# Evaluation of Inventory and Supply Management in a Retail Pharmacy

Final report for the BDM capstone Project

Submitted by-

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Declaration Statement

I am working on a Project titled "Evaluation of Inventory and Supply Management in a Retail Pharmacy". I extend my appreciation to Bhagavan Medicals, for providing the necessary resources that enabled me to conduct my project.
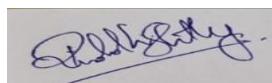
I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered from primary sources and carefully analyzed to assure its reliability.

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: Riddhi Shetty
Date: 3rd February 2026

1. Executive Summary

The Capstone project evaluates inventory management practices of Bhagavan medicals, a retail pharmacy located in Yelahanka, since 2011. The analysis is based on the sales and expiry data collected in the month of October 2025, and aims to identify the source of the expiry related losses while recommending data-driven strategies to improve inventory efficiency.

During this study, the pharmacy has generated revenue of ₹ 4,24,224.86 and has incurred expiry loss amounting to ₹ 97457.38, which accounts for 22.97% of the total revenue. This high level of loss incurred by the pharmacy indicates inefficiencies in the procurement system and stock control due to the presence of intuition-based ordering, leading to overstocking and aging inventory.

To address these issues, multiple management practices have been incorporated, including ABC analysis, FSN analysis, Economic Order Quantity (EOQ), Demand Variability Assessment, Reorder Point (ROP) and Safety Stock estimation. These analysis methods helped identify categories like Skincare (30.7%) require tighter replenishment control, while categories like Immunosuppressants are seen to have negligible contribution towards the revenue, but incur 42.5% of the total expiry losses, indicating the presence of dead stock. EOQ and ROP analysis demonstrated that these standardized practices are unsuitable for all categories as the procurement decisions have to consider demand stability, inventory movement and shelf life

The findings provide an insight that high sales performance does not necessarily lead to lower expiry losses, therefore considering only sales for procurement decisions, leads to inefficient inventory stocking. To address this an inventory risk heat map has been used to simultaneously evaluate expiry risk, revenue generation and demand stability to visually identify the categories that need higher prioritization or need to be discontinued without reliance on manual inspection.

Based on all these findings, category-wise procurement strategies recommended, including frequent small-batch ordering for high risk while items with low expiry risk can be ordered in bulk as this will reduce the ordering and holding cost and discontinuation of products that are consistently loss-making. To support this, an excel based digital inventory system has been integrated to identify demand patterns along with conditional formatting for expiry tracking with visual alerts for an efficient inventory. The proposed system is suitable for a small pharmacy, providing a transition from intuition-based decision making to a structured data driven inventory control.

2. Detailed Explanation of Analysis Process

Data Collection and Preparation for Analysis: Daily sales and Expired product details were collected directly from Bhagavan Medicals from 01-10-2025 to 30-10-2025 in the form of sales receipts and pictures of products from the pharmacy. This data was digitized and cleaned to ensure consistency and retain only relevant fields that are required for analysis. This cleaned dataset was structured to enable category-level and movement-based analysis rather that individual product-based inspection. Every item was classified into one of the 14 broad categories based on the product type, which enable to get an understanding regarding the demand pattern and inventory behavior

Understanding Sales and Demand Patterns:

Multiple inventory management techniques were used to analyze sales data and expiry data in order to evaluate demand behavior, identify fast and slow-moving items, and appropriate stock levels across product categories. The objective was to have a decision-based procurement system to determine the products that need to be frequently stocked and which should be discontinued or ordered only on demand.

2.1 <u>ABC Analysis</u>

The ABC classification technique was used to classify, each category based on their revenue contribution, examine the pareto principle (in the pharmacy 20% of products was generating 67.5% of revenue) and to get an understanding of which items need to be frequently restocked and which need strict inventory control. High value categories (Skincare) need to be restocked carefully to prevent a stockout or revenue loss, while the Low value categories (Immunosuppressants) need to be ordered on demand rather than routine stocking to reduce excess inventory and expiry losses. This approach prioritizes the management of products that have significant contribution towards the pharmacy's finance.

2.2 <u>FSN Analysis</u>

This inventory management technique was used to assess the movement of products through the inventory and identify products that generate losses due to expiry. Fast-moving items need regular restocking to prevent stockout outs, while slow and non-moving items need to be kept in strict monitoring and restricted ordering. This analysis highlights that poor management of stock increases likelihood of overstocking and financial loss.

