Optimizing Profits: A Data-Driven Approach for Har-Hith Grocery Store's Inventory Management

Final report for the BDM capstone Project

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1) Executive Summary and Title

This report offers a thorough examination of the sales and inventory data of "Har-Hith Grocery Store" providing valuable insights into crucial elements of their business operations. The project, named " Optimizing Profits: A Data-Driven Approach for Har-Hith Grocery Store's Inventory Management," aims to tackle the challenges faced by the store particularly focusing on the inventory management of the grocery store.

The primary objective of capstone project is to enhance net profit by optimizing inventory and refining inventory management practices to pinpoint the most advantageous purchasing times and streamline goods flow. Achieving this goal involves conducting a comprehensive analysis of sales data, stock movement data, and product purchase records. Identifying gaps and areas for improvement within the current strategy will be a crucial focus of this project.

The report will delve into a comprehensive analysis of data to uncover patterns and trends. The analysis has revealed important insights about the business, including the top revenue-generating category, the peak sales month, average inventory turnover, and FSN percentage across categories. These findings are instrumental in enhancing inventory management practices and identifying seasonal demand patterns. Finally, detailed information derived from the profit/loss analysis. For analysis, a variety of Excel tools such as pivot tables, bar graphs, line graphs, scattered chart are employed for valuable graphical representations. These analysis processes illustrates potential areas of improvements for “Har-Hith Store”.

In conclusion, the store can enhance its financial performance, boost profitability, and solidify its market position by leveraging insights from the analysis and implementing the provided recommendations.

2) Detailed Explanation of Analysis Process/Method

As explained earlier, during a span of one year, information was collected and initially recorded in separate CSV files. To simplify the analysis, all these files were merged into a unified spreadsheet. Following this consolidation, a thorough examination of the data was conducted to verify its cleanliness and organization, ensuring optimal conditions for effective analysis. This process included the

identification and correction of inconsistencies, addressing missing values, and detecting potential outliers that could impact result accuracy. Furthermore, as a component of the data cleaning phase, extraneous columns were eliminated to enhance the dataset for subsequent analysis.

For Statistical Analysis following techniques used in process:

2.1 Sales Data Analysis:

- **Exploratory Data Analysis (EDA):** Understand the distribution of sales data through descriptive analysis. To get descriptive statistics of monthly revenue and daily revenue, excel data analysis toolpak used. This analysis calculated summary statistics such as average, median, max, min, standard deviation. Kurtosis, skewness, range. By applying these steps and techniques to sales data, we gain insights into the data distribution, outliers, trends, relationships, and overall data quality.
- **Time–series data Analysis:** Perform date-wise analysis to identify trends, seasonality, and any anomalies. Calculated key metrics like daily or monthly sales averages to understand the overall performance. Firstly total revenue of each month calculated using pivot table as shown in Figure 1, then data visualize through various chart such as line, bar; time plotted in x-axis and sales in y-axis.

Sales analysis														
Month / Category	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total Revenue	Avg. Daily sales
Beverages & Softdrink	₹19,405	₹17,019	₹26,761	₹36,086	₹41,354	₹111,026	₹54,489	₹27,950	₹25,996	₹21,531	₹8,252	₹8,247	₹398,117	₹1,091
Home Care	₹16,954	₹13,779	₹18,012	₹19,759	₹17,132	₹18,195	₹22,771	₹16,740	₹20,701	₹27,570	₹16,412	₹15,601	₹223,626	₹613
Sugar & Sweeteners	₹13,732	₹8,931	₹12,244	₹14,737	₹21,599	₹31,200	₹11,279	₹11,512	₹14,214	₹16,743	₹11,903	₹11,586	₹179,680	₹492
Pulses	₹6,107	₹3,721	₹5,990	₹7,563	₹10,373	₹7,379	₹11,091	₹9,973	₹15,985	₹36,468	₹20,605	₹34,640	₹169,895	₹465
Spices & Condiments	₹15,871	₹12,987	₹15,013	₹13,927	₹16,662	₹14,459	₹22,840	₹13,836	₹11,703	₹12,314	₹11,167	₹6,955	₹167,735	₹460
Savouries & Snacks	₹9,487	₹10,250	₹11,549	₹11,517	₹12,585	₹17,274	₹16,078	₹13,918	₹16,437	₹14,031	₹13,751	₹9,254	₹156,130	₹428
Ghee	₹13,587	₹9,821	₹8,251	₹6,869	₹6,678	₹4,748	₹13,113	₹20,986	₹18,574	₹25,539	₹12,833	₹5,740	₹146,738	₹402
Biscuit	₹7,990	₹7,929	₹8,958	₹8,727	₹12,793	₹12,235	₹13,428	₹11,560	₹11,983	₹12,906	₹6,065	₹6,805	₹121,380	₹333
Dry Fruits	₹8,454	₹7,800	₹9,146	₹8,100	₹7,428	₹10,114	₹11,175	₹11,056	₹11,875	₹8,415	₹10,682	₹8,826	₹113,073	₹310
Personal Care	₹8,718	₹5,825	₹6,286	₹6,875	₹8,215	₹9,432	₹9,288	₹9,359	₹9,140	₹10,080	₹7,055	₹6,362	₹96,635	₹265
Cereals	₹5,481	₹7,517	₹8,250	₹8,705	₹9,118	₹5,130	₹9,090	₹9,151	₹9,897	₹8,004	₹5,697	₹5,880	₹91,921	₹252
RTE/RTC	₹6,456	₹2,424	₹3,221	₹3,810	₹2,763	₹2,735	₹3,014	₹1,496	₹2,733	₹3,415	₹3,515	₹1,456	₹37,038	₹101
Edible Oil	₹4,766	₹3,385	₹1,720	₹600	₹5,805	₹2,325	₹1,810	₹4,000	₹1,175	₹915	₹1,670	₹3,394	₹31,564	₹86
Flour	₹2,240	₹2,198	₹3,569	₹3,183	₹1,978	₹1,980	₹962	₹2,282	₹2,854	₹2,205	₹1,712	₹2,408	₹27,572	₹76
Flour Mixes	₹4,704	₹1,941	₹1,557	₹948	₹1,524	₹1,868	₹1,717	₹1,196	₹2,549	₹3,037	₹3,308	₹3,073	₹27,422	₹75
Confectionery	₹1,963	₹2,587	₹3,291	₹2,069	₹1,726	₹2,794	₹2,441	₹2,191	₹1,993	₹686	₹754	₹1,074	₹23,568	₹65
Health & Wellness	₹6,973	₹1,457	₹1,359	₹1,094	₹951	₹801	₹1,745	₹860	₹670	₹1,871	₹195	₹2,136	₹20,113	₹55
Other Cereals	₹375	₹695	₹926	₹950	₹1,315	₹1,678	₹1,520	₹1,350	₹1,510	₹1,220	₹959	₹600	₹13,099	₹36
Electrical Goods	₹645	₹1,375	₹1,440	₹940	₹772	₹155	₹550	₹1,151		₹1,038	₹810	₹1,320	₹10,198	₹28
Soya Products	₹286	₹286	₹191	₹226	₹238	₹286	₹318		₹400	₹380	₹350	₹400	₹3,361	₹9
Stationary	₹79		₹25	₹57	₹84	₹263	₹97		₹45	₹132	₹25		₹808	₹2
Total Revenue	**₹154,272**	**₹121,929**	**₹147,758**	**₹156,742**	**₹181,093**	**₹256,080**	**₹208,816**	**₹170,568**	**₹180,433**	**₹208,500**	**₹137,721**	**₹135,759**	**₹2,059,672**	**₹5,643**

Figure 1: Sale analysis showing revenue category wise across the year

The aim of this sales analysis is to figure out if sales are going up, staying the same, or going down consistently. This helps us set realistic goals for sales and plan our

business strategies better. Additionally, this analysis helps us understand if the strategies we use for the business are working well. By comparing these strategies with the sales trends we find, we can improve how we do things and make our business smarter.

- **Category-wise Analysis:** Business working with total 1057 products (SKU). These products categorized under 21 categories. Analyze sales performance across different product categories and Identify best-selling and underperforming categories. For category wise analysis total revenue for each category calculated using pivot table. And average daily sale of each category find out using below formula.

$$Average\ Daily\ Sale = \frac{total\ revenue}{365}$$

Furthermore, pie chart used to know revenue proportion of top categories. The main advantage of category-wise analysis in sales analysis is to gain insights into the performance of different product categories within a business. This type of analysis involves breaking down sales data into distinct categories, and examining how each category contributes to overall sales.

  - **Pareto analysis:** For Pareto analysis categories sorted in descending order by revenue, then cumulative revenue and % contribution to revenue calculated as shown below in below figure, using this data revenue Pareto chart created and same process used to create volume Pareto chart. The Volume Pareto Chart helps identify the most significant contributors to the overall volume. The Revenue Pareto Chart assists in strategic decision-making by emphasizing the importance of key revenue-generating elements.

