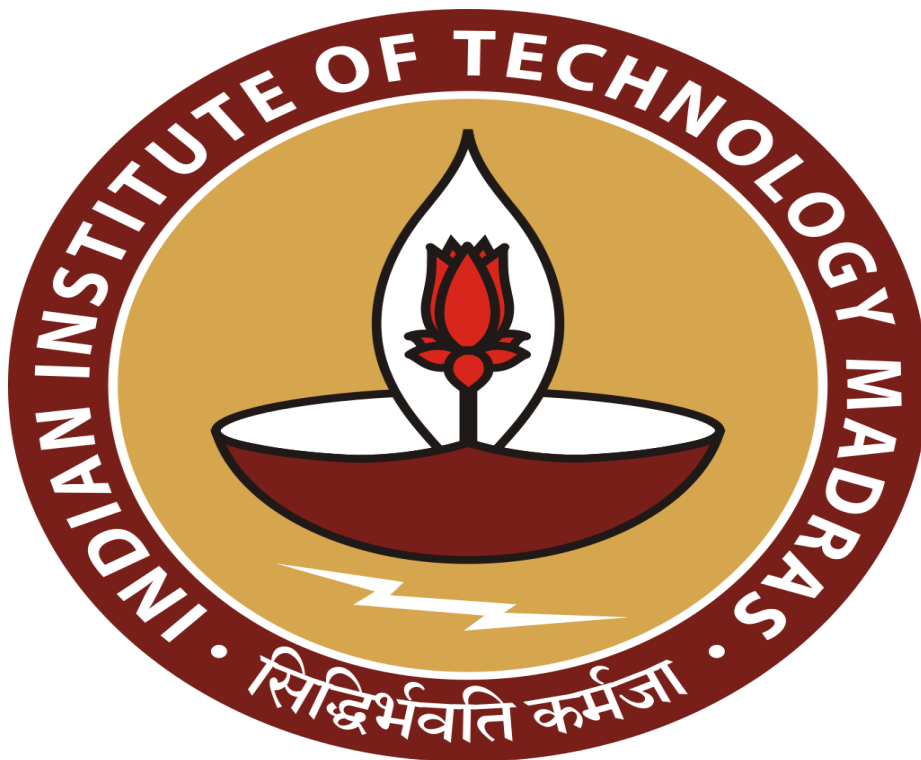


**CAPSTONE PROJECT END – TERM SUBMISSION**

**INVENTOINSIGHT : KIRANA STORE ANALYSIS & OPTIMIZATION**

**NAME : MIRYALA RAAM SAI BHARADWAJ**

**ROLL NO : 21F2001492**



IITM ONLINE DEGREE PROGRAM,  
INDIAN INSTITUTE OF TECHNOLOGY, MADRAS  
TAMIL NADU, INDIA - 600036

## **1.Executive Summary And Title :**

Shiva Sai Kirana Store is a medium sized Kirana store. The store was initiated by Mr. Bikkumalla Nagaraju in early 2018. The store is presently encountering challenges in terms of profit and inventory management which is having an indirect impact on the stores net profit and sales. The purpose of the proposed capstone project is to understand the complexities of managing or controlling inventory/good flow, enhance the sales and formulate marketing strategies that increase net profit and sales for their store.

So, the primary goal of our capstone project is to increase net profit , optimize and check inventory to determine the optimum purchase time and manage goods flow. The project will consist of an in-depth look at the sales data and the fluctuation of purchase price over the course of the month. Identifying where the current strategy has gaps and how we can improve on it will be a crucial part of this project. The report will also consist of an in-depth look at the sales data showing trends and patterns that will allow us to see what SKUs are the best and worst performing. This will allow us to form marketing strategies to improve net sales leading to increase in net profit.

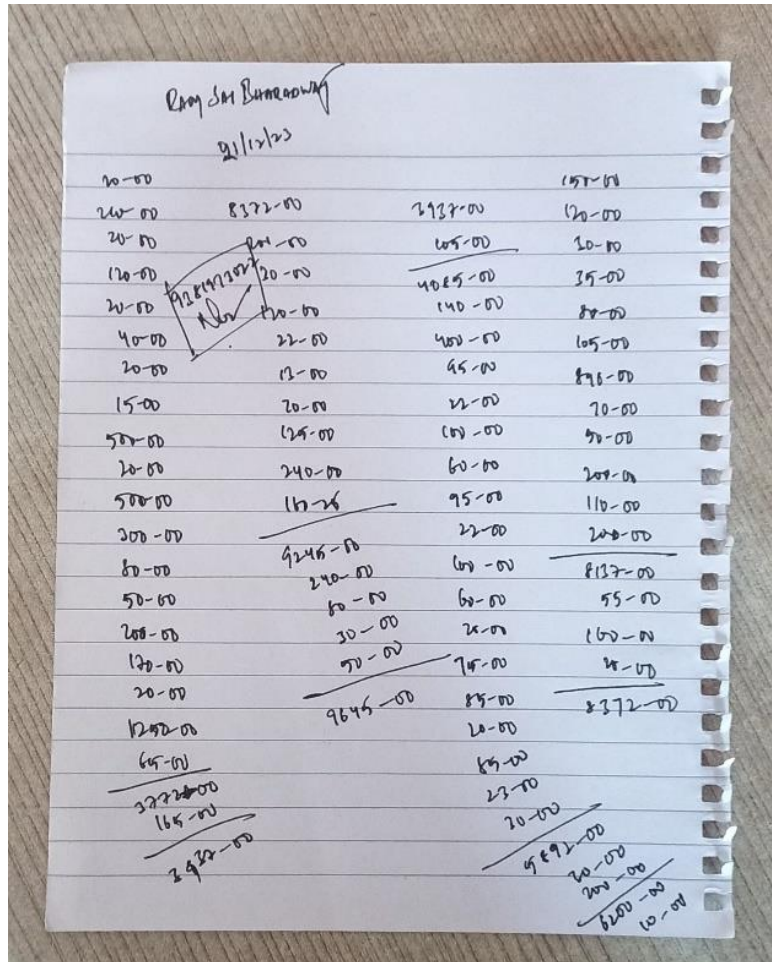
After examining everything the project report will primarily focus on suggestions to address the issues mentioned earlier.

To effectively study the sales data and make informed business choices I plan to use Excel features, like pivot tables, bar graphs and line graphs among others. These tools allow for representations of the sales data making it simpler, to spot trends, patterns and important insights. By examining both performing and underperforming products with these Excel features we can create recommendations, marketing strategies and data driven decisions to enhance revenue generation.

## **2.Detailed Explanation of Analysis Process/Method :**

### **2.1 : Data Analysis For Sales And Expenditure**

As Mentioned above MS Excel Is the main tool which will be used in the analysis, firstly sales data Is collected in an unstructured format along with the prices of each product from Shiva Sai Kirana Store over the period of 31 days.



Shops way of storing information

This Raw data is then entered into excel and basic pre-processing tasks such as imputing, typing errors, sorting etc., are done.

- The pre-processed sales data have a total of 21 columns where 10 columns represent each SKUs sales quality along with the date (1 column) and 10 more represent each SKUs price on given day.

DATE	SALES									
	RICE	ATTA	TOOR DAL	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE	MILK & DAIRY	DRY FRUITS
21-12-2023	140	110	24	16	40	70	36	20	56	10
22-12-2023	90	80	28	14	44	48	30	10	50	6
23-12-2023	70	50	20	20	50	40	40	8	58	4
24-12-2023	60	40	22	16	44	42	40	10	64	6
25-12-2023	66	36	18	14	40	48	38	11	75	10
26-12-2023	20	24	8	8	4	10	8	4	60	0
27-12-2023	40	20	8	6	8	8	6	2	60	2
28-12-2023	40	24	8	6	6	10	8	4	59	4
29-12-2023	60	30	6	4	4	6	6	4	80	4
30-12-2023	56	32	8	6	4	8	8	0	55	0
31-12-2023	48	24	6	8	6	8	6	2	56	0