2.3 <u>Economic Order Quantity (EOQ)</u>

Economic Order Quantity (EOQ) is used to determine optimal order quantity for different product categories. To find EOQ, the total units of category of products bought in a month was annualized(D), the Ordering Cost (S) was taken as ₹200 and the Holding Cost(H) was taken as 20% of unit cost for products across all categories

The EOQ model was applied to find the suitable order quantity for each category. High value and fast-moving items have a stable demand and continuous sales, the EOQ provides suitable replenishment quantity that prevent stockout while avoiding over-stocking that could lead to expiry losses. However, for low-value items like Baby Care and Immunosuppressants, it is seen that EOQ is not very suitable, as their demand pattern is unstable and hence it is better for them to be kept in minimal stock or ordered on demand, to ensure minimal losses due to expiry.

2.4 <u>Safety Stock and Reorder Point (ROP)</u>

Reorder point (ROP) is used to determine when replenishment should occur for products across all categories. ROP is determined based on the daily demand of each category, lead time and safety stock to ensure that essential medicines are replenished before the stock levels fall too low.

Safety stock is the buffer kept in case of any fluctuations of demand or lead time. Maintaining the stock ensures there is continuous availability of the medicines while ensuring that there is no overstocking of product. Safety stock is beneficial for fast-moving and high value items, since they are the highest revenue generating products of the pharmacy.

Overall, ROP analysis gives an insight that the fast-moving categories need to have a buffer stock since the products in these categories have stable demand pattern and high revenue significance, while the products in slow moving and non-moving categories need to be ordered on demand or have a strictly controlled ROP.

3. Results and Findings

Overview of Sales Performance:

Total Revenue generated	₹ 4,24,224.86
Total Profit generated	₹ 36,507.35
Average daily sale	₹ 14,140.83
Total Expired Loss	₹ 97,457.38
Expiry Loss as a Percentage of Revenue	22.97%

This section gives an outline of the pharmacy performance in the month of October 2025. From the quantitative analytics of sales in the pharmacy and losses incurred from the expired products in the inventory, the need for an inventory management system is essential to cut down the losses that occur due to overstocking.

The proportion of expiry loss to revenue being 22.97% highlights the inventory control challenges faced by the pharmacy. This gives the need to analyze the available data of the pharmacy based on the different management techniques, which will give an idea of the inventory stock levels, sales patterns, inventory replenishment quantities and category wise stock management.

3.1 Sales Revenue Trend (7-days Moving Average)
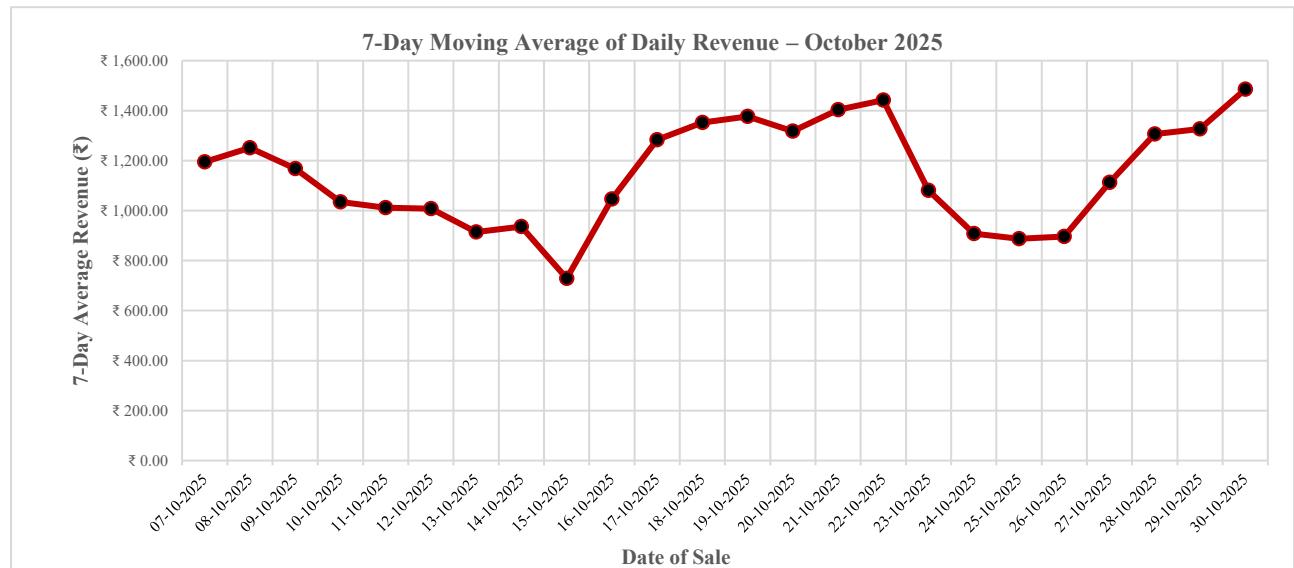
Figure 3.1: 7-Day Moving Average of Daily Revenue (October 2025)