SUM =C68/B$89

	A	B	C	D
67	CATEGORY	REVENUE	CUMULATIVE SALES	% CONTRIBUTION TO REVENUE
68	Beverages & Softdrinks	₹398,117	₹398,117	=C68/B$89
69	Home Care	₹223,626	₹621,743	30.19%
70	Sugar & Sweeteners	₹179,680	₹801,422	38.91%
71	Pulses	₹169,895	₹971,318	47.16%
72	Spices & Condiments	₹167,735	₹1,139,052	55.30%
73	Savouries & Snacks	₹156,130	₹1,295,182	62.88%
74	Ghee	₹146,738	₹1,441,921	70.01%
75	Biscuit	₹121,380	₹1,563,300	75.90%
76	Dry Fruits	₹113,073	₹1,676,373	81.39%

Figure 2: Cumulative sales by revenue

SUM =C93/B$114

	A	B	C	D
92	CATEGORY	SALES QTY	CUMULATIVE SALES	% CONTRIBUTION TO SALES
93	Biscuit	11485	11485	=C93/B$114
94	Beverages & Softdrinks	9865	21350	42.21%
95	Savouries & Snacks	6490	27840	55.05%
96	Personal Care	3864	31704	62.69%
97	Confectionery	3386	35090	69.38%
98	Spices & Condiments	3306	38396	75.92%
99	Home Care	3222	41618	82.29%
100	Pulses	2460	44078	87.15%
101	Sugar & Sweeteners	1868	45946	90.85%
102	RTE/RTC	1437	47383	93.69%

Figure 3: Cumulative sales by volume (sales qty)

Both Volume and Revenue Pareto Charts used together for a comprehensive analysis. Identifying categories or elements that appear in both charts can reveal areas with high volume and high revenue, offering significant opportunities.

- **Seasonal variation:** For seasonal variation insights sales divided in quarters. Revenue in each quarter visualize via doughnut chart. Furthermore, the revenue contribution by each category in different quarter identifies by stacked column chart. Since the total height (or length) of the bars or columns is fixed at 100%, the chart ensures consistency across categories, making it easier to interpret and compare. Effective in highlighting changes in the relative proportions of categories over time or across different groups.

2.2 Inventory Analysis:

- **Calculate key Metrics:** Sum the values of inward stock, outward stock, and closing stock for each product to obtain annual totals. Other key metrics calculated as below –

$$Average\ value\ of\ Inventory = \frac{Opening\ stock\ value + closing\ stock\ value}{2}$$

$$Cost\ of\ Goods\ Sold(COGS) = Outward\ stock * Cost\ price$$

$$Average\ Day\ of\ Inventory\ = \frac{Average\ value\ of\ Inventory}{COGS} * 365$$

Average Day of Inventory or Days Sales of Inventory (DSI) is directly related to the cash conversion cycle, representing the time it takes to convert inventory investments into cash receipts. These key metrics further used in inventory turnover analysis.

- **Inventory Turnover Analysis:** Calculated inventory turnover ratios to understand how quickly products are moving off the shelves. Identify slow-moving or obsolete inventory. Inventory Turnover Ratio (ITR) calculated for each category calculated using below formula –

$$Inventory\ Turnover\ Ratio\ (ITR) = \frac{COGS}{Average\ Value\ of\ Inventory}$$

The inventory turnover ratio is a key performance indicator that helps assess a business's efficiency in managing its inventory. Analyzing this ratio provides valuable insights into operational effectiveness, financial health, and potential areas for improvement in inventory management strategies. The ratio provides insights into the demand for a company's products. A higher turnover suggests strong sales and market

demand. A lower inventory turnover ratio may indicate slow-moving inventory, potentially leading to a higher risk of obsolescence.

- **FSN analysis:** Based on Average Day of Inventory and ITR, FSN analysis performed. Pie chart used to visualize fast, slow and non-moving categories. For fast-moving items, maintaining higher stock levels may be justified to meet demand. On the other hand, holding costs can be reduced for slow-moving and non-moving items to prevent excess stock.

2.3 Profit/Loss analysis:

- Key Metrics For P/L Analysis:

  Gross profit calculated using below formula across different categories.

$$Gross\ Profit = Revenue - COGS$$

  Gross profit margin calculated for different categories:

$$Gross\ Profit\ Margin = \frac{Gross\ Profit}{Revenue} * 100\ \%$$

Compare the gross profit margins across different categories. This will highlight which categories are more profitable and which might need improvement in terms of cost management or pricing strategy. For visualization stacked bar chart, pie chart, pareto chart used.

- **Ratio Analysis:** Various Ratio such as Gross profit ratio, Net profit ratio, Current Ratio and Return on Capital Employed (ROCE) calculated for Final Balance Sheet.

  Formula used for calculations are as follow:

$$Gross\ Profit\ Ratio = \frac{Gross\ profit}{Net\ sales} * 100$$

$$Net\ Profit\ Ratio = \frac{Net\ profit}{Net\ sales} * 100$$

$$Current\ Ratio = \frac{Current\ Assets}{Liabilities}$$

$$Return\ on\ Capital\ Employed = \frac{Net\ Profit(PBIT)}{Capital\ Employed}$$

By analyzing these ratios together, we gain a comprehensive understanding of the grocery store's financial situation. Ratios provide a quantitative analysis of various

aspects of the business, offering insights into areas such as profitability, liquidity, solvency, and efficiency.

3) Results and Findings

Based on above mentioned analysis process and visualization of various charts depicts key insights explained as following:

3.1 Descriptive Analysis:

Descriptive statistics of sales data shown in below tables –

Descriptive Statistics of Monthly Revenue	
Average Monthly Sale	₹171,639.31
Highest Revenue in a month	₹256,189
Lowest Revenue in a month	₹122,039
Highest Revenue by category	₹398,117
Median	₹163,721.00
Standard Deviation	₹38,152.84
Kurtosis	0.75
Skewness	0.93
Range	₹134,149.48

Table 1: Descriptive Stats of monthly revenue

Descriptive Statistics of daily Revenue	
Average Daily Sale	₹5,642.94
Highest Revenue in a day	₹89,309.00
Lowest Revenue in a day	₹118.00
Median	₹5,191.00
Standard Deviation	₹5,118.42
Kurtosis	196.72
Skewness	12.16
Range	₹89,191.00

Table 2: Descriptive Stats of daily revenue

From Table 1 key points observed are Revenue fluctuates significantly month-to-month. Median close to mean suggests symmetrical distribution, but positive skew indicates occasional high months. Large range reflects wide spread in revenue. Moderate kurtosis suggests some potential outliers.

Similarly Table 2 depicts descriptive stats of daily revenue. The data suggests a highly variable revenue stream with occasional exceptionally high sales days. The positive skewness and high kurtosis indicate a distribution with frequent extreme values, influencing the mean to be higher than the median. This implies that the grocery store experiences both peak and slow days, necessitating adaptive business strategies. Understanding and monitoring these fluctuations are crucial for effective resource allocation and planning. Peaks in revenue may require enhanced inventory management and staffing, while slower days might prompt cost-saving measures. Overall, the findings emphasize the importance of flexibility and strategic planning to navigate the diverse daily revenue patterns in the grocery business.

3.2 Time-series analysis:

Figure 4 illustrates the analysis of daily sales trends. An exceptional surge in sales, amounting to **₹89,309**, was noted on June 6, 2023. The Figure provides clear evidence of the fluctuating nature of daily total sales.

