

Mid-Term Submission for Business Data Management

Submitted by

Name : Nikhil Sai Kasireddy

Roll Number : 21f3002651



TABLE OF CONTENTS

1.Executive Summary	3
2. Proof of originality of the data	4
3. Meta Data:	6
4. Descriptive Statistics	7
4. Analysis Method	9
5. Results	10

Executive Summary

As mentioned in the proposal, Premium Supermarket, a small supermarket located in Sai anurag colony, Hyderabad is facing significant challenges in terms of profitability due to high competition in the locality from a close-established competitor nearby and high pressure from easy online delivery services by JioMart and BigBasket who deliver the goods to the door-step. Being in expansion phase, the supermart has not fully digitised their operations, there is no scanner yet for billing, they are only using a biller machine to record sales, which can lead to gaps in understanding the exact sales of all SKU's.

This project is aligned to address these business challenges faced by the supermart. Our primary goal is to understand the sales and inventory data and use data-analysis to solve these challenges.

To achieve this, the mid-term report focuses on several key objectives. First, it aims to identify which SKUs contribute the most to net profit, ensuring these high-performing products are prioritised for long-term sales.. Analysis also aims to show products with the highest margin of profit, thereby helping the business in optimizing its stock on the basis of profitability. By applying the Pareto Principle, we seek to pinpoint the top 20% of products that drive 80% of revenue, allowing for strategic stocking of high-impact items. Finally, the analysis will examine revenue and cost trends, providing insights into pricing stability and potential cost-saving opportunities in the market. Through these targeted insights, the project aims to equip Premium Supermart with actionable strategies for improving profitability and operational efficiency amidst its competitive environment.

2. Proof of originality of the data



-> Photo at the supermart



-> With the owner, Abhinav Das



-> Sample bill generated by the biller

Pictures

<https://drive.google.com/drive/folders/1YFgHB5niomoWZV1iPTvQ6kGkbrZFTi61?usp=sharing>

Video with the owner :

https://drive.google.com/file/d/1m_VKDpIEozze420NJwh0ffNxfEy7-mfj/view?usp=sharing

Video Transcript :

Video was recorded for only 2 minutes as the owner was hesitant and it was in telugu, in the video he basically talked about the business and the problems of the business, which were mentioned in the executive background

Letter :

<https://drive.google.com/file/d/16lj82366JJJoUMX-5wPoG6fd307x7IUJm/view?usp=sharing>

Sales dataset given to me from the biller(From March - June 2024) :

<https://docs.google.com/spreadsheets/d/1iHqwiW31k1-4fzCRUNrc5Z-fstzTjqWrWYx-OyLspil/edit?usp=sharing>

3. Meta Data:

The sales and inventory data was collected from 1st March 2024 to 31st June 2024 for a period of 4 months.

It was obtained in the form of excel sheets . One was for daily sales, one was for profit margin of each category and the last one was the inventory data.

Meta data of the final dataset after cleaning is as follows :

Column	Type	Description
Date	Date	Date of each transaction
Category	Text	Category of each item.
Item	Text	Name of each item/SKU
Quantity sold	Numeric	No of units of items sold
Selling price	Numeric	Selling price of the item
Total sales	Numeric	Total revenue of a transaction

Snapshots of the data:

1	Date	Category	Item	Quantity Sold	Sale Price	Total Sales
2	3/1/2024	Groceries	Toor Dal (Kandipappu)	1	160	160
3	3/1/2024	Groceries	Moong Dal (Pesara pappu)	1	135	135
4	3/1/2024	Groceries	Chana Dal (Sanaga pappu)	1	100	100
5	3/1/2024	Groceries	Peanuts (Palli)	1	165	165
6	3/1/2024	Groceries	Urad Dal (Minapappu)	2	160	320
7	3/1/2024	Groceries	Masoor Dal	1	80	80
8	3/1/2024	Groceries	Idly Rawa (Sri Lalitha)	6	50	300
9	3/1/2024	Groceries	Wheat Flour (Aashirvad)	5	60	300
10	3/1/2024	Groceries	Rice Rawa	2	60	120
11	3/1/2024	Groceries	Bajra flour	3	50	150
12	3/1/2024	Oils	Freedom Sunflower Oil	1	140	140
13	3/1/2024	Oils	Gold Drop Sunflower Oil	1	135	135