The 7-day moving average of daily sales revenue smooths the daily fluctuations and reveals the underlying demand trend of the pharmacy in October 2025. While the short-term noise is reduced, the trend is still volatile, indicating that demand is irregular rather than stable.

This trend-based approach is better for inventory planning, as the procurement strategies can be aligned with overall demand pattern rather than day-to-day volatile fluctuations.

3.2 Category-wise Profit Distribution (Pareto Analysis)
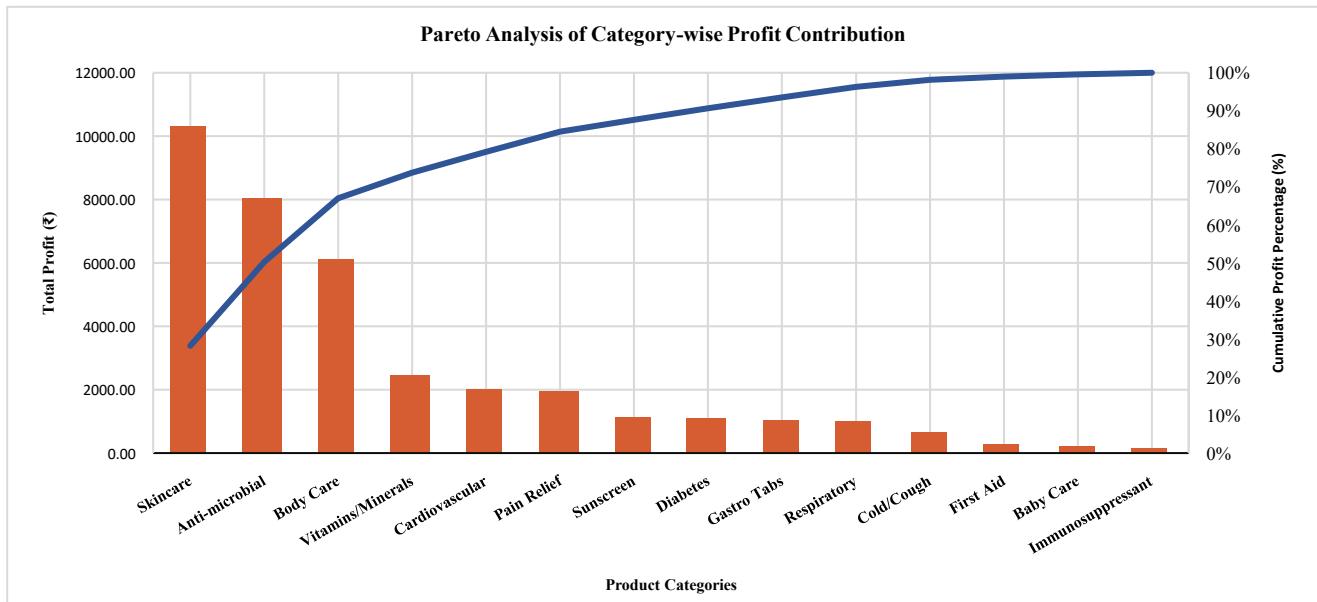
Figure 3.2 : Pareto Analysis of Category-wise Profit Contribution

This chart gives the insight that a small number of categories are responsible for generating significant revenue of the pharmacy, indicating that the financial performance of the pharmacy is dependent on a small segment of the inventory.

This uneven profit distribution implies that each category needs to be given different inventory priority, with the high value items needing stricter monitoring with controlled replenishment and the low value items should be managed with minimal inventory levels to avoid unnecessary ordering and holding costs.