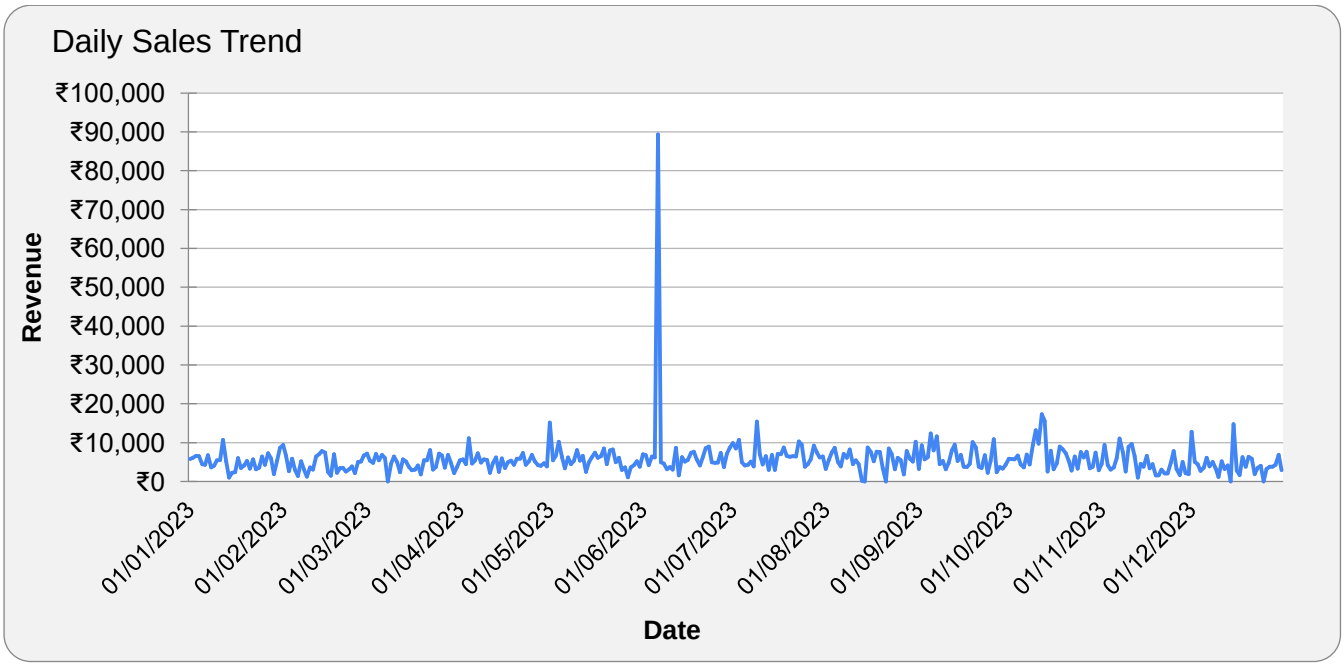

Figure 4: Line chart of Daily sales (revenue) trend across the year 2023

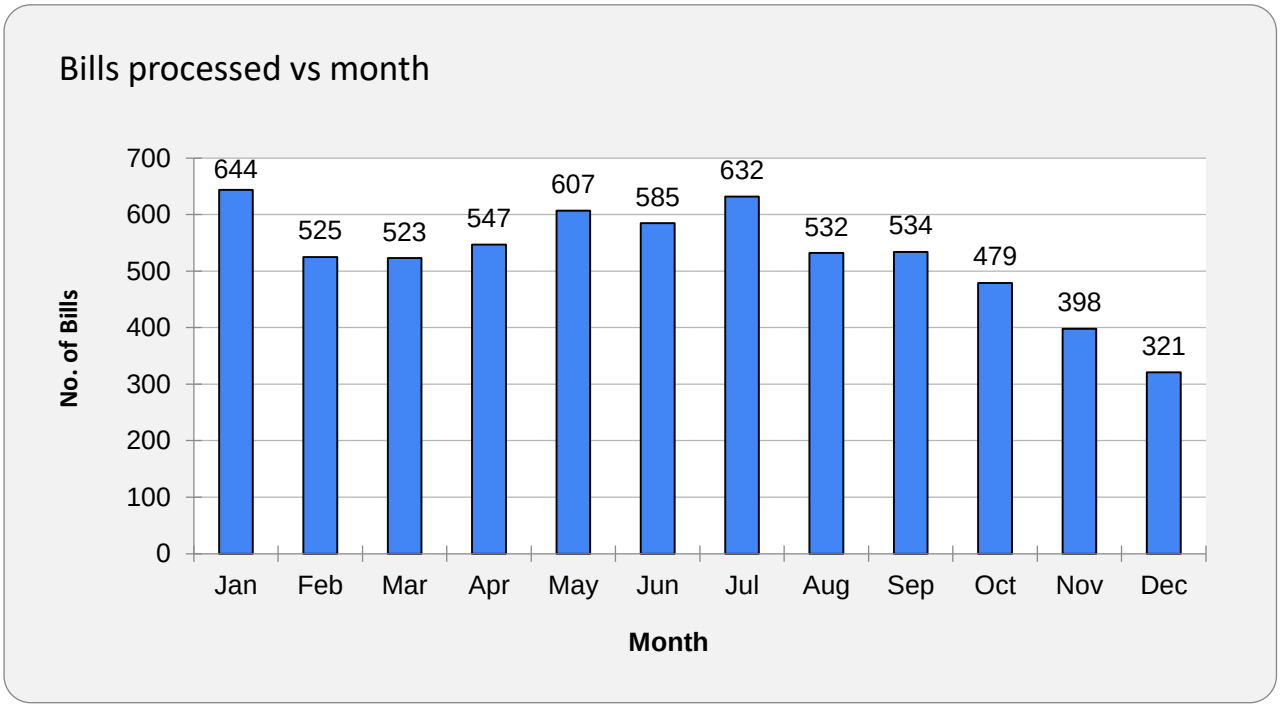

Figure 5: Column Chart of Number of bills processed in a month

Based on Figure 5, it is evident that the average monthly number of processed bills stands at approximately **530**. Notably, there was a slight decrease in the number of orders received during 4th quarter.

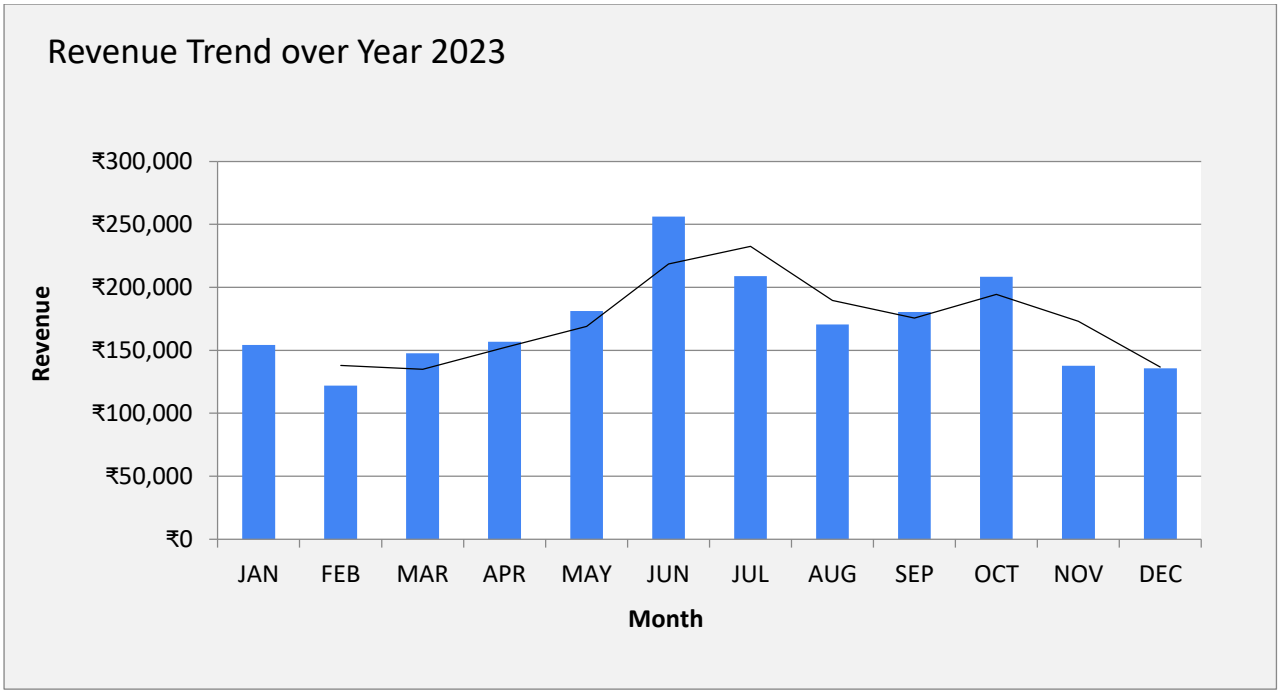

Figure 6: Column Chart of revenue trend by month

Derived from Figure 6, it becomes apparent that the month of **June** registered the highest sales, amounting to **₹256,189**, closely followed by **Oct** with sales reaching **₹208,500**. Conversely, **Feb** depicted the lowest sales figure, total **₹122,039**. Despite receiving the low number of orders, Figure 6 illustrates that **Oct** month achieved the 2nd highest total sales among all the months under consideration. On the other hand **Feb** month received average number of order but lowest sales among all month. After Time-Series analysis, extend our analysis based on various categories of products.

3.3 Category wise analysis:

Pareto chart used for category wise analysis of sales, Figure 7 Revenue Pareto depicts that 80% of revenue generated by 40% of category, out of which **Beverages & Soft drinks** alone contribute about 20% of revenue.

Further, Figure 8 Volume Pareto shows that 80% sales generated by approximate 30% of product. **Biscuits** category contribute highest sales volume about 23%. Analysis of these two chart reveal some key findings, categories such as **biscuit, ghee** showing sales volume high but revenue is quite low. These categories come under high volume low revenue segment.