					SELLING PRICE					
DATE	RICE	ATTA	TOOR DAL	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE	MILK & DAIRY	DRY FRUITS
21-12-2023	₹ 45	₹ 41	₹ 102	₹ 110	₹ 112	₹ 45	₹165	₹ 416	₹ 60	₹ 855
22-12-2023	₹ 45	₹ 41	₹ 102	₹ 110	₹ 112	₹ 45	₹165	₹ 420	₹ 60	₹ 855
23-12-2023	₹ 45	₹ 41	₹ 102	₹ 110	₹ 112	₹ 45	₹165	₹ 420	₹ 60	₹ 855
24-12-2023	₹ 44	₹ 41	₹ 102	₹ 110	₹ 112	₹ 43	₹165	₹ 435	₹ 60	₹ 865
25-12-2023	₹ 44	₹ 41	₹ 102	₹ 110	₹ 112	₹ 43	₹165	₹ 435	₹ 60	₹ 865
26-12-2023	₹ 44	₹ 41	₹ 102	₹ 110	₹ 112	₹ 43	₹165	₹ 435	₹ 60	₹ 865
27-12-2023	₹ 46	₹ 41	₹ 104	₹ 110	₹ 112	₹ 43	₹162	₹ 435	₹ 60	₹ 865
28-12-2023	₹ 44	₹ 42	₹ 104	₹ 110	₹ 112	₹ 43	₹162	₹ 435	₹ 60	₹ 865
29-12-2023	₹ 44	₹ 42	₹ 104	₹ 110	₹ 112	₹ 43	₹162	₹ 435	₹ 60	₹ 865
30-12-2023	₹ 44	₹ 42	₹ 104	₹ 110	₹ 112	₹ 43	₹162	₹ 435	₹ 60	₹ 865
31-12-2023	₹ 42	₹ 42	₹ 104	₹ 110	₹ 108	₹ 43	₹158	₹ 435	₹ 60	₹ 865
01-01-2024	₹ 42	₹ 42	₹ 104	₹ 110	₹ 108	₹ 43	₹158	₹ 435	₹ 60	₹ 865

- Using sales and selling price revenue for the day, average sales, selling price and total revenue can be calculated by formula :

$$Revenue = Selling Price * Sales$$

$$Total Revenue = \sum_{i=0} R_i$$

$$Where R_i = Revenue made at i^{th} day$$

- Similarly purchase data has been collected for every SKUs which consists of purchase quantity and purchase price, using which expenditure is calculated on each SKU.

				PURCHASE						
DATE	RICE	ATTA	TOOR DAL	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE	MILK & DAIRY	DRY FRUITS
21-12-2023	0	0	0	0	0	0	0	0	60	44
22-12-2023	0	200	0	50	0	0	0	0	56	0
23-12-2023	0	0	0	50	0	50	0	60	20	60
24-12-2023	0	0	0	0	50	0	60	0	64	0
25-12-2023	0	0	0	0	0	0	0	0	80	0
26-12-2023	0	200	50	0	50	50	0	0	70	0
27-12-2023	0	0	0	50	0	0	0	15	60	0
28-12-2023	0	0	0	0	0	0	0	0	60	0
29-12-2023	0	0	0	0	0	0	20	0	80	0
30-12-2023	0	0	0	0	0	0	0	0	60	0
31-12-2023	0	0	0	0	0	0	0	0	60	0
01-01-2024	0	0	0	0	0	0	0	0	60	0

				PURCHASE PRICE						
DATE	RICE	ATTA	TOOR DAL	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE	MILK & DAIRY	DRY FRUITS
21-12-2023	₹41	₹38	₹94	₹99	₹103	₹42	₹155	₹374	₹57	₹701
22-12-2023	₹41	₹38	₹94	₹99	₹103	₹42	₹155	₹378	₹57	₹701
23-12-2023	₹41	₹38	₹94	₹99	₹103	₹42	₹155	₹378	₹57	₹701
24-12-2023	₹40	₹38	₹94	₹99	₹103	₹40	₹155	₹392	₹57	₹709
25-12-2023	₹40	₹38	₹94	₹99	₹103	₹40	₹155	₹392	₹57	₹709
26-12-2023	₹40	₹38	₹94	₹99	₹103	₹40	₹155	₹392	₹57	₹709
27-12-2023	₹41	₹38	₹96	₹99	₹103	₹40	₹152	₹392	₹57	₹709
28-12-2023	₹40	₹39	₹96	₹99	₹103	₹40	₹152	₹392	₹57	₹709
29-12-2023	₹40	₹39	₹96	₹99	₹103	₹40	₹152	₹392	₹57	₹709
30-12-2023	₹40	₹39	₹96	₹99	₹103	₹40	₹152	₹392	₹57	₹709
31-12-2023	₹38	₹39	₹96	₹99	₹99	₹40	₹149	₹392	₹57	₹709
01-01-2024	₹38	₹39	₹96	₹99	₹99	₹40	₹149	₹392	₹57	₹709

- Along with expenditure Total Expenditure for the day , Average expenditure per SKU as well as Total expenditure is calculated for 31 days using Formulas :

$$Expenditure = Purchase Quantity * Purchase Price$$

$$Total Expenditure = \sum_{i=0} E_i$$

Where  $E_i$  = Expenditure at  $i^{th}$  day

## **2.2 : Increase the Overall Profit of the Business**

- During my first discussion with the business owner we discovered that due to high competition and entry of new shops and online grocery shops profits were declining, were not steady and it's becoming difficult for them to survive.
- Hence first step was to calculate the profit/loss for each day, each SKU to determine the authenticity of the owner, for that I used sales and purchase data to calculate profit/loss , profit % for each SKU day using formula :

$$Profit = Sales - Purchase$$

$$Profit_{SKU} \% = (Profit_{SKU} / T.Profit)\%$$

PRODUCT	PROFIT/LOSS	REVENUE(SALES)	% OF TOTAL PROFIT	% OF TOTAL REVENUE
RICE	₹ 20,144	₹ 1,40,152	25.79%	19%
ATTA	₹ 5,106	₹ 52,482	6.54%	7%
TOOR DAL	₹ 4,965	₹ 46,116	6.36%	6%
MOONG DAL	₹ 4,985	₹ 36,786	6.38%	5%
URAD DAL	₹ 6,313	₹ 59,226	8.08%	8%
SUGAR	₹ 1,890	₹ 32,046	2.42%	4%
COOKING OIL	₹ 5,229	₹ 83,994	6.70%	11%
GHEE	₹ 9,719	₹ 82,965	12.44%	11%
MILK & DAIRY	₹ 2,527	₹ 1,16,603	3.24%	16%
DRY FRUITS	₹ 17,221	₹ 85,970	22.05%	12%
	₹ 78,098	₹ 7,36,340		

DATE	TOTAL SALES	TOTAL EXPENDITURE	PROFIT / LOSS
21-12-2023	48818	34268.4	14549.6
22-12-2023	36094	15686	20408
23-12-2023	33700	30130	3570
24-12-2023	34998	18106	16892
25-12-2023	38505	4560	33945
26-12-2023	11098	23399	-12301
27-12-2023	12564	14242.5	-1678.5
28-12-2023	15398	3420	11978
29-12-2023	16642	7605.6	9036.4
30-12-2023	10688	3420	7268
31-12-2023	10698	3420	7278
01-01-2024	11324	3420	7904

- Considering the fact that there was some inventory for every SKU at the start and end of data collection purchase of each SKU was calculated using formula :

$$Purchase = T . Purchase + I. Inventory - E. Inventory$$

Where  $I.Inventory$  = Initial Inventory,

$E.Inventory$  = End Inventory,

$T.Purchase$  = Total Purchase

=V34+V36-V37					
T	U	V	W	X	Y
		₹96,840	₹43,755	₹37,315	₹30,105
₹57	₹717				
	INITIAL INVENTORY	₹ 36,450	₹ 7,544	₹ 7,507	₹ 4,950
	END INVENTORY	₹ 13,282	₹ 3,923	₹ 3,671	₹ 3,254
	FINAL EXPENDITURE	₹1,20,008	₹47,376	₹41,151	₹31,801

- Lastly cumulative profit was calculated for pareto chart

PRODUCT	% OF TOTAL PROFIT	CUMULATIVE PROFIT %
RICE	25.79%	25.79%
DRY FRUITS	22.05%	47.84%
GHEE	12.44%	60.29%
URAD DAL	8.08%	68.37%
COOKING OIL	6.70%	75.07%
ATTA	6.54%	81.60%
MOONG DAL	6.38%	87.99%
TOOR DAL	6.36%	94.34%
MILK & DAIRY	3.24%	97.58%
SUGAR	2.42%	100.00%

### 2.3 : Optimizing Inventory

- Upon discussion with the owner we got to know that inventory management was the main concern for the owner as according to owner stock was piled up at the end of the month and also profit was less hence buying new stock was getting difficult due to inflation
- Inventory data is collected for every SKU at the first day of data collection (i.e., 1/4/23). Further inventory data is calculated using sales, purchase and initial inventory using formula :

$$Inventory_i = Initial\ Inventory_i - Sales_i + Purchase_i$$

B4	=B3-SALES!B3+PURCHASE!B3				
	A	B	C	D	E
1					
2	DATE	RICE	ATTA	TOOR DAL	MOONG DAL
3	21-12-2023	900	200	80	50
4	22-12-2023	760	90	56	34
5	23-12-2023	670	210	28	70
6	24-12-2023	600	160	58	50
7	25-12-2023	540	120	36	34