4. Descriptive Statistics

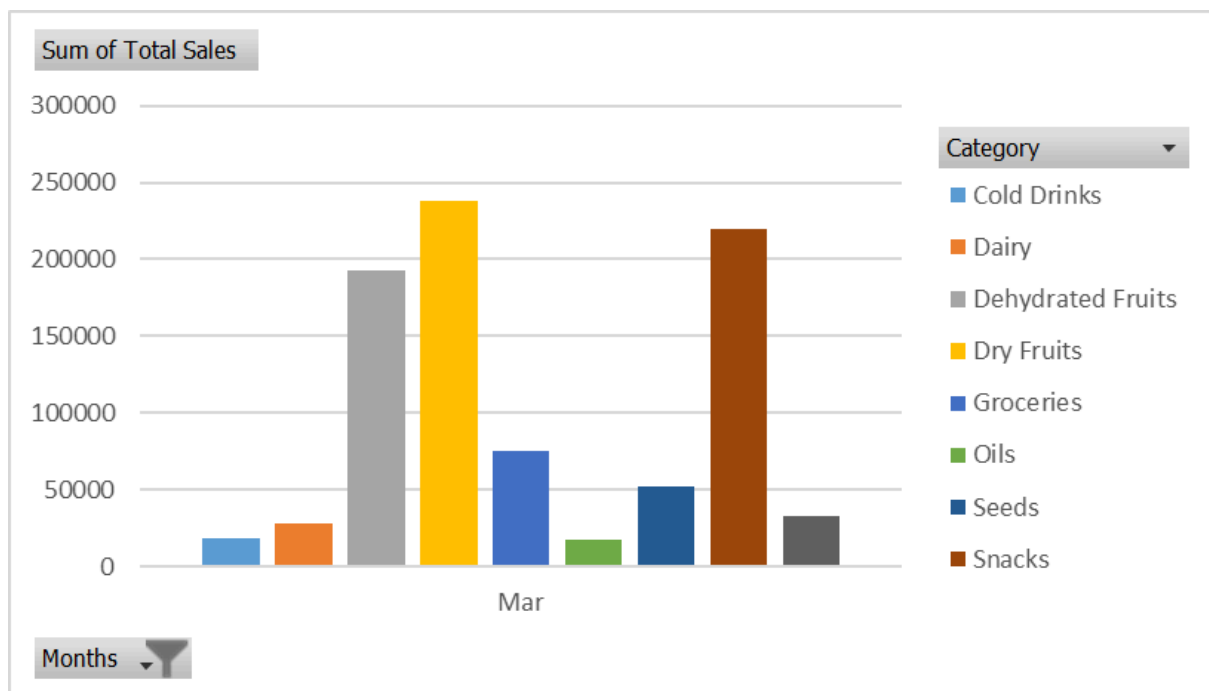
1.