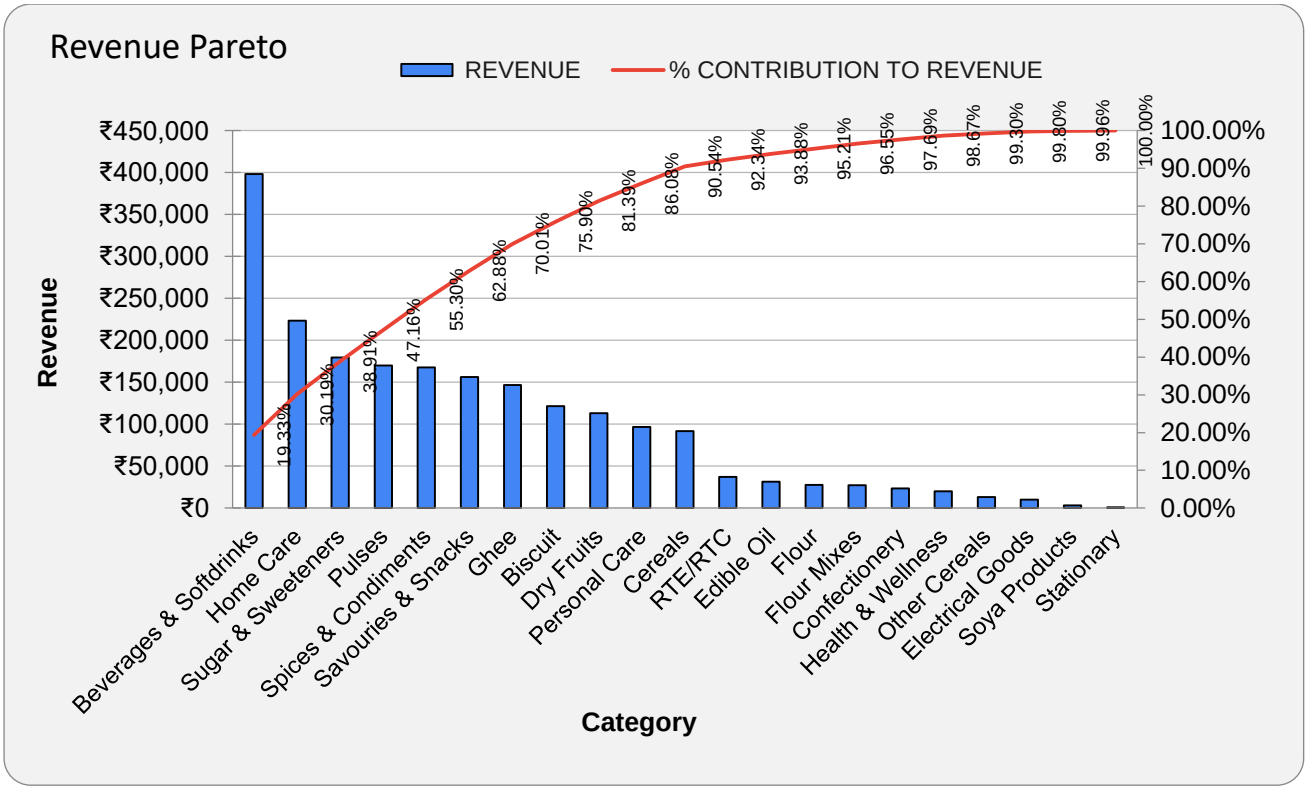

Figure 7: Revenue Pareto chart across categories

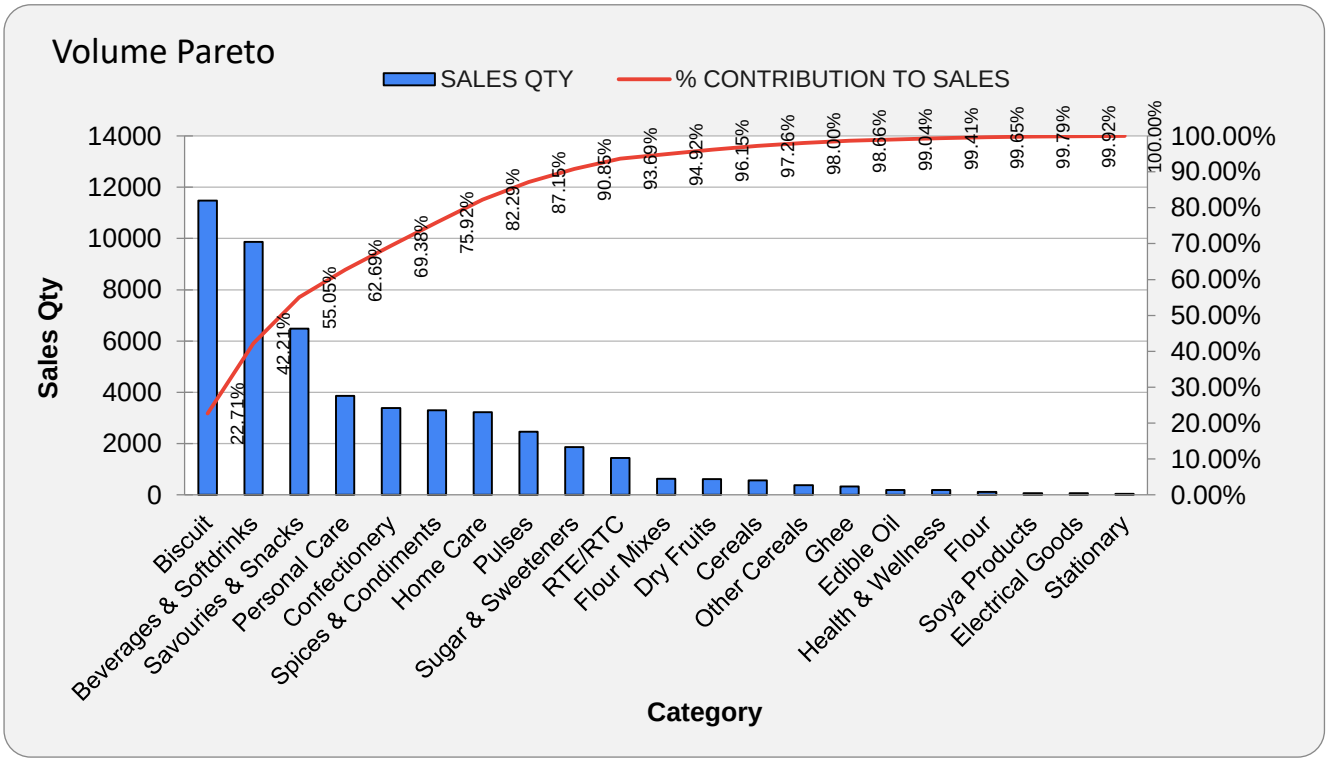

Figure 8: Volume Pareto chart across categories

3.4 Combined Analysis:

For seasonal variation, a combined analysis has been conducted. Sales trend of various categories (figure 9), depicts high sale in month of **May, June, July** contributed by categories such as **Beverages**, **Sugar** and sales of these two gradually decline in 4th quarter. In 4th quarter of year **Pulses** category shows high contribution in sales. These fluctuation in sales of various categories across the year helps to manage inventory, as per requirement of products on different seasons.

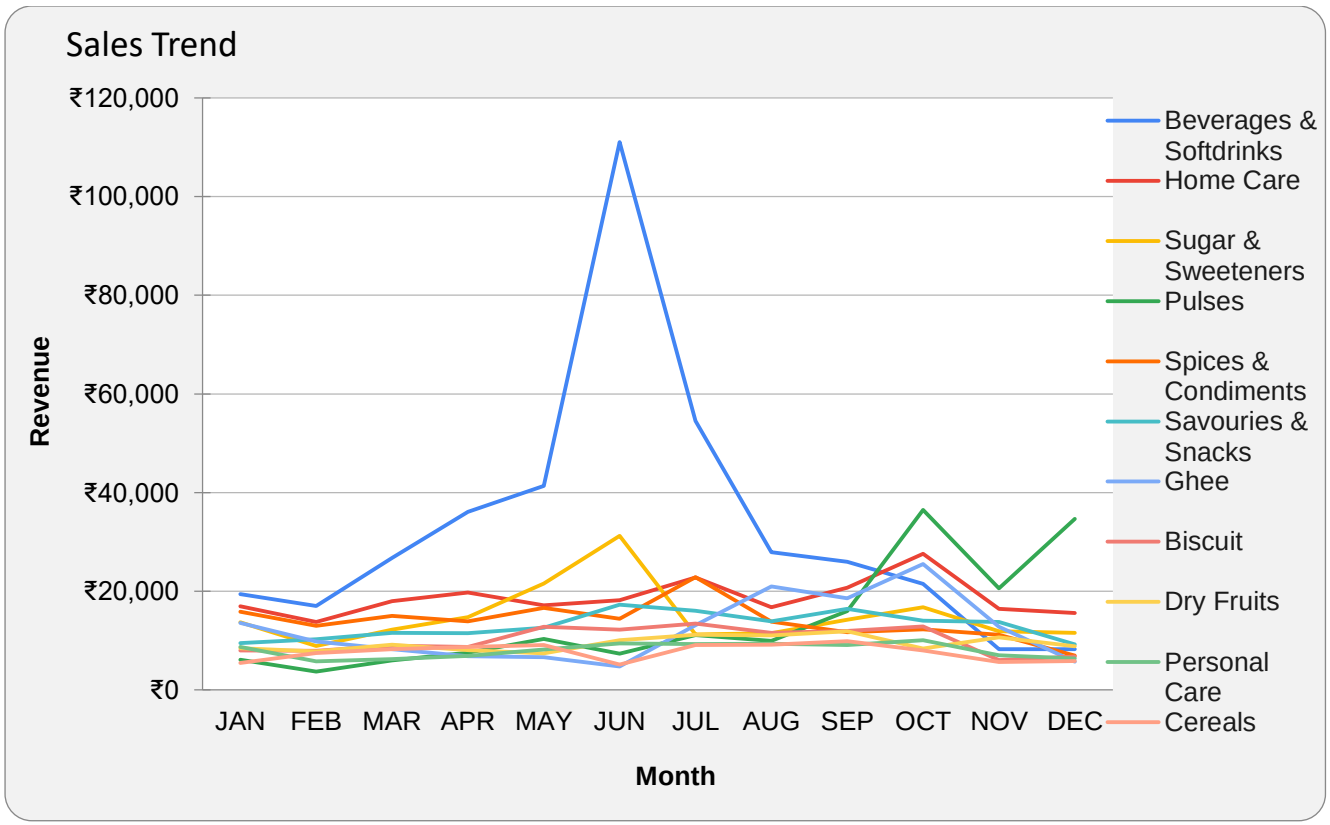

Figure 9: Line chart of sales trend across categories

To acquire additional information on seasonal variation stacked column chart plotted as shown in Figure 10. This chart shows the sales volume proportion across different quarters for each category. Analyzing sales volume proportion across quarters for different categories provides valuable insights into the dynamics of consumer demand. Using this combined analysis store can focus on products of those categories which can help to increase the monthly revenue of store.