- Using inventory data average inventory, total inventory is calculated for every day as well as every SKU

$$Total\ Inventory = \sum_{i=0} I_i$$

Where  $I_i$  = Inventory at  $i^{th}$  Day

TOTAL DAILY INVENTORY	AVERAGE DAILY TOTAL INVENTORY	DATE
1836	183.6	21-12-2023
1414	141.4	22-12-2023
1314	131.4	23-12-2023
1192	119.2	24-12-2023
1022	102.2	25-12-2023
741	74.1	26-12-2023
1005	100.5	27-12-2023
970	97	28-12-2023
860	86	29-12-2023
756	75.6	30-12-2023
634	63.4	31-12-2023
526	52.6	01-01-2024
412	41.2	02-01-2024
300	30	03-01-2024
868	86.8	04-01-2024
770	77	05-01-2024

## 2.4 : Fixed Cost Analysis

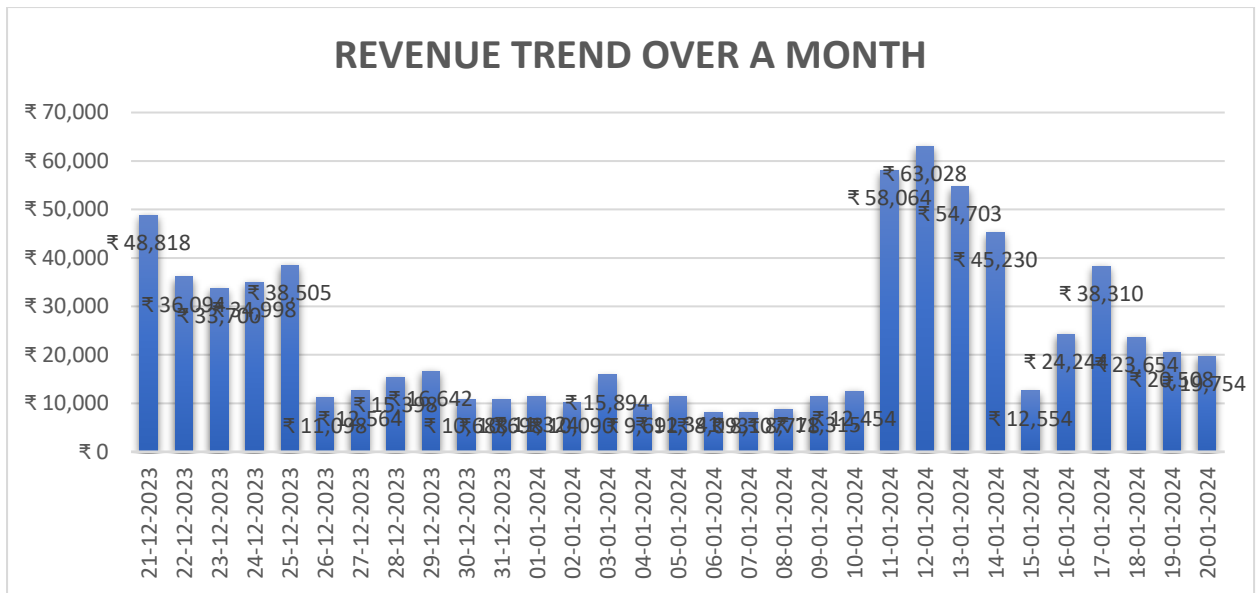
- For every cost analysis cost transport, rent, furniture, electricity, accessories, loan were calculated for a period of 31 days(according to the data) along the depreciation rate (approx as per data)
- According to data Total fixed cost was calculated

D12				=SUM(D3:D11)
	A	B	C	D
1	<b>FIXED COST ANALYSIS</b>			
2		<b>COST</b>	<b>RATE OF DEPRICIATION</b>	<b>DEPRICIATION</b>
3	<b>FURNITURE</b>	₹ 2,00,000	1%	₹ 2,000
4	<b>FREEZER</b>	₹ 40,000	2%	₹ 800
5	<b>CONTAINERS</b>	₹ 20,000	1%	₹ 200
6	<b>DELIVERY VEHICLES</b>	₹ 1,30,000	2%	₹ 2,600
7	<b>PETROL/TRANSPORT</b>	₹ 3,000	100%	₹ 3,000
8	<b>RENT</b>	₹ 15,000	100%	₹ 15,000
9	<b>ELECTRICITY</b>	₹ 1,000	100%	₹ 1,000
10	<b>CARRY BAGS</b>	₹ 2,000	100%	₹ 2,000
11	<b>EMI</b>	₹ 10,000	100%	₹ 10,000
12	<b>TOTAL FIXED COST</b>	<b>₹ 4,21,000</b>	<b>FIXED COST</b>	<b>₹ 36,600</b>

## 3.Results and Findings:

### 3.1 : Volume Analysis (Sales, Purchase)

The below graph is generated for the Revenue (Sales) generated for the month.

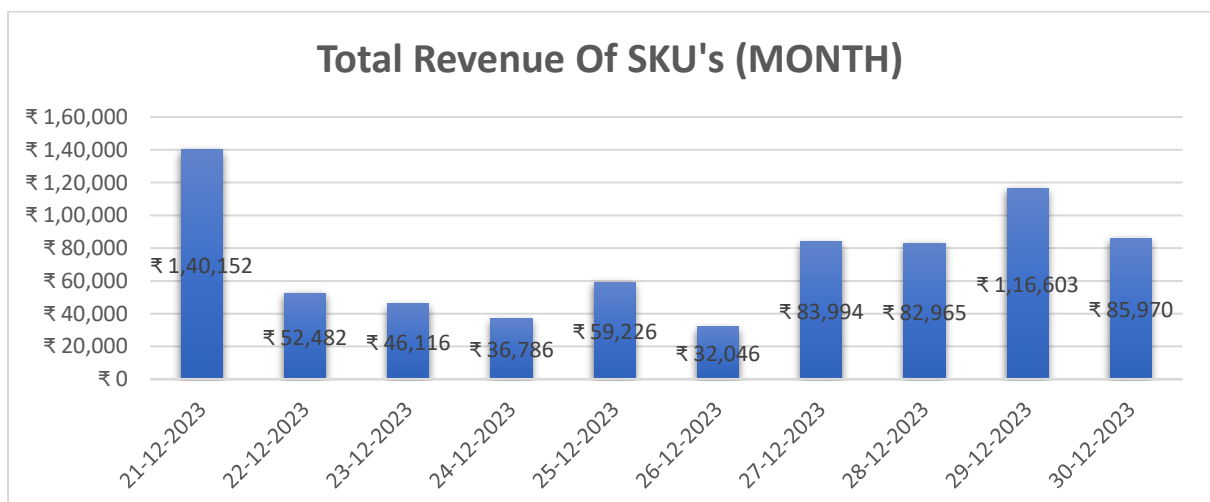


- The above graph shows the start and end dates for the month are highest revenue generating days with the early days of month end being the most important time (i.e., 11<sup>th</sup> – 17<sup>th</sup>) (referring this period to golden period).
- While it can be also seen that in middle of month the business is struggling to generate revenue.
- The analysis above shows the average daily revenue stands at Rs.23,753 with a standard deviation being Rs.16557.77 which is high for such low average indicating high revenue fluctuation.
- Minimum revenue stand at : Rs.8,093
- Maximum revenue stand at : Rs.63,028