3.3 ABC and FSN chart

This graph combines value-based (ABC) and movement-based (FSN) classification, which gives an overall idea about the pharmacy's inventory behavior. From the chart, products belonging to class-A are predominantly fast-moving items. These products have a stable demand pattern and significantly contribute to the pharmacy's revenue therefore, they require a strict reorder control to ensure continuous availability in the inventory.
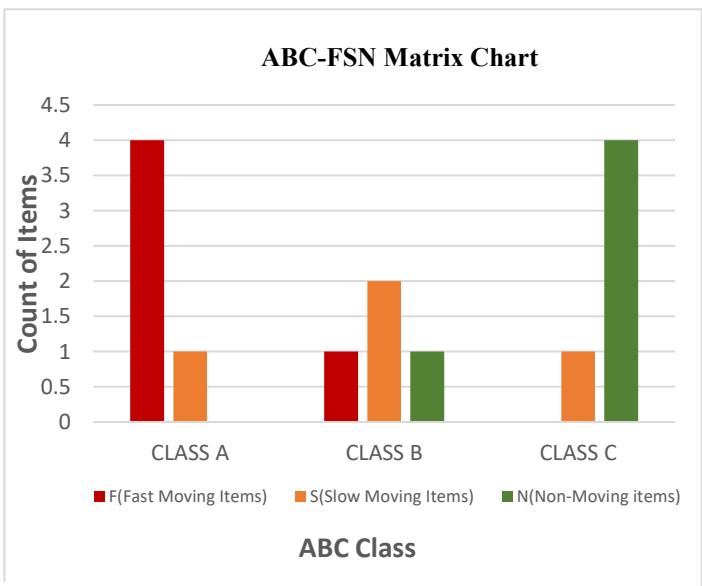

Figure 3.3: ABC–FSN Matrix Chart

In contrast, class-C products are largely non-moving items, highlighting consistent overstocking of products with weak demand. Such products need to be stocked in minimal quantities or ordered only when there is demand.

Overall, the figure indicates a mismatch between current procurement practice and actual demand patterns, particularly for Class C-N products. These intuition-based decisions have led to overstocking and expiry related losses in the inventory.

3.4 Expiry Loss Analysis
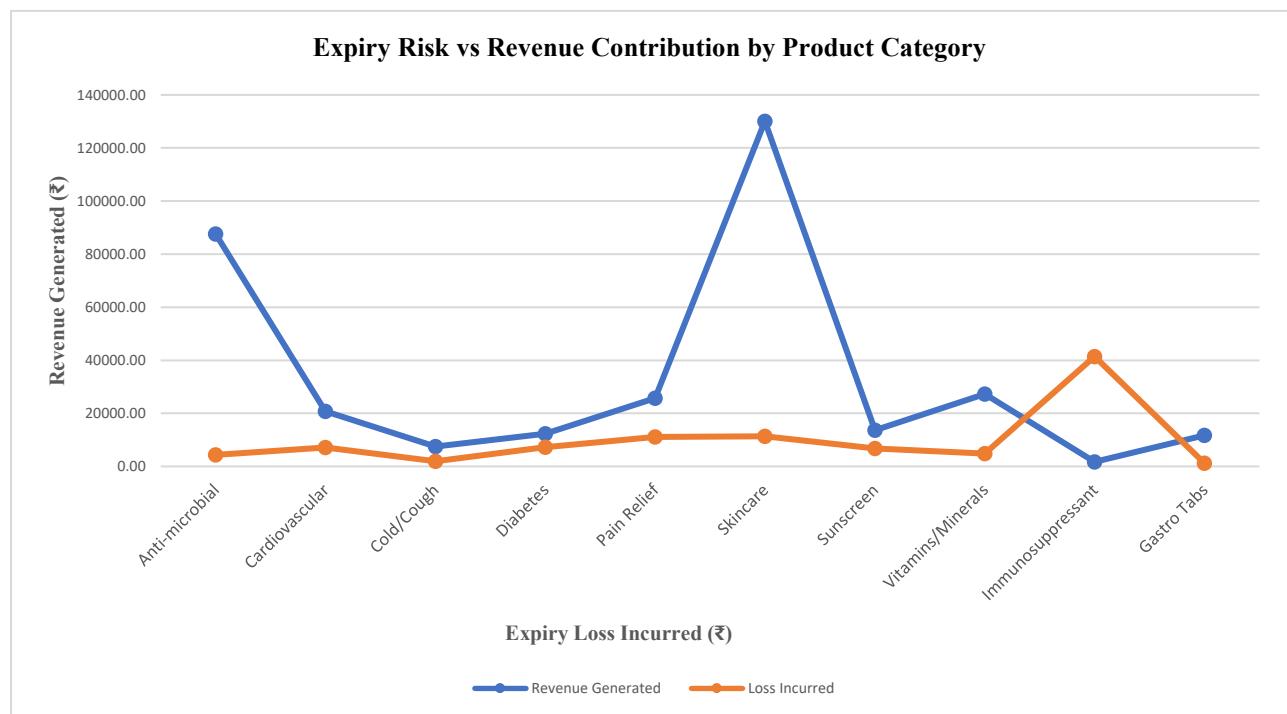
Figure 3.4 : Expiry Risk vs Revenue Contribution by Category