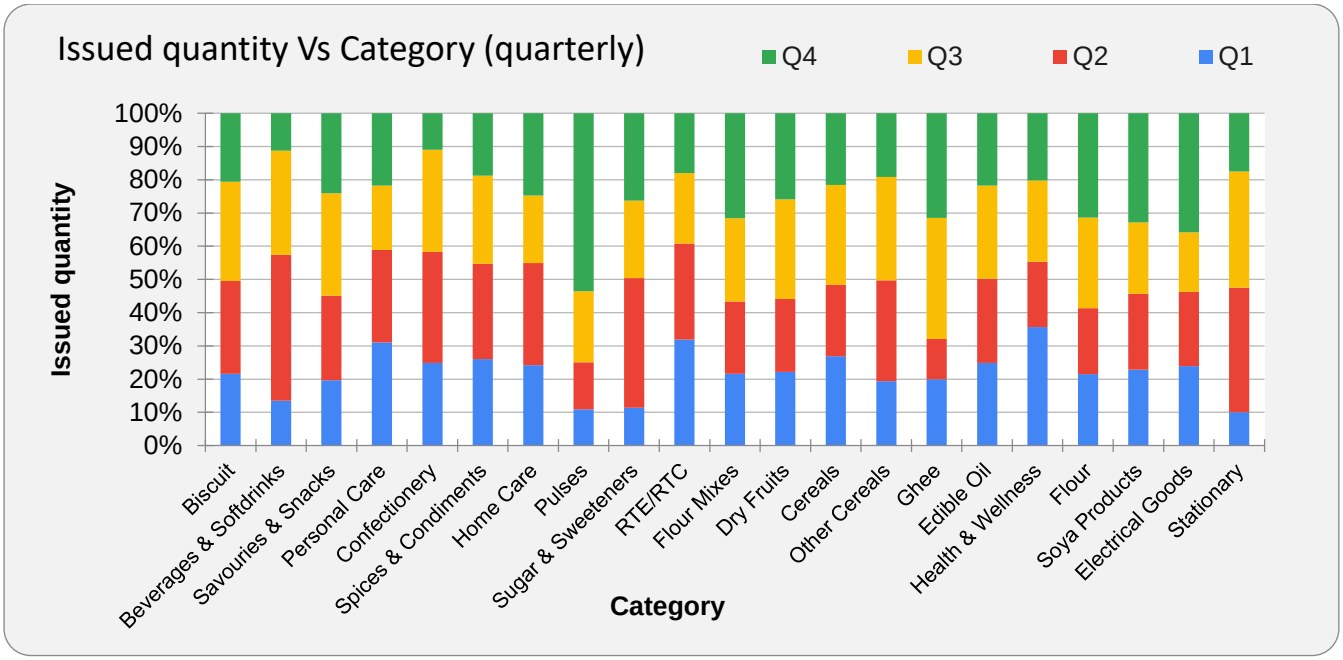

Figure 10: Stacked column chart of issued quantity (sales) in each quarter for various categories

3.5 Inventory Analysis:

After sale analysis and visualizing time-series data as well as category wise data, Inventory analysis conducted. Inventory analysis reveals the reason behind fluctuating nature of sales across different categories.

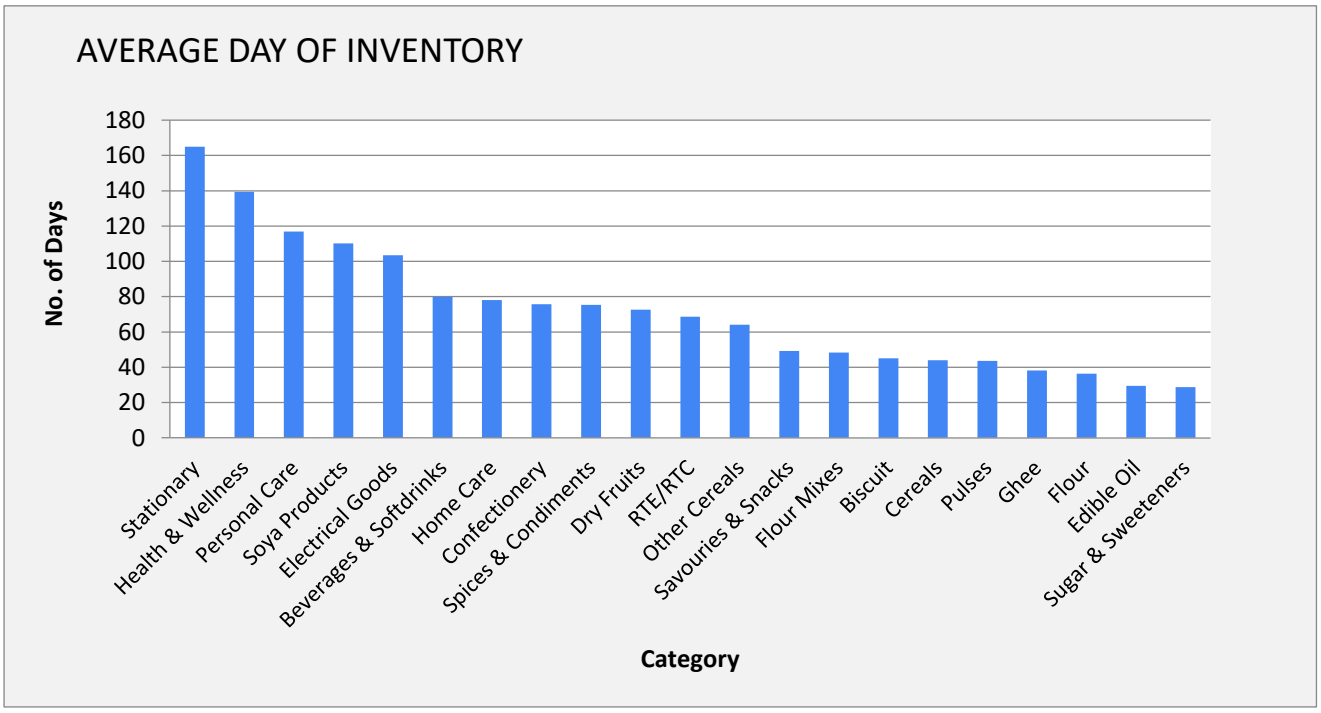

Figure 11: Column chart of Average Day of Inventory

Average Inventory and Sales - Figure 11 shows average day of inventory across different categories. Figure 12 represent average daily sales of categories. The term "average day of inventory" refers to the average number of days it takes for store to sell its inventory during a specific period.

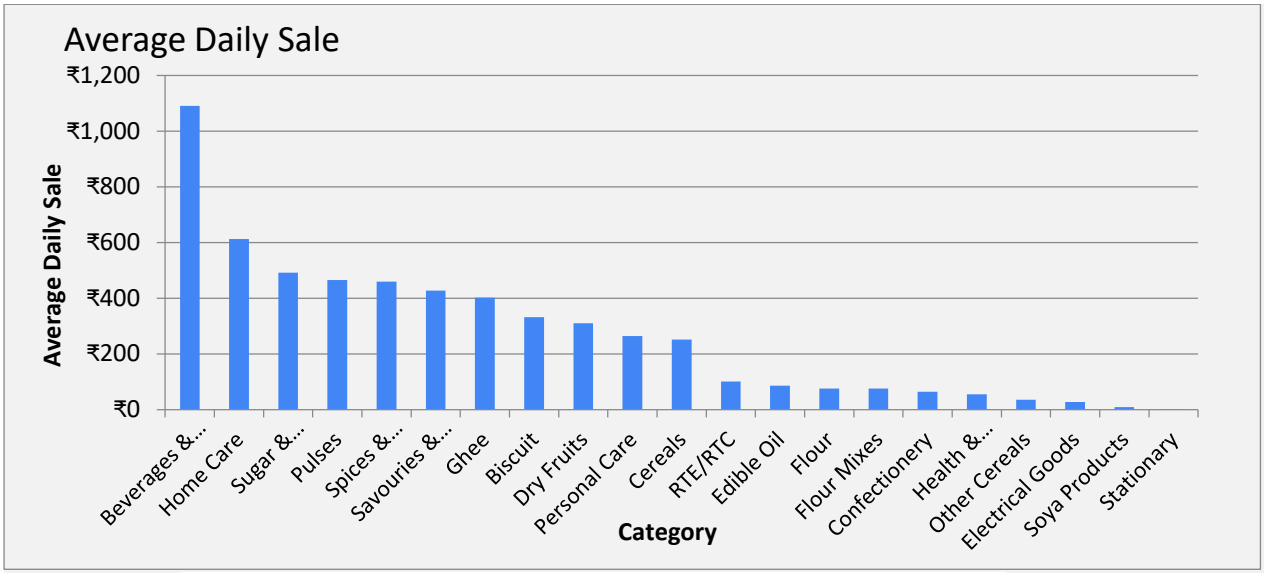

Figure 12: Column chart of Average Day of Inventory

Consider correlating the average day of inventory with average daily sales for each category to understand the relationship between inventory turnover and sales performance. Analyzing the correlation between the average day of inventory and average daily sales for each category provides valuable insights into the relationship between inventory turnover and sales performance. Here are some key findings based on graph:

- Categories such as **Sugar & Sweeteners, Pulses, Ghee** have relatively low average days of inventory but average daily sales relatively high. This suggests that strategic opportunities for further investment, promotion, or expansion due to their efficient inventory turnover and strong sales performance.
- Categories such as **Stationary, Electrical Goods, Health & Wellness** have higher average days of inventory and the lowest average daily sales. This implies that these categories may experience slower inventory turnover despite lower daily sales and a potential area for improvement in inventory management and sales strategies.

- Categories such as **Cereals, RTE/RTC** have high average days of inventory as well as high average daily sales. This suggests that although the category has efficient inventory turnover, there may be opportunities to optimize inventory levels further.

In summary, the correlation analysis provides insights into the efficiency of inventory turnover and its relationship with daily sales for each category. These findings can guide strategic decisions, operational improvements, and targeted efforts to optimize inventory management across different product categories.

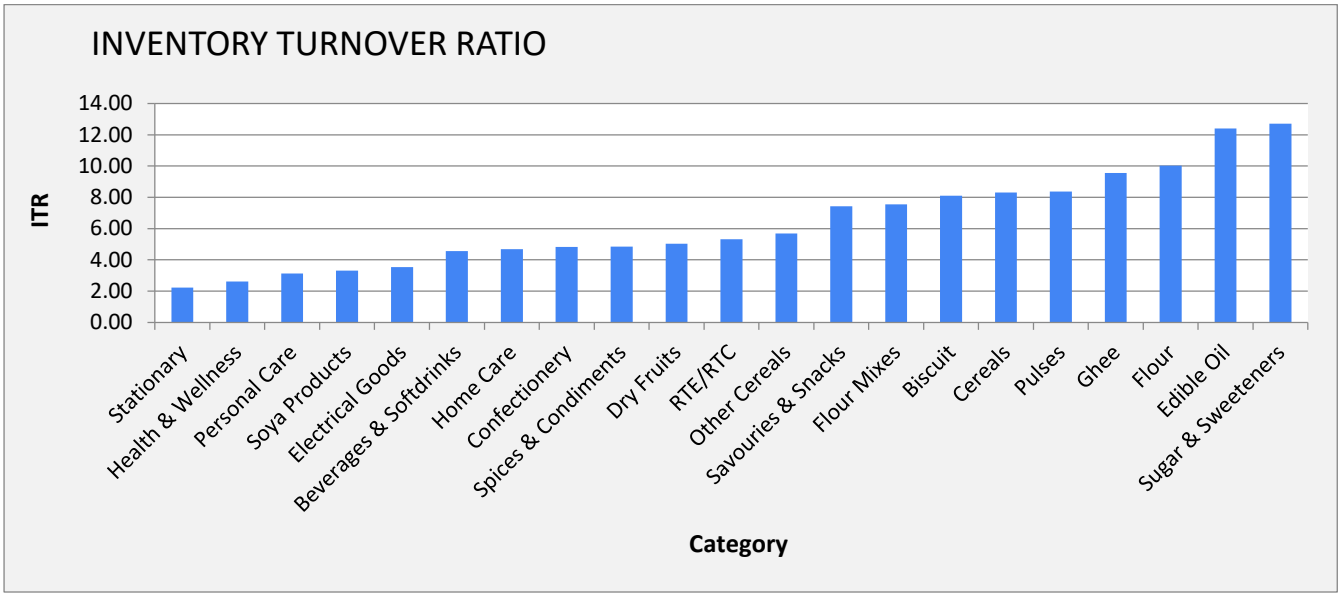

Figure 13: Column chart Inventory Turnover Ratio

Inventory Turnover Ratio - To know more about inventory, inventory turnover ratio calculated for each category and column chart created as shown in figure 13. Few key points to observe here are:

- Category such as Sugar, Edible oil, Flour, Ghee, Pluses shows High ITR, while **Stationary, Health & Wellness, Personal Care** shows low ITR.
- A high Inventory Turnover Ratio (ITR) generally reflects efficient inventory management, products under these categories sold quickly, leading to a continuous influx of cash. A very high ITR might increase the risk of stock-outs. This can lead to customer dissatisfaction and lost sales opportunities.
- A low inventory turnover ratio may raise concerns. It could imply slow-moving inventory, overstocking, or inefficient inventory management.

FSN analysis: Based on Inventory Turnover ratio or average day of inventory categories are divided into three segments: Fast-moving category, Slow-moving category, Non-moving or very slow category. Proportion of each segment shown by Pie Chart (figure 14), point observed from this charts are:

- Approximate 10% category Non-moving, also known as dead-stock, refer to inventory items that have very low or no sales activity over a specific period. These categories typically have a low demand or are outdated, and they tie up valuable storage space without contributing significantly to revenue.
- 47.6% categories come under slow moving segment. These items fall in the middle in terms of importance and value. They contribute moderately to the overall value or volume and are managed with a balanced approach.
- Fast moving segment contains 42.9% categories, verify revenue Pareto chart. These are the most important and valuable items in terms of sales or usage. Typically, a relatively small percentage of items contribute to a large percentage of the total value or volume i.e. 80-20 rule.

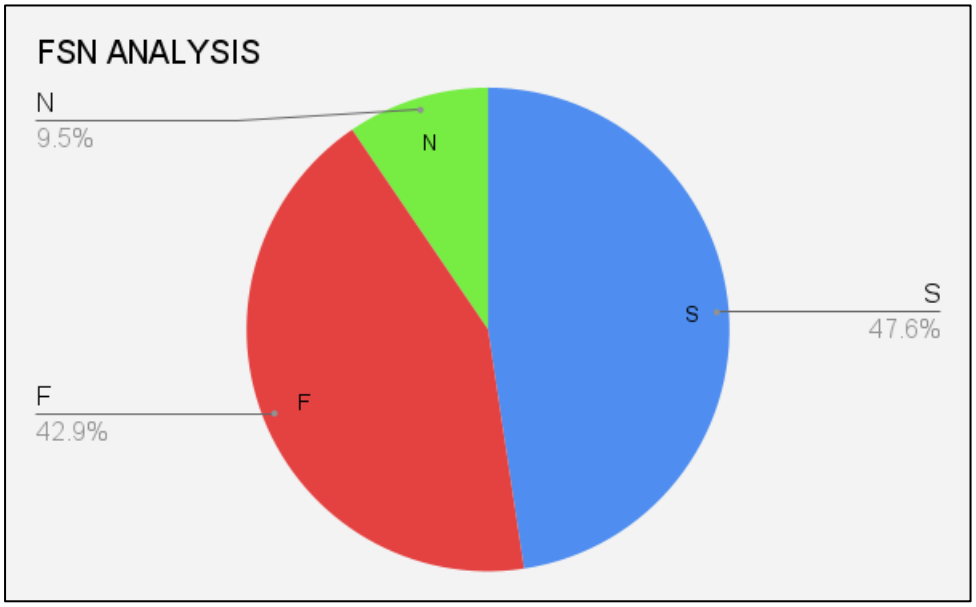

Figure 14: Pie chart for FSN data

3.6 Profit & Loss Analysis:

Gross Profit Analysis – Below Figure 15 represent Pareto chart of Gross Profit. This chart depicts 80% of gross profit generated by 40% of categories i.e. 8 categories, which is similar to Revenue Pareto chart. But contributing categories are different. It means some categories shows high gross profit but low revenue.