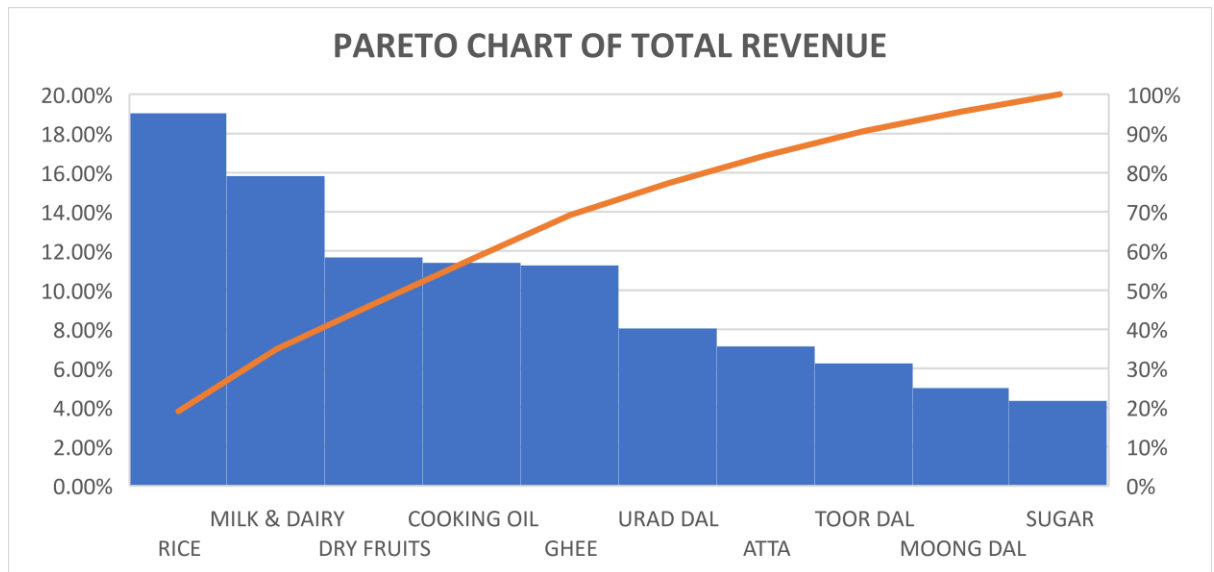
Giving us a range of Rs.54,935 (Using formula :  $Range = max - min$ )

To analyse the revenue generated from each SKU, the below graphs are generated

- For the revenue generated for the each SKU over a period of month.
- Pareto chart in respect to the total revenue generated over a period of month.

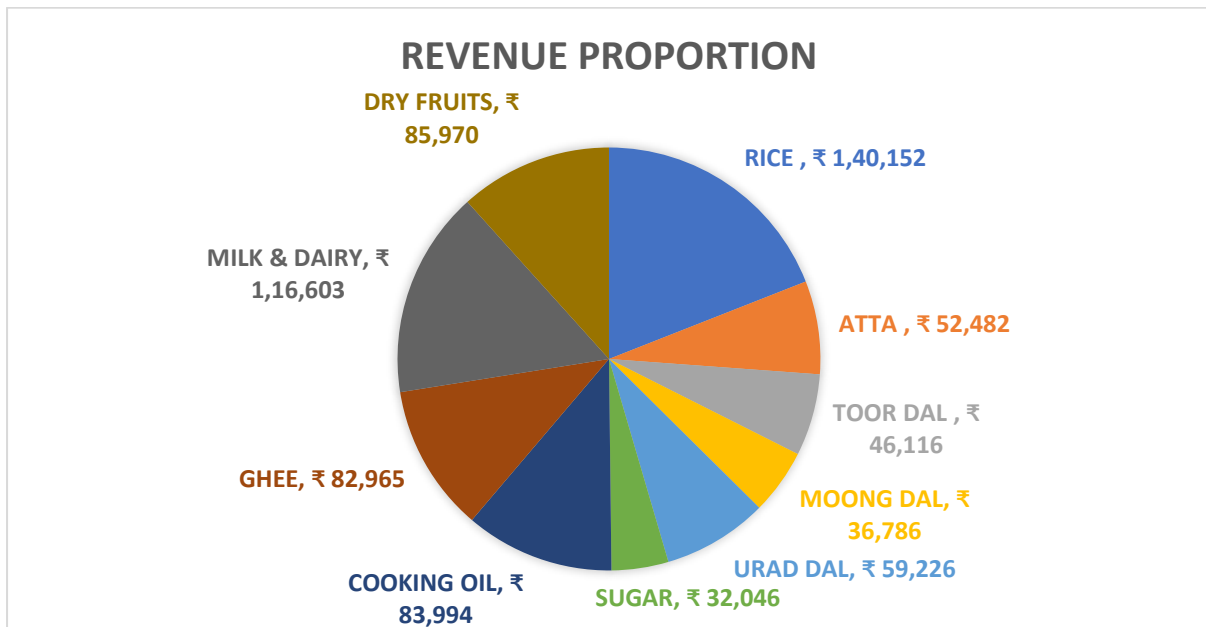


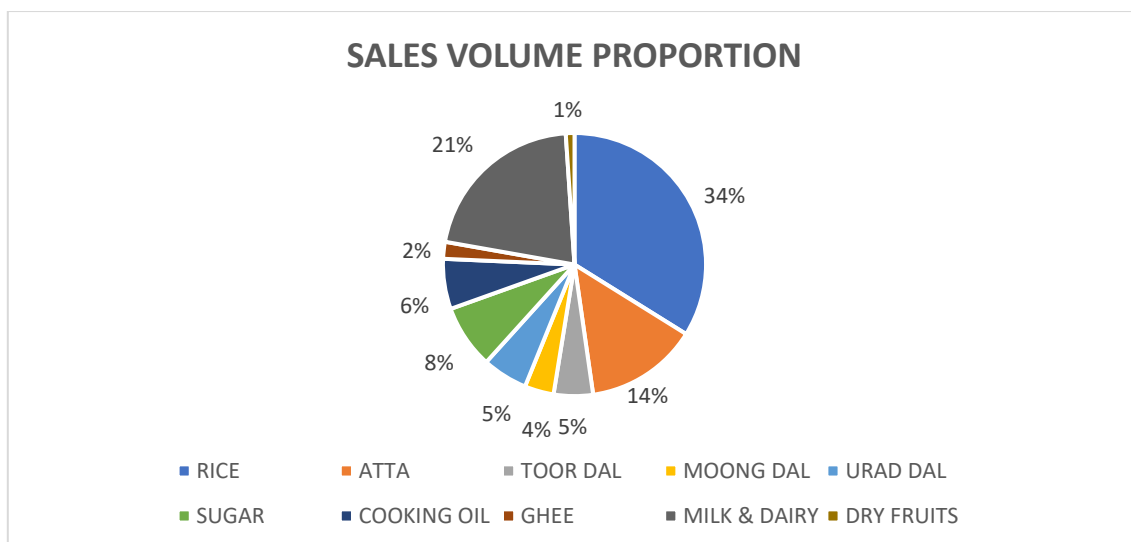




- Above analysis depicts that Rice, Milk & Dairy, Dry Fruits, Cooking Oil, Ghee and Urad Dal are the main revenue generating SKU for the shop which can be seen on the pareto chart can be seen as well as these 6 contributes approx 80% to the total revenue generated to the shop.

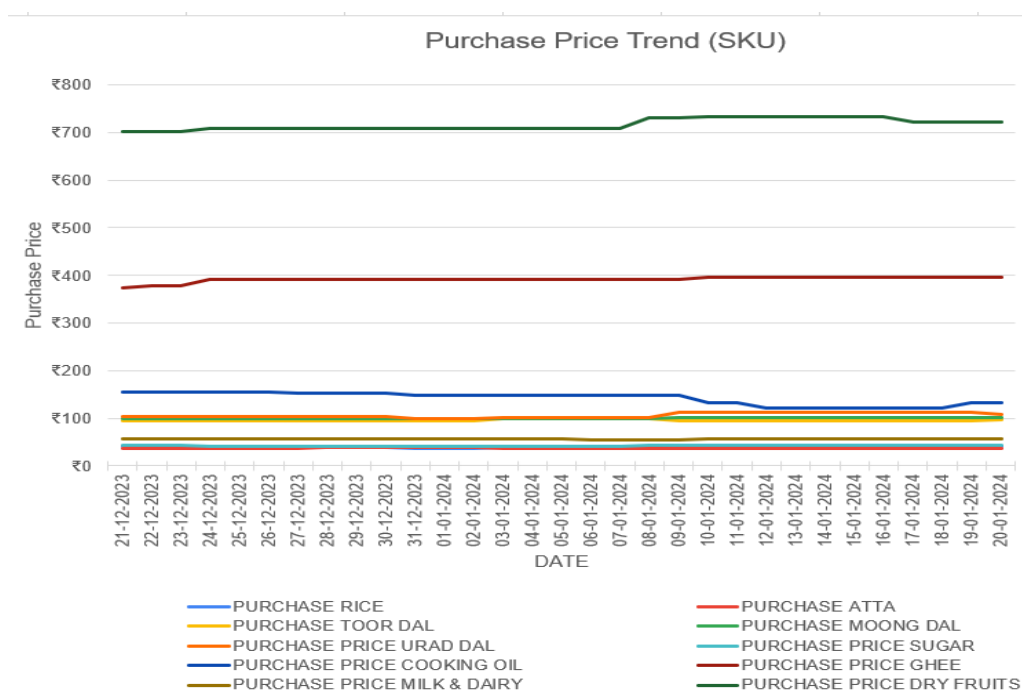
To analyse each SKU Contribution along with the pareto the graphs are generated to show the proportion of each SKU contribution to Total revenue generated as well as Total sales volume of the shop for a period of month.