From this graph, the results indicate that revenue generation and expiry loss are not proportionately aligned. Categories like Skincare while contributing significantly to the revenue, also incur notable expiry losses. This demonstrates that even categories with stable demand, if overstocked can become a financial burden to the pharmacy. In contrast, categories like Immunosuppressants are seen to contribute more towards the financial loss of the pharmacy, indicating weak demand and severe overstocking. Overall, the inventory stocking cannot solely rely on the revenue generation of the categories, it needs to consider the expiry losses from each category, to ensure better profits for the pharmacy.

3.5 EOQ-Based Inventory Control Decisions

Category	ABC	FSN	EOQ Applicability
Anti-microbial	A	F	High
Baby Care	C	N	Low
Body Care	A	S	Medium
Cardiovascular	B	F	High
Cold/Cough	C	N	Low
Diabetes	B	S	Medium
First Aid	C	N	Low
Gastro Tabs	B	S	Medium
Immunosuppressant	C	N	Low
Pain Relief	A	F	High
Respiratory	C	S	Low
Skincare	A	F	High
Sunscreen	B	N	Low
Vitamins/Minerals	A	F	High

Table 3.5 : ABC–FSN Classification and EOQ Applicability by Product Category

This table presents EOQ applicability across all products based on their ABC and FSN classification and provides a clear insight that inventory control strategies should differ for each category rather than applying a uniform approach. From the conclusions arrived in the previous section, it can be deciphered that categories belonging to A-F and B-F items, EOQ is highly applicable since these show a consistent demand pattern and significant revenue contribution, which justify the bulk ordering with appropriate reorder points. Applying EOQ for these items, will minimize the holding and ordering costs, while ensuring there is continuous availability.

Whereas categories falling under A-S and B-S indicate that there is moderate demand and medium revenue contribution. In this case, EOQ is applicable but inventory of these categories needs to be checked periodically, to prevent overstocking while ensuring adequate availability of medicines.

In contrast, categories like C-N, C-S and B-N have minimal contribution towards the revenue and have weak or unpredictable demand. In this case, EOQ is not suitable as there is no pattern to predict the necessity of the medicines, it is better if these categories are discontinued or procured on demand, this reduces costs due to the unnecessary holding and ordering costs, while preventing overstocking in the inventory.