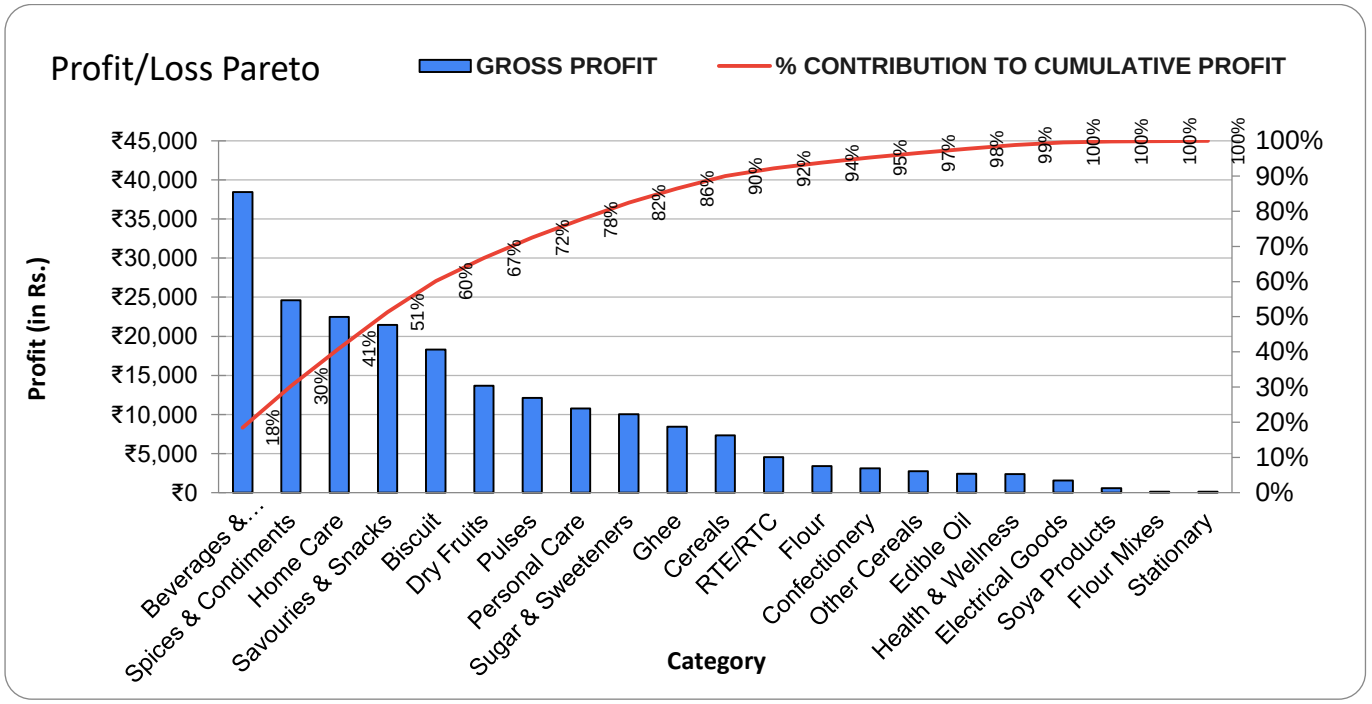

Figure 15: Pareto chart for Gross Profit

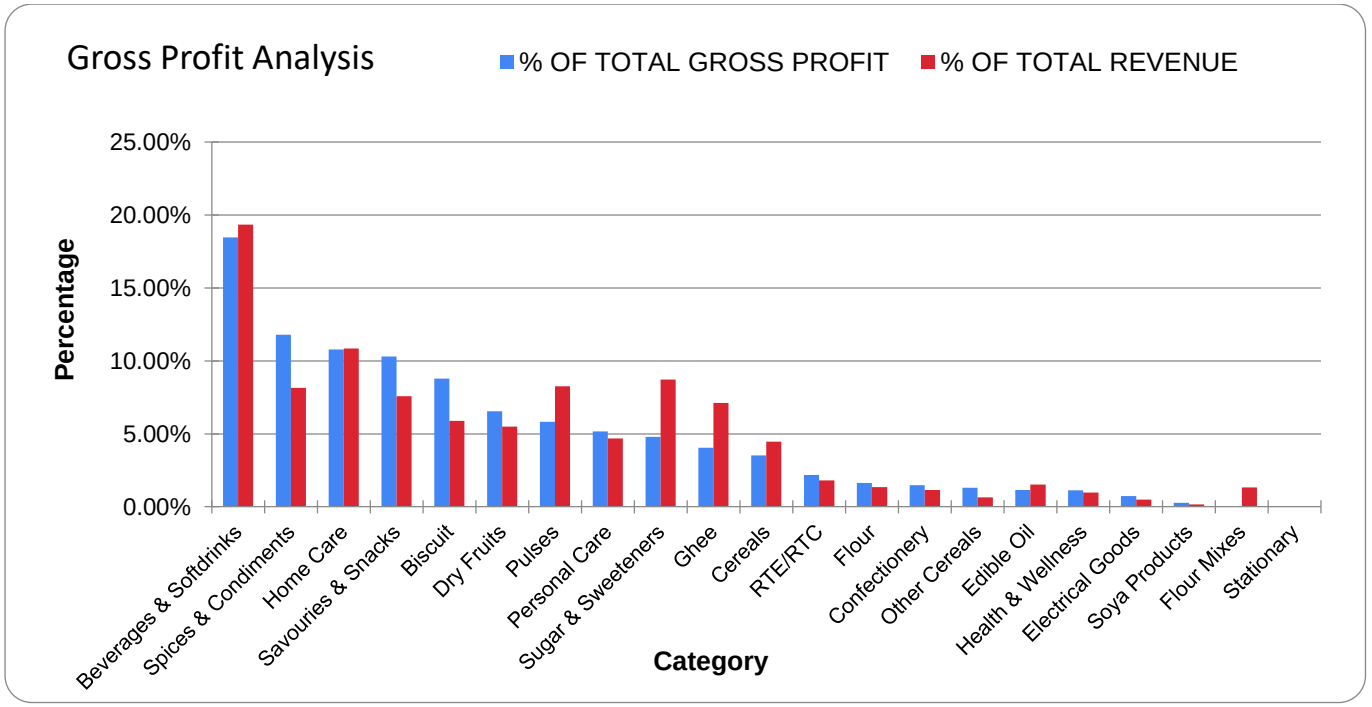

Figure 16: Clustered Column Chart of Profit Analysis

To compare those categories Clustered Column Chart created as shown in Figure 16. This chart compares % of total gross profit with % of total revenue for each category.

- The above analysis shows that **Spices – Condiments, Savouries – Snacks and Biscuits** are the categories that hold high profit generating capacity while comparing to the revenue proportion. And Categories **RTE/RTC, Flour, Confectionery, Other Cereals** shows potential to increase net profit. Sales volume need to be improved for these categories to increase its net profit.
- It also concludes that although the store is prosperous in some categories sales such as **Pulses, Sugar & Sweeteners, Ghee and Cereals** 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.

Gross Profit Margin – For In-depth information, Gross Profit Margin calculated for each category and visualize by Scatter chart of gross profit margin against revenue of each category. This graph shows 8 categories (**RTE/RTC, Flour, Confectionery, Other Cereals, Soya, Electrical, Stationary, Health & Wellness**) holds more than 10% gross profit margin but revenue is very low below ₹50,000. In which Other Cereals shows highest profit margin 20.74%. By increasing the revenue of these categories net profit can be improved. This validates above gross profit analysis.