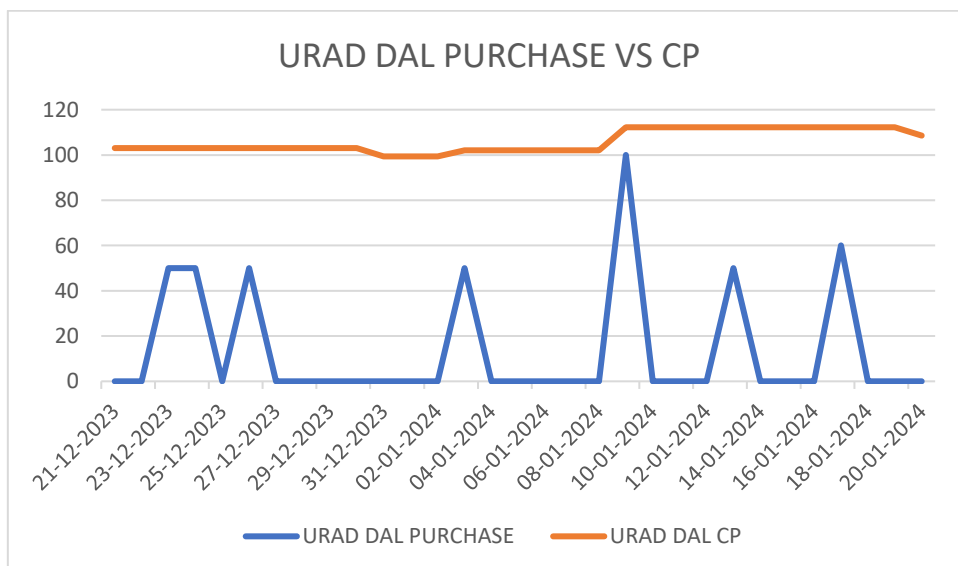
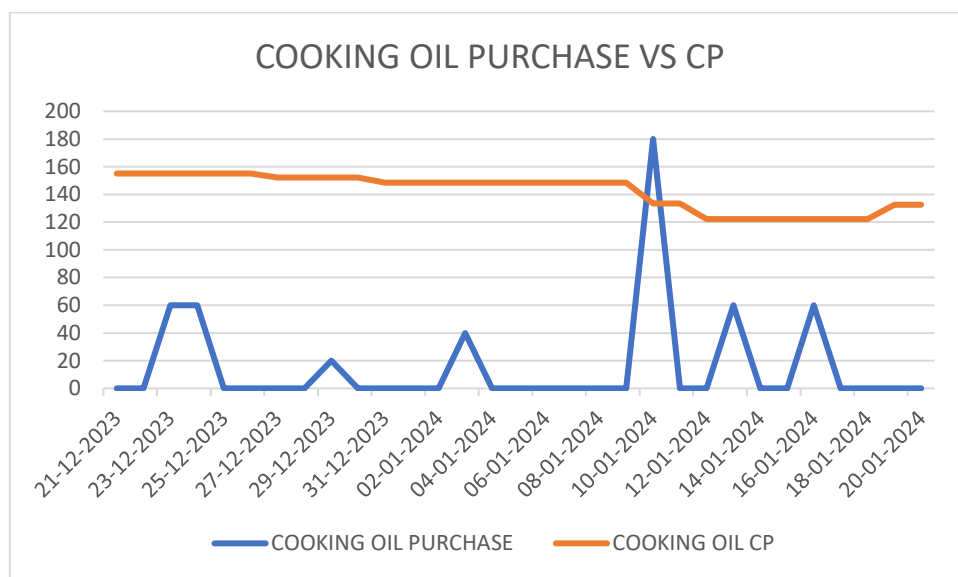
- From the above analysis it can be clearly deduced that sales and revenue proportion for each SKU are directly related to each other meaning there is no high revenue generating product at low sales volume for the shop except .
- Cooking Oil And Ghee which has a contribution of 6.2% and 6% respectively to the sales volume proportion while having a contribution margin of 11.4% and 11.3% to the total revenue indicating high revenue generation at low volume in comparison to other SKU's .
- It can also be seen that the major 6 SKUs from the pareto chart for revenue have a high sales volume proportion and revenue proportion making our pareto chart results valid.

After sales, to analyse the fluctuation or trend in purchase price, the below graph is plotted for the purchase price of each SKU over the period of month.



- The above analysis shows that there tends to be a slight increase in purchase price for most of the SKUs (except cooking oil) at the middle of the month to the end of the month which happens to coincide with the highest revenue generating period for the shop (i.e., 10<sup>th</sup> to 16<sup>th</sup> (golden period)).
- On the other hand Cooking oil purchase price trends to show a dip on the same period of time (golden time period) making it the best time to buy and generate profit from cooking oil.
- And urad dal purchase price tends to show a significant increase of Rs.10 to Rs.12 on the same period of time (golden time period) making it an early investing item (i.e., should be stocked earlier to make a huge profit).

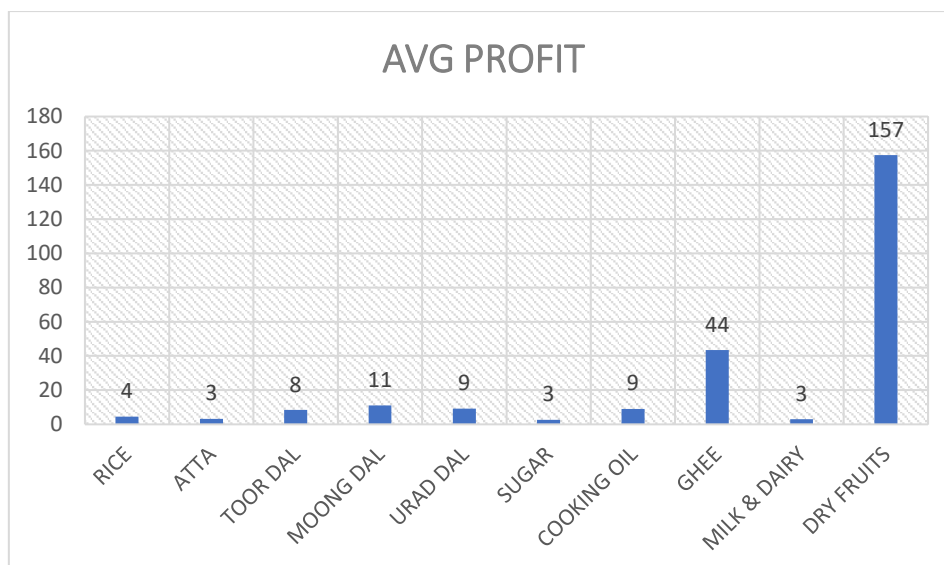
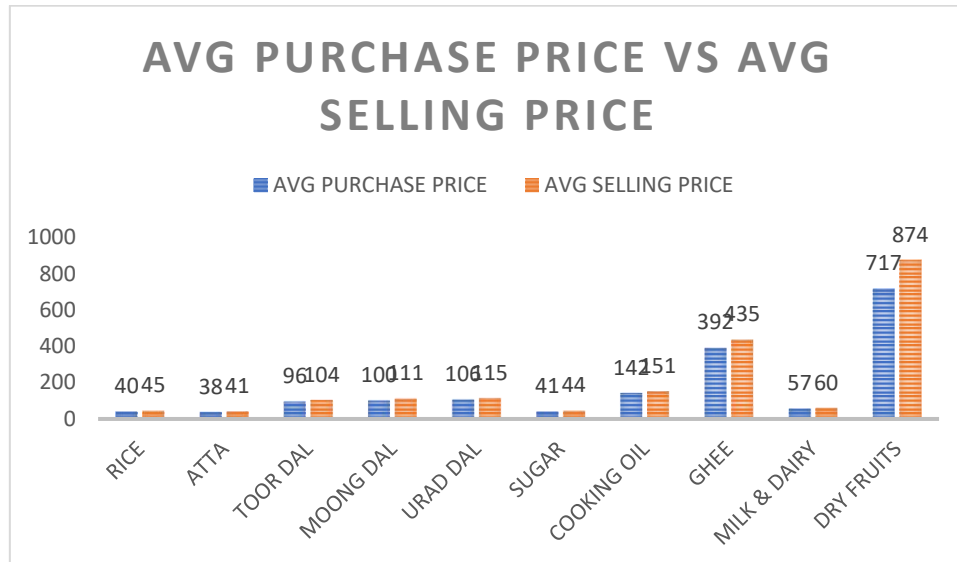
Based on above analysis below graph are plotted for cooking oil and urad dal purchase price (cost price) and purchase to analyse the buying decision made by the user.