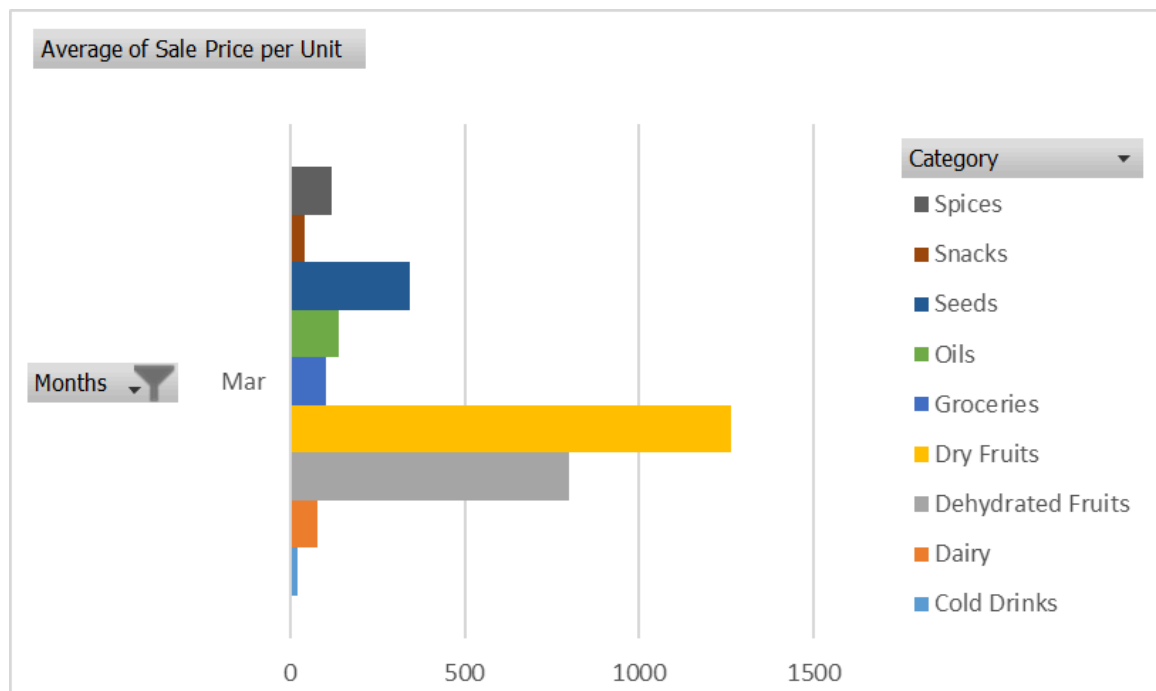
Y-axis : Total Revenue

X-axis : Date (Month)

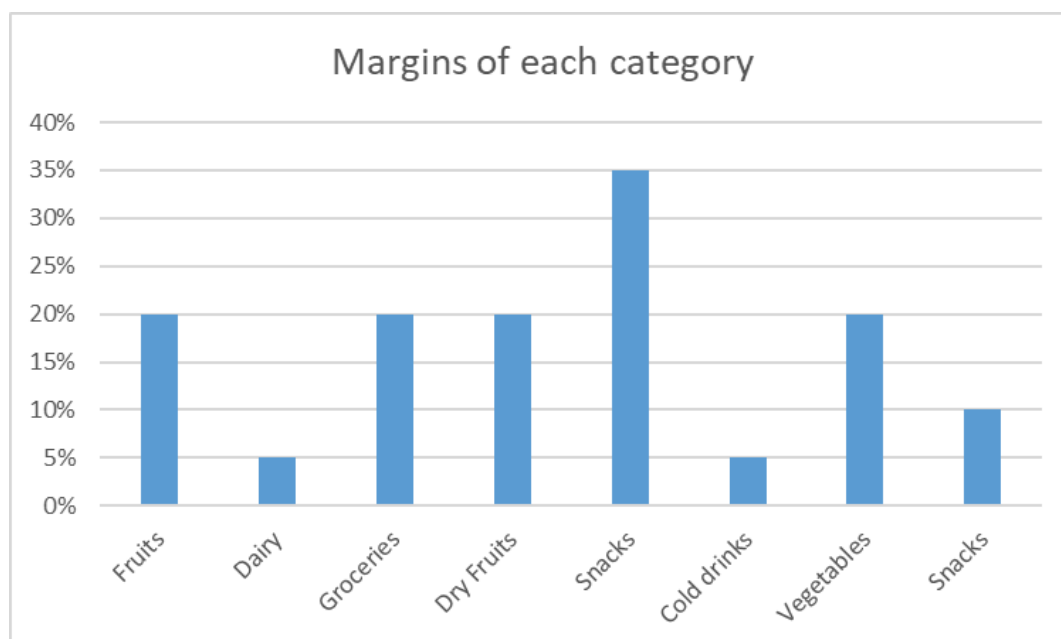
2. Total Revenue of Each category in a month:



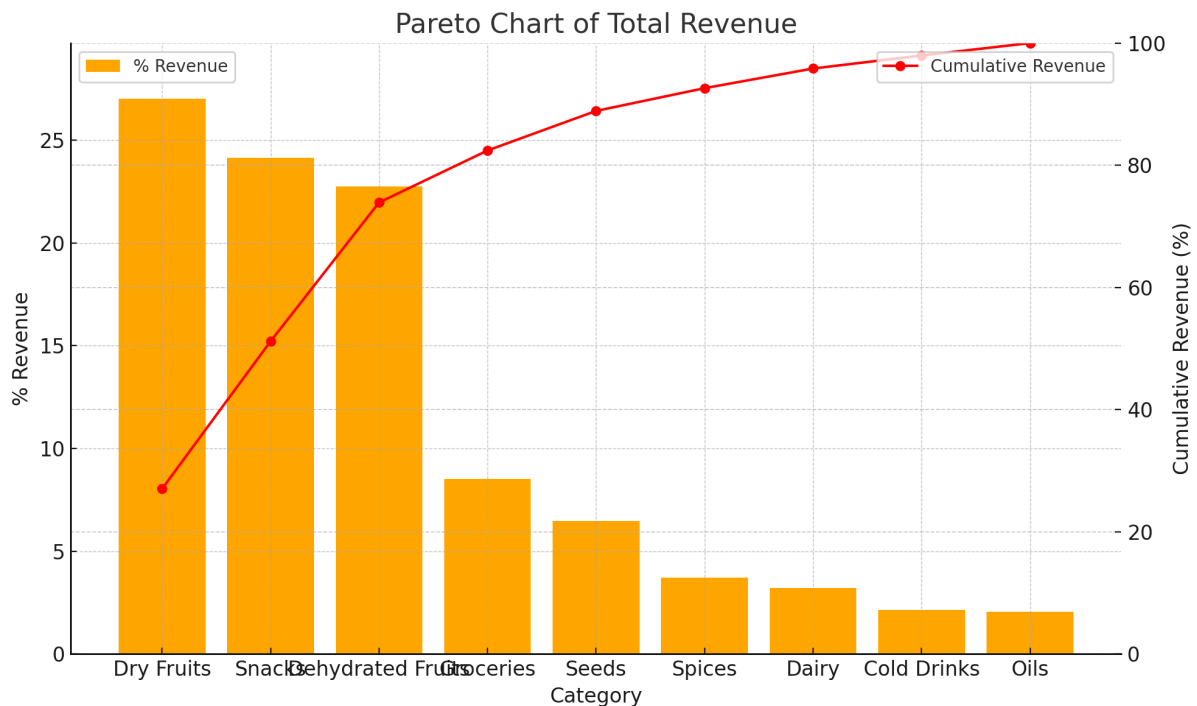
3. Avg cost price of each SKU :



3. Margins of each category:



4. Pareto Chart of Total Revenue



4. Analysis Method

The analysis was conducted on data spanning from March 2024 to June 2024, detailing various product categories and their respective sales figures. The first step involved data collection and preparation, which was carried out using Excel. This process ensured that the data was free of inconsistencies, missing values, and outliers, all of which are critical to maintain data accuracy and reliability.

After the data has been formulated, a deep analysis was done. Descriptive statistics were calculated in this paper as it would give an overall view about the total sales made within the store, at different categories and thus be able to understand how much each category contributes in that respect. This includes the percentage share that each category has while making revenues and the cumulative percentage of total revenue, thus putting the revenue distribution to considerable use.

To depict such results, a Pareto chart was used; it is a combination of bar and line graphs. It consists of bar graphs of percentages of revenue accrued from each category in descending order as well as a line graph showing the cumulative percentage of revenue. The dual visualisation pretty well spots the revenue drivers and identifies categories that significantly impacted total revenue.

5. Results

Pareto Analysis by Top Revenue and Profit Contributors

Pareto analysis shows that Dry Fruits, Snacks, and Dehydrated Fruits category commands the largest share of revenues at a level above 70% of the total revenues. This corresponds to the Pareto Principle whereby most sales are produced by just a few categories; hence those that bring immense impacts should be accorded massive attention in matters of inventory and marketing strategy.

Moreover, the high revenue categories present steady sales trends during the four months, describing steadiness within the customer's demand. Such steadiness leads to more predictability about inventories and sells and reduces the dangers of a stockout for key items.

High Margin Categories to Enhance Margins

The profits margin analysis has found Snacks as a top-margin category, thus a very crucial area to maximise profit per unit sold. Snacks being a high-margin category is perceived as a value-added contributor to the overall profitability profit line of business, even if it is not the company's best revenue accumulator.

Categories like Fruits, Groceries, Dry Fruits, and Vegetables have moderate margins. These categories will help in terms of total sales and profitability and, therefore, are important for balancing revenue and profit generation. They form the core part of the inventory serving customers with their desired requirement and also support financial stability.

Low Margin of High Demand Categories:

Revenue and Margin Alignment:

Dry Fruits and Groceries both are high revenue products with a good margin. So, they become focus areas of stock optimization. If such items are focused on, the supermart will be able to balance volume of sales with profitability.

High revenues and healthy profit margins in these categories form a sound basis for revenue generation as well as profit maximisation. These categories should therefore call for special attention in restocking, promotion, and pricing strategies.

Cumulative Strategic Insights from Revenue and Margin Distribution

Over the four months, sales across key product lines have been steady. The steady sales suggest smooth demand patterns through which one can obtain better estimates and management of stock.