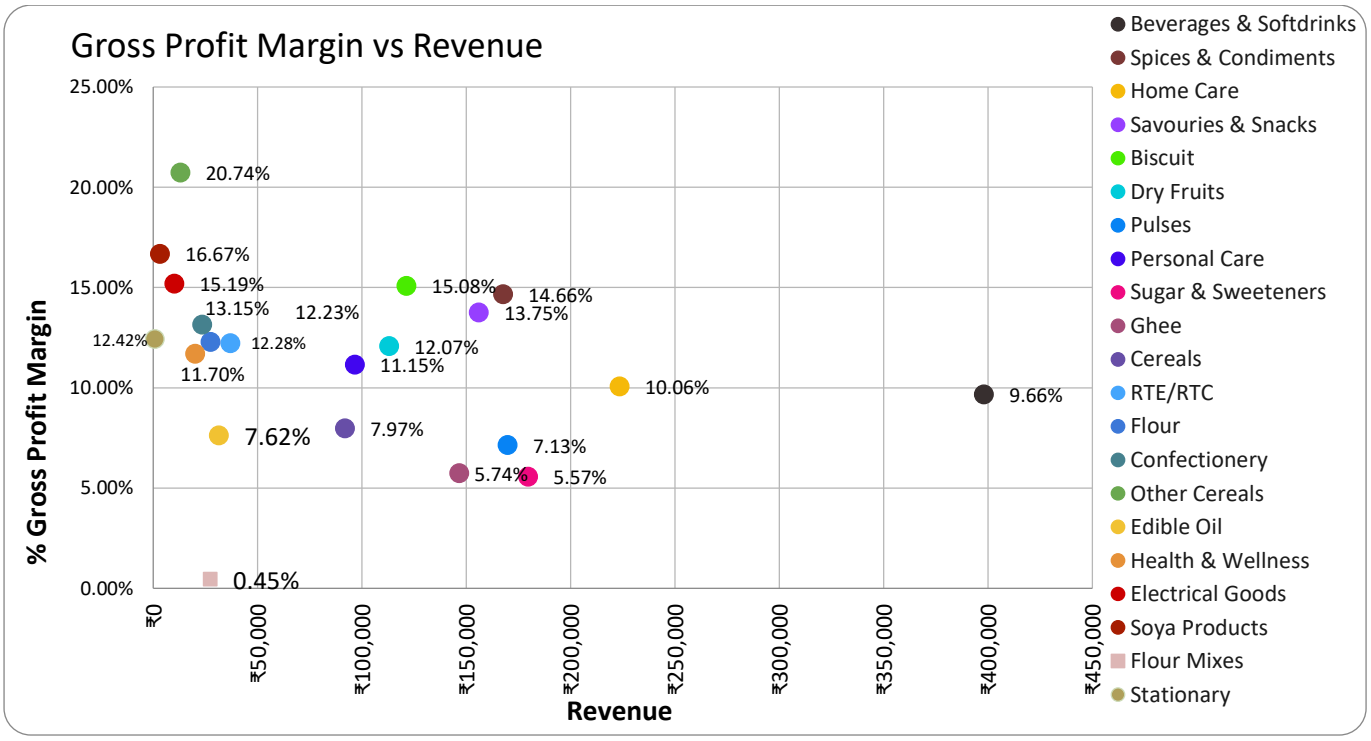

Figure 17: Scatter chart of Gross Profit Margin against Revenue

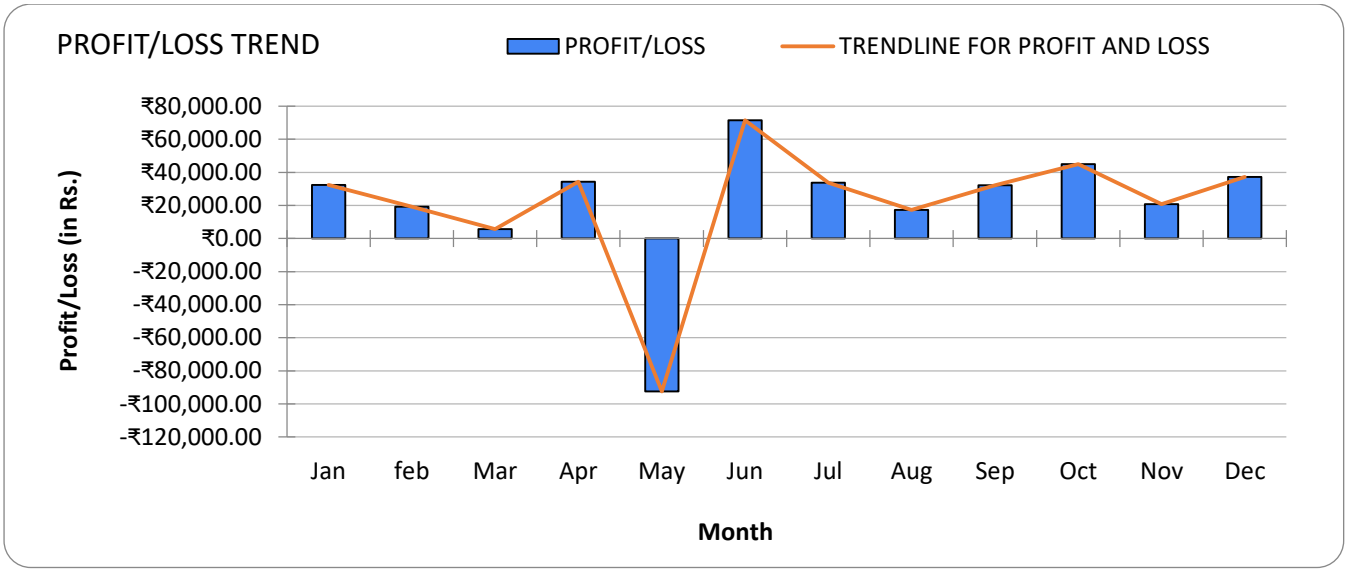

Figure 18: Profit/Loss Trend chart

From the above graph (Figure 18) our analysis about wrong purchase in month of May resulting in Net loss.

3.7 Fixed Cost Calculation:

Below table represent Fixed Cost Calculation.

	FIXED COST CALCULATION		
Elements	**COST**	**RATE OF DEPRICIATION**	**DEPRICIATION**
Interior infrastructure (fitment)	₹200,000	1%	₹2,000
Freezer	₹25,000	2%	₹500
Bike	₹50,000	1%	₹500
Petrol expense	₹1,000	100%	₹1,000
Rent	₹4,000	100%	₹4,000
Electricity	₹1,000	100%	₹1,000
Total Fixed Cost	**₹281,000**	**Monthly Fixed Cost**	**₹9,000**

4) Interpretation of Results and Recommendation

4.1 Interpretation of Results:

The comprehensive analysis of “Har-Hith Store” sales and inventory data has revealed several key insights that shed light on the business's performance and areas for improvement.

- **Sale Analysis -** Adaptive business strategies needed for both daily and monthly revenue fluctuations. Enhanced inventory management and staffing required during peak sales periods. Seasonal demand fluctuations should be considered in resource allocation and planning. Categories with high sales volume but low revenue need special attention. Strategic planning and flexibility are crucial for navigating the dynamic nature of the grocery business.
- **Inventory Analysis -** Strategic opportunities for investment or expansion in categories with efficient inventory turnover and strong sales performance. Need for improvements in inventory management and sales strategies for categories with slower turnover and lower daily sales. Importance of optimizing inventory levels further for categories with both high turnover and high daily sales. Efficient inventory turnover can lead to continuous cash influx, while low turnover may risk stock-outs and customer dissatisfaction. FSN analysis helps categorize items based on their movement, guiding resource allocation, and planning for different inventory segments.
- **Profit & Loss Analysis –**

  Strategic Focus: Categories like Spices – Condiments, Savouries – Snacks, and Biscuits should be strategically focused on due to their high profit-generating capacity.

  Improvement Strategies: Categories with potential for increased net profit, such as RTE/RTC, Flour, Confectionery, and Other Cereals, may benefit from targeted improvement strategies to boost sales volume.

  Purchase Decision Evaluation: Evaluation of categories like Pulses, Sugar & Sweeteners, Ghee, and Cereals is needed, as their significant sales volume doesn't translate into equally high gross profit, suggesting potential issues with purchase decisions.

  Revenue Enhancement: Opportunities to improve net profit by enhancing revenue in categories with high gross profit margins, particularly RTE/RTC, Flour, Confectionery, and Other Cereals.

OVERALL BALANCE SHEET OF GROCERY STORE FOR YEAR 2023

BALENCE SHEET			
VARIABLES	**VALUE**	**IDEAL VALUES**	**REMARKS**
Total Revenue	₹2,059,672	-	
Monthly Variable Cost	₹154,269	-	Expenditure on inventory
GROSS PROFIT	₹208,447	-	
Monthly Fixed Cost	₹9,000	-	MAJORLY FROM MONTHLY FIXED EXPENSES
Net profit	₹100,447	-	
Gross Profit Ratio	10.12%	12% -14%	
Net Profit Ratio	4.88%	7%-8%	NOT A GOOD NUMBER
Fixed Assets	₹225,000	-	
Current Assets	₹300,000	-	STOCK + CASH
Total Assets	₹525,000	-	
Turnover Ratio	3.92	2.5	GOOD FOR GROCERY STORE
Liabilities	₹300,000	-	
Current Ratio	1.00	1+	
Return on Capital Employed	0.45	-	ROCE=NET PROFIT/ CURRENT ASSETS

4.2 Recommendation:

- Scheduled Restocking: Rather than relying solely on demand for purchasing and selling products, a recommended strategy involves **restocking the inventory at predetermined intervals**. By categorizing items as perishable or non-perishable and considering the Store's facilities and owner's preferences, this method enables the store owner to proactively identify items for advance purchase, mitigating the risk associated with last-minute decisions.
- It is essential to maintain a **consistent stock of frequently required household items** to ensure customer satisfaction and retention.
- Create an all-encompassing strategy for optimizing inventory, focusing on slow-moving and non-moving items. Explore options such as **promotions, bundling, or cross-selling** to boost sales of these items and mitigate the risk of accumulating excess inventory.
- Increase the sales of high profit item. Instead of selling small quantities, the store owner can offer **larger quantities at discounted prices** to attract customers and other business owners. This strategy can incentivize customers to buy in bulk and increase sales volume.

- Implement a proactive protocol for handling products approaching their expiration dates. Explore collaborative arrangements with local schools or organizations to responsibly **dispose of nearer expiry items at lower than usual price**, to mitigating financial losses.
- While the store is generating healthy total revenue, there is potential for improvement in both gross and net profit ratios, suggesting a need for cost control or revenue enhancement strategies.
- Focus on optimizing costs to improve profit margins.
- Explore revenue optimization strategies to achieve a more favourable gross profit ratio.
- Consider strategies to enhance return on capital employed for improved overall financial performance.

Through the adoption of these targeted recommendations, "Har-Hith Store" can elevate inventory management, enhance customer engagement strategies, and optimize overall business performance. Incorporating data-driven insights will enable the business to make informed decisions, paving the way for sustainable growth in a competitive market environment.

4.3 Limitations:

- As a franchisee operating under Haryana Agro Industries Corporation Limited (HAICL), the Har-Hith store exclusively sources all its products from HAICL. Sometimes, the store experiences stock-outs of certain products sourced from HAICL, posing a limitation on sales performance.
- Another drawback of the store is that all products offered by HAICL come pre-packaged with barcode for POS, whereas customers often prefer certain items such as sugar, flour, rice, etc. to be available in loose quantity.

Important Links:

- ***Link of Analysis File***