- From above analysis it can be seen that shop owner made two wrong purchases, which were when prices were high, and the seller have earned at least extra 10-15Rs/Kg, if it would have been brought 2-3 days later or earlier in respective case

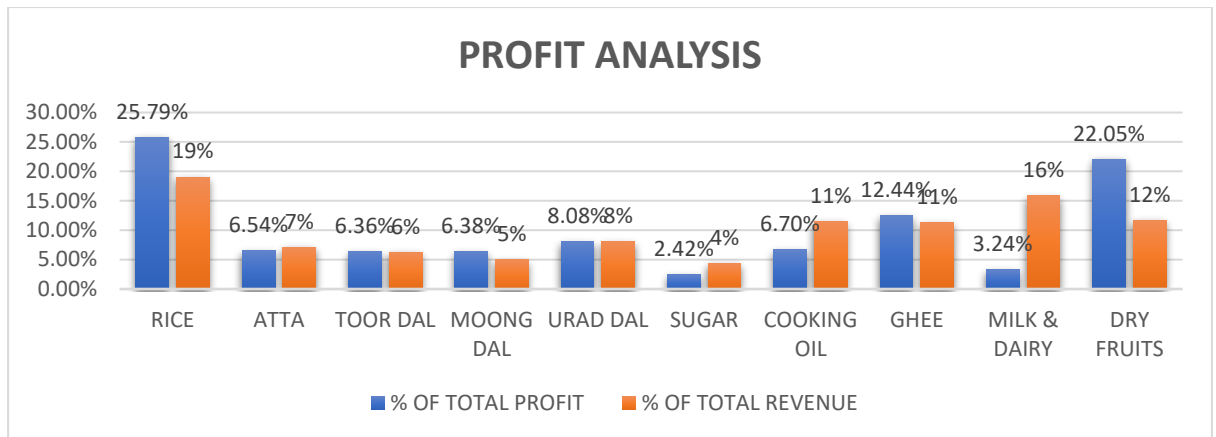
### 3.2: Profit / loss Analysis

The below graph shows the comparison of average purchase price to the average selling price for each item present in the shop which can be further used to calculate average profit per item to analyse the areas / SKUs which can be improved to increase the net profit.



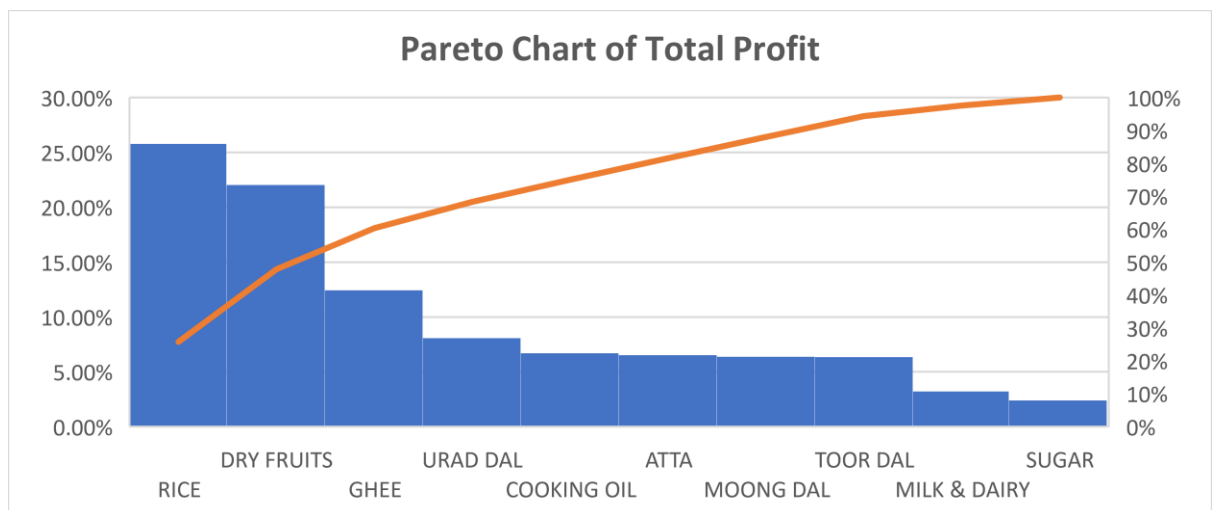
- From the above graph it can be seen that Dry fruits and Ghee are the items that holds maximum profit generating capacity while comparing this results to the revenue and revenue volume proportion pie chart it can be clearly seen that dry fruits and ghee sales volume (1.1% and 2.1%) need to be improved for the shop to increase its net profit.

Further to analyse, below graph is plotted for, each SKU contribution to the profit in comparison to contribution in the revenue



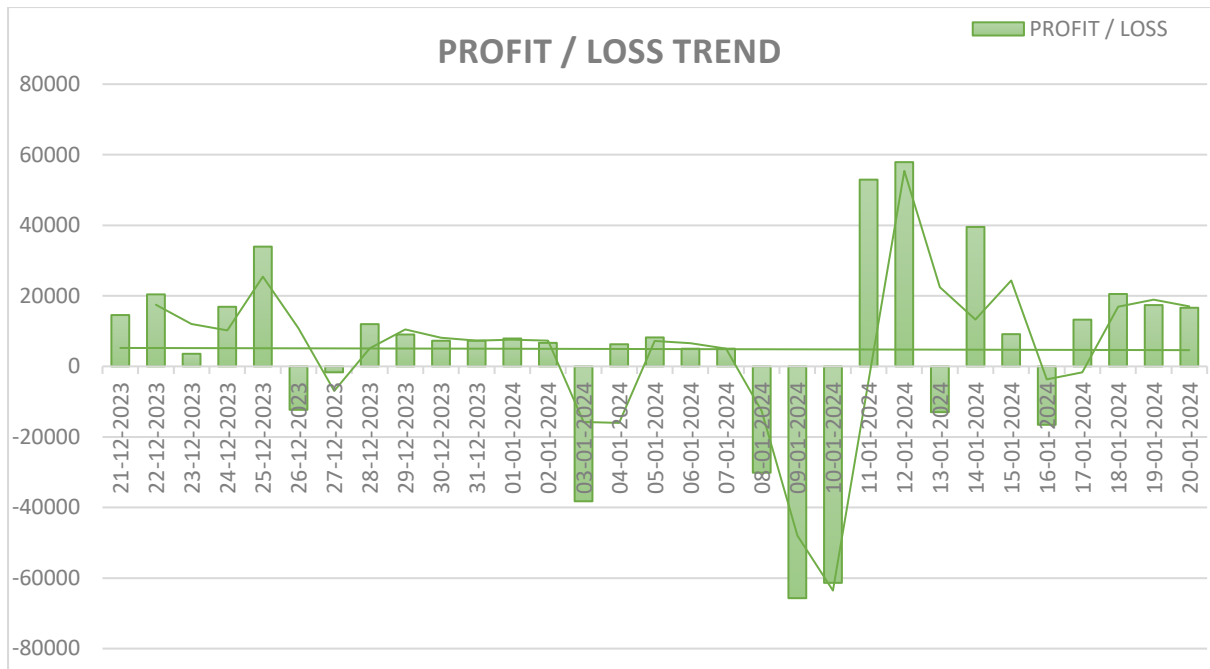
- The above analysis validated our previous analysis about dry fruits
- It also concludes that although the shop is prosperous in Milk & Dairy, cooking oil sales but their contribution to the overall profit remains significantly lower to that of others hence lower net profit which can be due to the fact of wrong purchase decision (shown above)

To validate our above finding, the below pareto chart for total profit is plotted



- From the above graph we can see that Rice, Dry fruits, Ghee, Urad dal, Cooking oil and atta to be the SKU contributing to the 80% of the shop total profit.
- Secondly, from the above graph, we do validate our above analysis about Milk & Dairy products (as they are not in 80%)