3.6 <u>Demand Variability Analysis Across Product Categories</u>
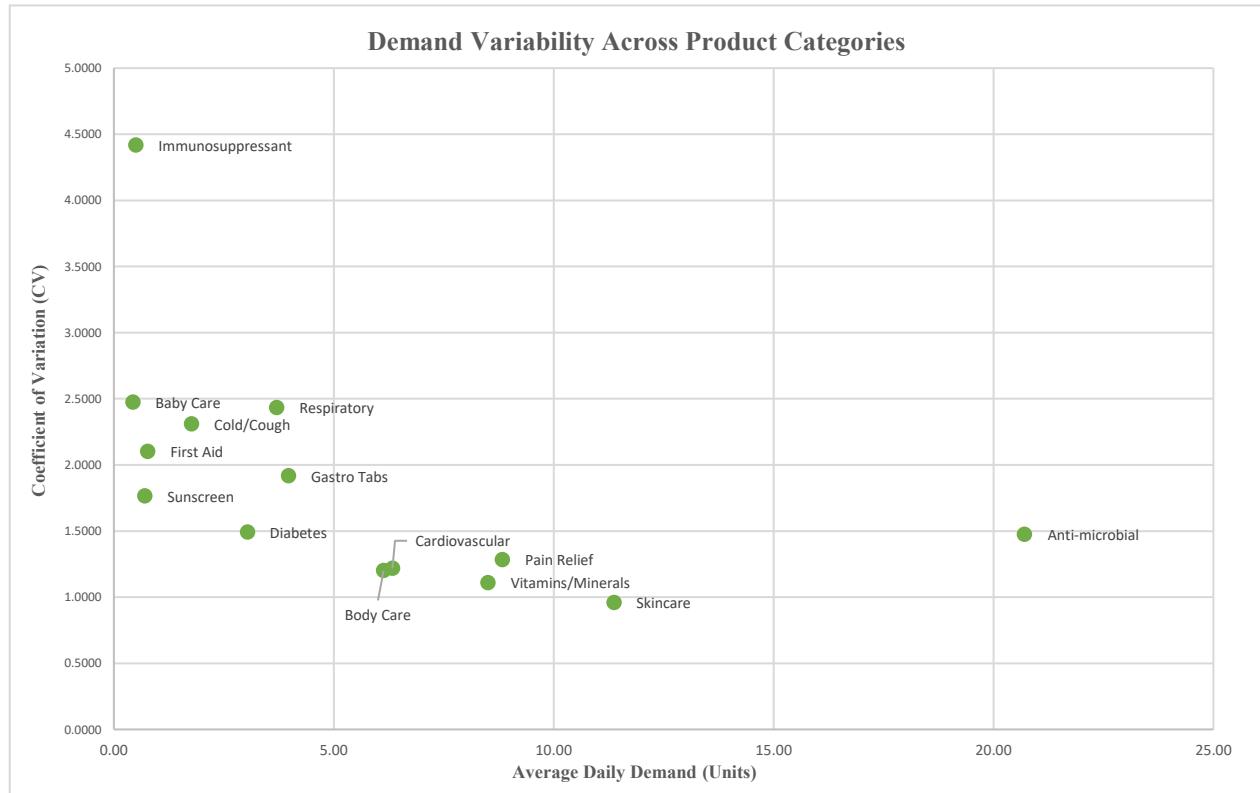
Figure 3.6 : Demand Variability Across Product Categories

The Coefficient of Variation (CV) is used to examine demand stability across various product categories by relating the standard deviation of daily quantity sold to the average quantity. Products such as Anti-microbial and Skincare show lower CV indicating stable and predictable demand pattern while having higher sales volume.

In contrast, higher CV is observed in categories like Immunosuppressants and Baby Care which have low sales volume along with unstable demand. The higher variability increases the risk of overstocking and expiry losses if ordered in bulk.

These findings highlight that the inventory decision cannot be made just using average sales volume. Categories with similar average demand could require different replenishment strategies depending on the stability and variability of sales patterns.

3.7 <u>ROP and Safety Stock</u>

Category	Daily Demand (Average)	Safety Stock	ROP
Anti-microbial	20.7	124	207
Baby Care	0.4	3	4
Body Care	6.1	37	61
Cardiovascular	6.3	38	63
Cold/Cough	1.8	11	18
Diabetes	3.0	18	30
First Aid	0.8	5	8
Gastro Tabs	4.0	24	40
Immunosuppressant	0.5	3	5
Pain Relief	8.8	53	88
Respiratory	3.7	22	37
Skincare	11.4	68	114
Sunscreen	0.7	4	7
Vitamins/Minerals	8.5	51	85

Table 3.7 : Category-wise Demand, Safety Stock, and Reorder Point (ROP)

This table presents the average daily demand, safety stock and Reorder point (ROP) for each category based on the sales pattern observed during October 2025. From the previous section, it has been observed that categories like Skincare and Anti-microbial have a higher daily demand, resulting in higher safety stock and ROP, to ensure continuous availability and prevent stockouts.

While categories like Immunosuppressants and Sunscreen show minimal demand, leading to low safety stock in the inventory and reduced reorder points. For categories with moderate demand throughout the month like Cardiovascular and Diabetes, controlled replenishment would ensure better balanced stocks in the inventory.

Overall, this analysis demonstrates that, rather than simply managing each category uniformly, ROP and safety stock should be replenished based on its demand and inventory movement to achieve efficient stock control and minimize expiry losses.

