sales. The store had to suspend certain facilities like maintaining digital inventory, providing computerized bills to customers, maintaining CC cameras etc. due to lack of funds.

As Kirana is a daily essential commodity, it is expected to get a greater number of consumers than any other business nearby. After observing that the stores in the neighborhood are serving hundreds of customers a day, it is suspected that there could be some other reasons behind this problem. Identifying potential problems using necessary data analysis and arriving at feasible solutions to address them are the key objectives of this project.

Problem solving approach

To identify possible reasons behind weak footfall, major factors that attract consumers to any retail outlet will be identified and listed. The compliance of the store to the list will be noted.

Data Collection:

The monthly revenue data for past 3 years, which is available at the retailer in a notebook, will be collected for analysis of sales trend. Customer footfall data (daily number of customers purchasing something from the store, daily revenue, customers leaving empty handed and items they asked for) for a period of 1 month will be collected and analyzed to observe any underlying patterns.

On visiting the store, it was observed that many of the jars put for display are almost empty creating an impression of no stock. Hence, Display Container Utilization will be analyzed from the data related to total capacity and utilized capacity of each container on display.

When the details of some random packaged products are checked to study the Quality of Stock, few products were observed to have crossed their expiry dates. So, a good sample of packaged products will be chosen. The manufacturing date and expiry date of the items in sample will be collected and analyzed to identify how fresh the stock is and how soon the stock will expire.

Analysis methods and tools:

The data collected will be loaded into MS Excel as separate sheets. Simple line chart will be constructed from overall sales data. Monthly revenue will be plotted onto a line chart with one line per year. Customer footfall data will be grouped on weekday basis and will be plotted to identify patterns.

The Display Container Utilization data will have total vs utilized capacity of each jar. %Utilization will then be computed. A pivot table with four %Utilization classes (0-25%, 26-50%, 50-75% and 75-100%) and corresponding number of jars will be created. A bar of pie chart will be plotted where pie has % of empty and utilized jars and bar has the %Utilization. This helps in identifying the fraction of under-utilized jars and organizing stock display better.

“Months left to expire” data of the products will be collected and put into 4 classes - Expired, 0-6 months left, 6-12 months left and >1 year left. Under each class, the category of stock (like chips, oils, kitchen supplies etc.) occupying top fraction will be identified and represented in a pie of pie chart. This helps figuring out what categories of goods to stock up and what categories to sell soon to avoid loss due to expiry.

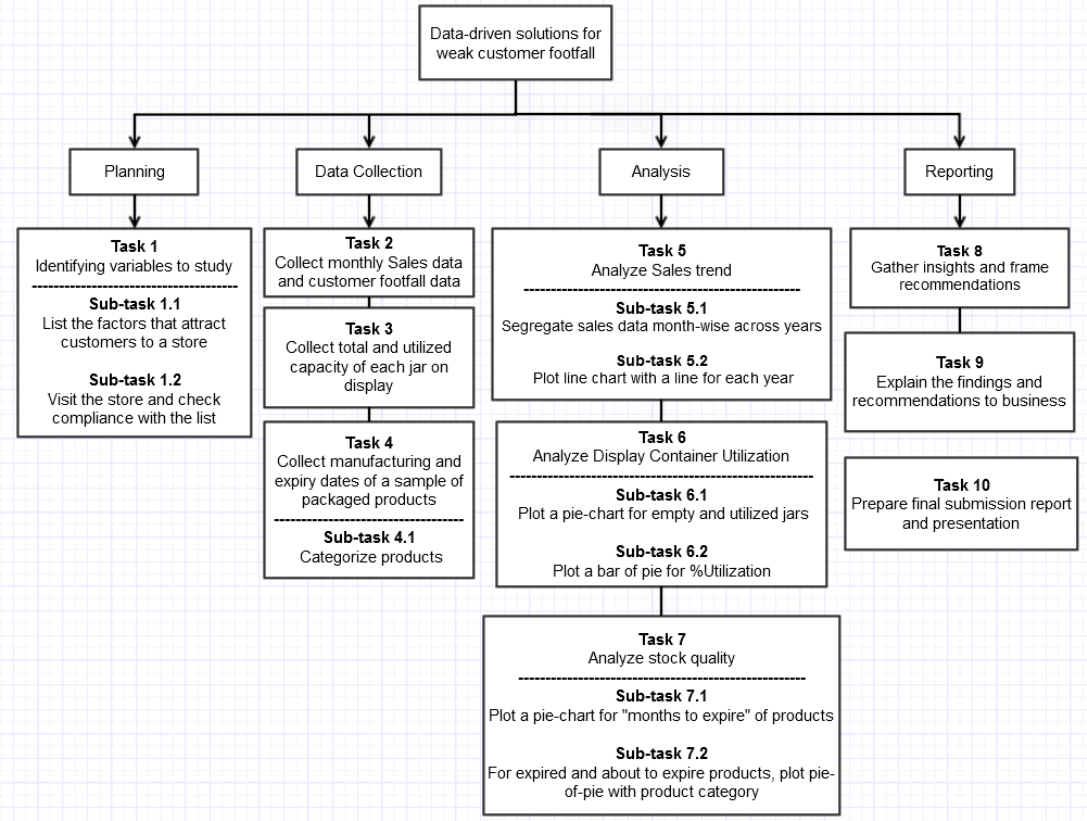
Expected timeline

The project can be split into four stages namely Planning, Data Collection, Analysis and Reporting. Identifying the variables to study will be the task in Planning stage. Data collection and analysis are the major stages. Collecting sales and footfall data, Display Container Utilization data

and Stock quality data are the tasks under data collection. Analysis stage includes cleaning and analyzing the data to get insights. Under the final stage, Reporting, the observations and recommendation will be noted and shared with business. Also, final submission report along with presentation will be prepared.

All these tasks under each category along with their Sub-tasks (if any identified) are listed below.

Work Breakdown Structure:



It is expected that the project spans a period of two months i.e., from Week 1 of June 2023 to Week 1 August 2023. Planning stage occupies week 1 and 2 of June. Data collection and analysis stages can be overlapped to make best use of time. They together require a major portion of the time and hence 1 month (Week 3 of June to Week 3 of July) can be assigned for both. Gathering insights and result discussion with business would be completed by Week 4 of July. The last week of the plan i.e., week 1 of August can be utilized for report preparation.

A detailed Gantt chart with tasks and expected timelines is inserted below.

Gantt Chart:

Expected outcome

As seen from the display counter of the store, it is expected that around one-quarter of jars would be empty. It is also expected that under-utilized containers correspond to more than 50% of all the containers. Also, around 50% of the stock is expected to be either expired or about to expire in another 0-6 months.

The customer footfall data is not expected to contribute much to the findings. The number of customers returning without any purchase is expected to be low, since most of the customers arriving at the store are regular/old customers. The numbers may not record huge variations and may not follow any specific trends.

With these inputs, we may arrive at strong backing to the suspicion that a weak store-front management and poor quality of stock being sold are the major areas affecting customer footfall. With exact figures in hand, necessary recommendations will be shared with the business. Implementing the recommendations in terms of improvising the store-front organization and investing in upgrading the stock quality is expected to increase the number of customers stepping in.