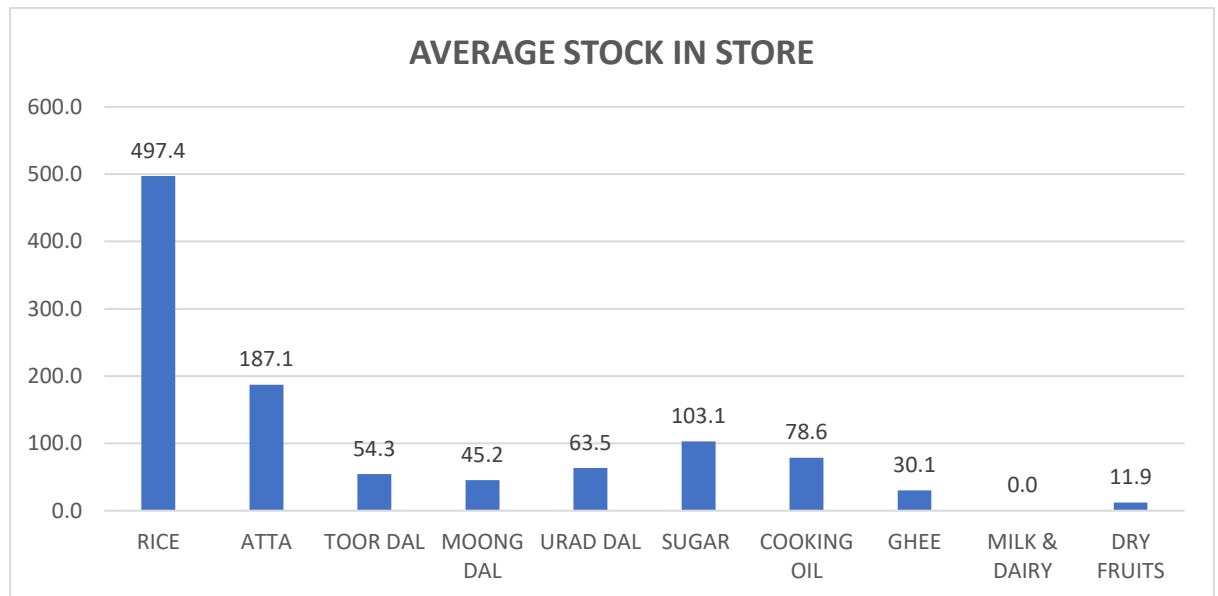
Furthermore, the below is generated to analyse the gross profit/loss over the period of month.

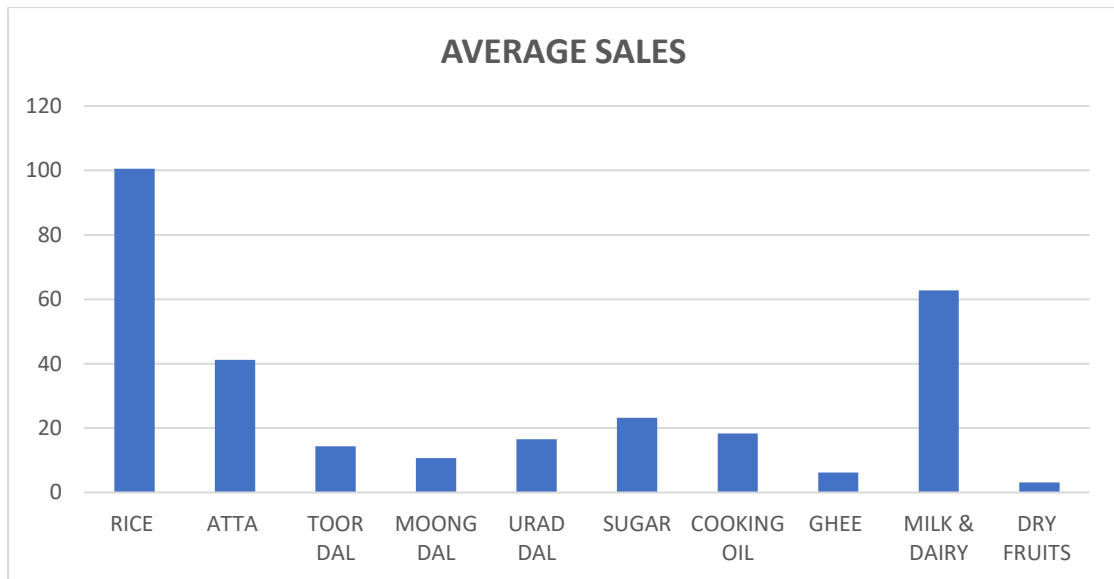


- From the above graph our analysis about the golden period for the shop ( i.e., 11<sup>th</sup> to 17<sup>th</sup>) validates as well as it can be concluded that the wrong decision made by the owner in purchase of cooking oil and urad dal (shown above) caused very high loss for the shop resulting in lower net profit

### **3.3: Inventory Analysis**

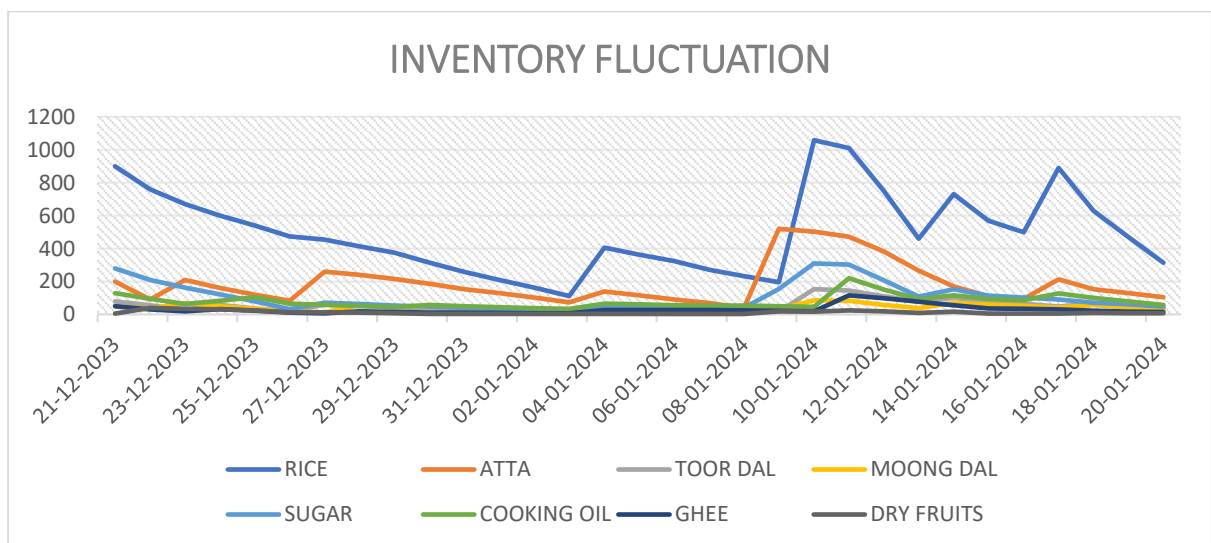
To start with every inventory analysis, below graph represented the average stock in bags/carton for every item.





- Comparing the above average stock graph with average sales of each item in exception to Milk & Dairy we can see that there are no abnormalities.

As per owner claim of inefficient inventory management, the below graph is plotted to analyse inventory fluctuation over the period of month.



- From the above graph it can be seen that although there are no abnormalities in average stock as per sales but there are high fluctuation / variance in stock present in the inventory for every SKU around the golden period (i.e., 10<sup>th</sup> to 17<sup>th</sup>) when sales are high which clearly indicated poor planning and validates owner claim
- Secondly it can be observed that shop tend to refill its stock in relation in demand or when stock is limited in inventory which can be referred to as a good practice but is backfiring in this particular phase (given all months follow the same phase).

### 3.4: PL & INSIGHTS

Further to analyse the net profit firstly fixed cost is calculated using the data given by the owner.