3.8 Composite Inventory Risk Assessment

Inventory Risk Heat Map

Category	Expiry Risk	Demand Stability	Revenue Importance
Anti-microbial			
Baby Care			
Body Care			
Cardiovascular			
Cold/Cough			
Diabetes			
First Aid			
Gastro Tabs			
Immunosuppressant			
Pain Relief			
Respiratory			
Skincare			
Sunscreen			
Vitamins/Minerals			

Legend:
- Green — Low
- Yellow — Moderate
- Red — High
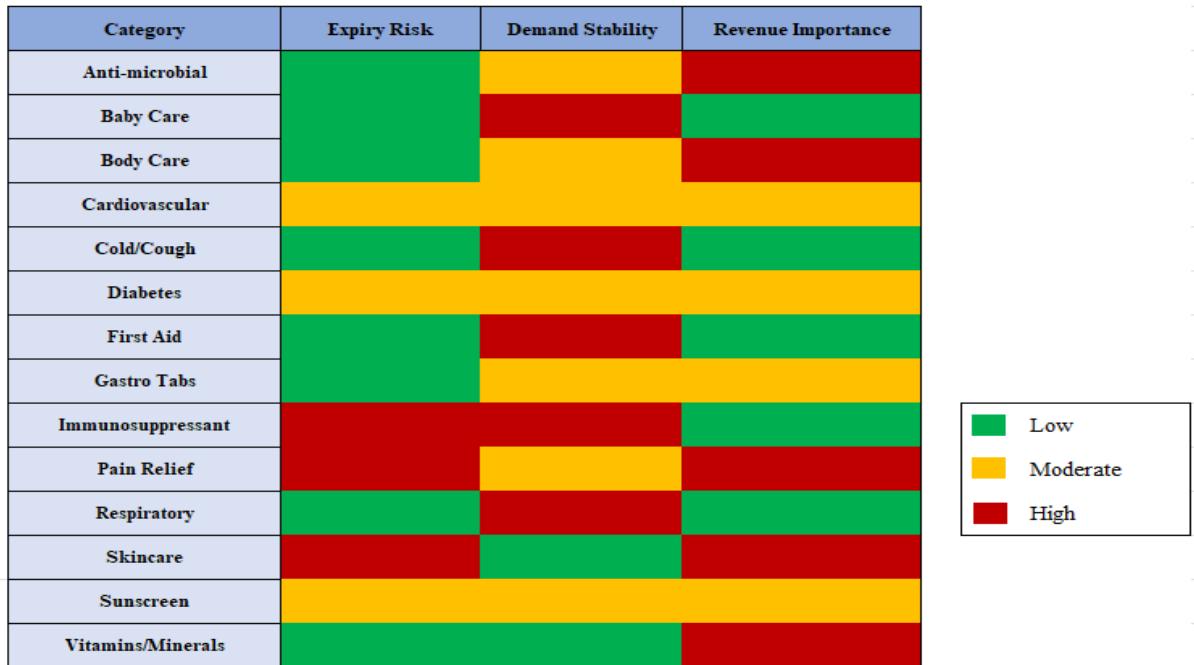
Figure 3.8 : Inventory Risk Heat Map

The inventory risk heat map provides a condensed view of the expiry risk, demand stability and revenue importance of each product category while simultaneously comparing them and providing a category-level inventory risk exposure. The color scale represents relative scales within each dimension (Expiry risk, Demand Stability and Revenue Importance) and does not imply any correlation between them (for e.g.: high revenue does not imply low expiry risk)

Categories like Immunosuppressants are seen to be high risk due to severe expiry loss, unstable demand and low revenue, while high revenue categories like Skincare, Vitamins and Anti-Microbial have stable demand and moderate to high expiry risk. Moderate risk categories like Cardiovascular, Diabetes medicines and Sunscreen are seen to have moderate demand and revenue contribution.

Visual integration of all these dimensions, summarizes inventory risk distributions across all product categories. It enables quick identification of categories that need prioritization and tighter control, without any manual inspection of sales receipts or unstructured data.

4. Interpretation of Results and Recommendation

4.1 <u>Category-wise Procurement Strategy</u>

Category	Expiry Risk	Stock Policy	Strategy Recommended
Skincare	HIGH	Small and Frequent Orders	Small batches ordered often to reduce expiry risk.
Anti-microbial	LOW	Bulk Order	Large quantity procurement for stable, low-expiry items.
Body Care	LOW	Bulk Order	Large quantity procurement for stable, low-expiry items.
Vitamins/Minerals	LOW	Bulk Order	Large quantity procurement for stable, low-expiry items.
Pain Relief	HIGH	Small and Frequent Orders	Small batches ordered often to reduce expiry risk.
Cardiovascular	MODERATE	Controlled Replenishment	Moderate ordering with regular stock review.
Sunscreen	MODERATE	Controlled Replenishment	Moderate ordering with regular stock review.
Diabetes	MODERATE	Controlled Replenishment	Moderate ordering with regular stock review.
Gastro Tabs	LOW	Controlled Replenishment	Moderate ordering with regular stock review.
Respiratory	LOW	Order on Demand	Procure only when demand arises.
Cold/Cough	LOW	Order on Demand	Procure only when demand arises.
First Aid	LOW	Order on Demand	Procure only when demand arises.
Baby Care	LOW	Order on Demand	Procure only when demand arises.
Immunosuppressant	HIGH	Discontinued	Stop regular stocking due to persistent losses.