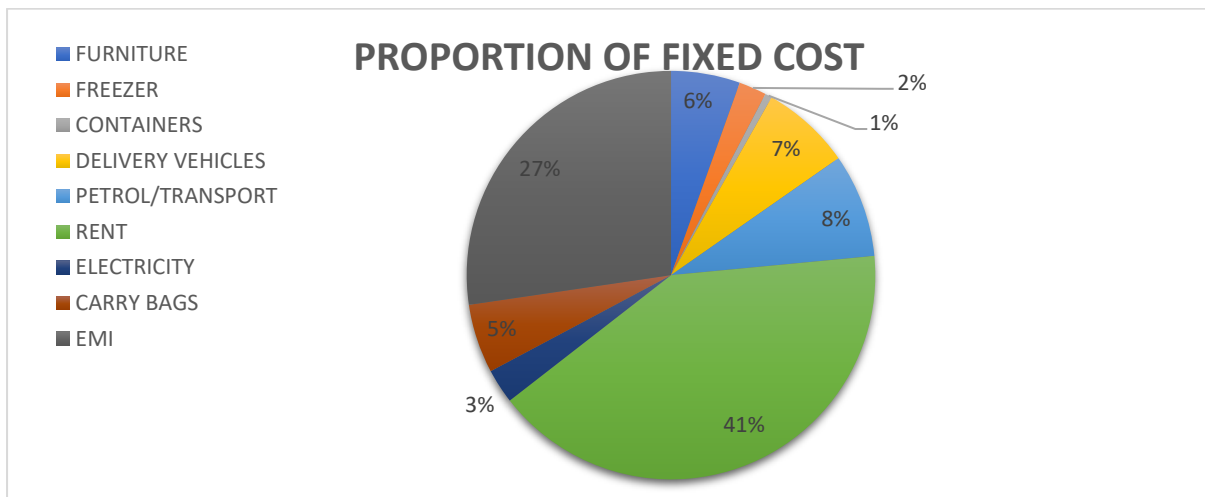
FIXED COST ANALYSIS			
	COST	RATE OF DEPRICIATION	DEPRICIATION
FURNITURE	₹ 2,00,000	1%	₹ 2,000
FREEZER	₹ 40,000	2%	₹ 800
CONTAINERS	₹ 20,000	1%	₹ 200
DELIVERY VEHICLES	₹ 1,30,000	2%	₹ 2,600
PETROL/TRANSPORT	₹ 3,000	100%	₹ 3,000
RENT	₹ 15,000	100%	₹ 15,000
ELECTRICITY	₹ 1,000	100%	₹ 1,000
CARRY BAGS	₹ 2,000	100%	₹ 2,000
EMI	₹ 10,000	100%	₹ 10,000
<b>TOTAL FIXED COST</b>	<b>₹ 4,21,000</b>	<b>FIXED COST</b>	<b>₹ 36,600</b>

- The above table provides us with fixed cost analysis along with depreciation rate (approx. given by the owner)
- Items in the above table can be majorly divided into two segments : Fixed assets and Monthly expenses
- Majority of the loan amount was used by the seller to purchase fixed assets. Also it can be seen that the rate of depreciation for them is very low (1-2%) , which is also an indication of a good investment
- The amortized monthly cost of the fixed assets if only Rs.56,000 , is very low compared to the returns he gets from them indicating good investment
- From the above table following things can also be calculated :
  - Total fixed cost : Rs.4,21,000
  - Total normalized fixed cost : Rs.36,600 , which can be used to calculate net profit using formula :

*(Net profit = Gross Profit – Total Normalised Fixed Cost)*

- Net Profit : Rs.41,500

Further the below graph is plotted to analyse fixed cost proportion



- From the above graph it can be seen that electricity and containers are the main contributors to the fixed cost but due to them being a necessity for shop there is not much reduction to do.



## **4. Interpretation of results and recommendation**

### **4.1 : Recommendation 1: Increase the sales of high profit item**

Based on the analysis, it is evident that Dry fruits and ghee have significantly higher profit margins compared to other items. The shop owner can take advantage of this by increasing the sales of these items, resulting in higher profits and additional assets for the shop.

#### **Steps which can be taken to increase the sales of high profit margin items :**

- Seasonal promotion : Dry fruits are commonly consumed during winter. The shop can host a sale on dry fruits during this season to capitalise on increased demand and boost sales.
- B2B platforms and business partnerships: Dry fruits and ghee are essential items for other businesses as well. The shop can leverage this by participating in B2B platforms or approaching other businesses to sell these items at a lower rate than what is offered to customers. While this may reduce the profit margin per unit, it can significantly increase overall sales and ultimately lead to higher net profits for the shop.
- Bulk sales and Discounts : Instead of selling small quantities of dry fruits, the shop owner can offer a large quantities of dry fruit packets at discounted prices to attract customers and other businesses owners. This strategy can make customers to buy in bulk and increase sales volume.

### **4.2 : Recommendation 2 : Increasing sales of Milk**

In line with the first recommendation, it is important to address items like Dry fruits, Milk and Dairy that may not be meeting sales expectations due to seasonal, time – specific or incentive – based factors. To optimize inventory further and increase sales, the following strategies can be implemented.

- Morning faced Milk Sales : Based on discussions with the owner, it was found that 98% of the milk sales occur in the morning. To enhance inventory management and increase sales, the shop can prioritize stocking milk specifically for morning demand. Additionally, the shop can encourage customers to purchase other goods along with the milk or offer house delivery of milk at no additional cost. This strategy can optimize fixed assets, such as delivery vehicles and increase overall sales. Successful startups like SUPR DAILY have employed similar strategies to boost their sales.
- Introduce Delivery charges: Once the initial phase of offering free house delivery of milk is established, the shop owner can gradually introduce nominal charges for delivery. This will not only help cover the cost of the service but also generate additional profits for the shop.

### **4.3 : Recommendation 3 : Restock inventory earlier than usual or during high sales periods**

The shop owner made poor decisions in purchasing cooking oil and urad dal, resulting in significant losses for the shop. These decisions were primarily influenced by high demand and low stock availability at that time. To avoid such situations and optimize inventory management, the following recommendations can be implemented:

- Time based restocking : Instead of purchasing and selling products based solely on demand, it is advisable to restock the inventory at fixed intervals. The items can be sorted based on perishable and non-perishable goods, considering the shop's facilities and owner's facilities and owners preferences. This approach allows the shop owner to identify items that can be purchased in advance, reducing the risk of making the last-minute decisions.
- Timing restock with High sales periods : Analysing the data, it is observed that the period from the 11<sup>th</sup> to 17<sup>th</sup> of each month exhibits high sales. Therefore, it is recommended to restock inventory slightly earlier than 11<sup>th</sup> to avoid making incorrect decisions due to inadequate stock. By aligning restocking with high sales periods, the shop can ensure sufficient inventory availability without excessive load or unnecessary risks.

### **4.4 : Recommendation 4: Additional Steps**

#### **4.4.1: Effective Pricing Strategies**

Another aspect to consider in increasing profitability is implementing effective pricing strategies. The shop owner can explore the following approaches:

- Bundle Pricing : Consider creating bundled offers where related products, such as dry fruits and ghee are sold together at a discounted price. This strategy encourages customers to purchase multiple items and increase the overall value of each transaction.
- Promotional Pricing : Periodically offer special promotions, such as discounts, buy-one-get-one-free offers, or limited time offers, to create a sense of urgency and attract customers. These promotional pricing strategies can boost sales during specific periods and generate excitement among customers.

#### **4.4.2: Enhance store display and visual merchandising**

Following suggestions can taken in account to enhance the store visual merchandiser :

- Eye catching displays: Arrange high profit items, such as dry fruits and ghee, in attractive displays near the entrance or high-traffic areas. Use creative and appealing signage or decorations to draw attention and entice customers to explore those sections.
- Sample stations: Consider setting up sample stations where customers can taste or try certain products, especially for dry fruits or other items that customers may be less familiar with. This allows customers to experience the quality and flavour, increasing their likelihood of making a purchase.

By implementing effective pricing strategies and enhancing store display and visual merchandising, the shop can create a more enticing and customer – friendly environment, leading to increased sales and profitability.

## **5. Conclusion:**

In conclusion, the analysis of Shiva Sai Kirana Store's Sales and expenditure data has provided valuable insights and recommendations for improving the shops, profitability and inventory management.

The analysis revealed that certain items, such as dry fruits and ghee, have high-profit margins and represent significant opportunities for increasing sales. By implementing targeted marketing strategies, such as seasonal promotions and partnerships with other businesses, the shop can tap into the potential of these high-profit items. Additionally, offering bulk sales and discounts can incentivize customers to purchase larger quantities, further boosting sales volume and overall profitability.

The findings also highlighted the importance of optimizing inventory management. By restocking inventory earlier during high sales periods and improving planning and forecasting, the shop can ensure sufficient stock availability without excess inventory buildup or shortages. This will help to maintain customer satisfaction, reduce carrying costs and improve overall operational efficiency.

Furthermore, the analysis emphasized the significance of making informed purchase decisions. The shop owner should closely monitor price fluctuations and market trends to avoid purchasing items at inflated prices, as observed with cooking oil and urad dal. By implementing a proactive approach to purchasing, the shop can minimize losses and increase profitability.

The analysis of fixed costs identified areas of expenditure that require attention, such as electricity and containers. The shop owner should continuously evaluate and optimize these costs to improve cost efficiency and maximize profit margins.

In addition, the recommendations to enhance store display and utilize effective pricing strategies can contribute to increased customer attraction and sales. Eye-catching displays, sample stations and promotional pricing can create a positive shopping experience and encourage customers to make additional purchases, leading to higher revenue and profitability.

By implementing these recommendations, Shiva Sai Kirana Store can improve its financial performance, increase profitability and establish a stronger position in the market. It is important for the shop owner to continually monitor and evaluate the effectiveness of these strategies, making necessary adjustments to ensure long-term growth and sustainability.