Table 4.1 : Expiry Risk Assessment and Inventory Strategy Recommendations

The primary problem identified in Bhagavan medicals was unstructured data and inability to identify strategies that could reduce the expiry losses. After structuring the sales data, identifying demand patterns and inventory movement, while considering the expiry risk, procurement strategies have been recommended for each category.

In categories like Skincare which contribute significantly to revenue but have HIGH expiry risk, require frequent replenishments in small quantities, to balance continuous availability with loss reduction. Categories with stable demand and LOW expiry risk such as Anti-Microbial and Body Care, bulk ordering is recommended, as it is overall a safe product and this strategy would reduce ordering cost.

Cold/Cough and Baby Care are categories which have minimal demand and are usually slow/non-moving items, should be managed through procurement on demand or a baseline inventory (for similar categories where expiry risk is low). Categories like Immunosuppressant which incur significant expiry losses and negligible revenue could be suggested to be discontinued.

Overall, the recommended procurement strategies, aim to ensure that the inventory has continuous availability of all medicines while preventing overstocking and expiry losses as much as possible.

4.2 <u>Expiry Loss Reduction</u>

Analysis of expiry losses in Bhagavan Medicals indicates that the expiry losses are a significant portion of 23% (22.97% is exact) of the revenue, indicating intuition-based procurement decisions for inventory control, which has led to losses in the pharmacy. Demand based decisions for purchasing of items from each category, reduces the chances of overstocking, likelihood of slow inventory movement leading to expiry losses.

- Controlled ordering of high-risk categories

Categories which generate high revenue but have high expiry risk, need to be reviewed in regular cycles and procured in a small batch, but frequent order cycles, rather than bulk shipment. This ensures that the products are continuously available and minimizes the expiry of products before sale.

- Discontinuation of Dead Stock

Products belonging to categories like Immunosuppressants are a liability to the pharmacy as they generate the highest losses to the pharmacy, while contributing to almost no revenue. Such products are noticed to have almost no demand in that area, hence is better not stocked in the

inventory or ordered only when there is a confirmed prescription. This reduces the holding and ordering cost also prevents expiry losses.

- Review Cycles and Procurement Decisions

Inventory review and procurement process needs to be based on different priorities for each category rather than having a uniform check for all categories. Review efforts need to be prioritized towards the financially significant categories like Skincare and Anti-microbials so that overstocking can be minimized while ensuring that there is no shortage of the same. Also, procurement decision can be made using the 7-day moving average which gives an understanding about the demand of each category. Aligning the purchase orders with the demand patterns reduces the storage time of products in the inventory, while ensuring the expiry risk is minimized while maintaining the adequate stock and inventory efficiency.

4.3 Improving Inventory Control Using Excel

Bhagavan Medicals Inventory

Item ID	Item Name	Category	Quantity	Supplier	Cost Price	Selling Price	Expiry Date	Number of Days to expire	ABC_Class	FSN_Class
I001	4U-Q10 Plus Cap	Vitamins/Minerals	66	RSM Pharma	₹373.22	₹410.54	January 2027	335	A	F
I002	AB Next Gel	Pain Relief	95	RSM Pharma	₹332.23	₹365.45	February 2027	366	A	F
I003	Accu Chek	Respiratory	37	RSM Pharma	₹807.16	₹887.88	April 2026	60	C	S
I004	Acne UV Gel	Sunscreen	100	RSM Pharma	₹600.93	₹661.02	January 2027	335	B	N
I005	Acnewin Face Wash	Skincare	66	Mahaveer Medi Sales	₹155.87	₹171.46	June 2028	852	A	F
I213	Xaliderm Solution	Immunosuppresant	87	-	-	₹299.00	September 2025	-152	C	N
I007	Alerid Syrup	Anti-microbial	33	RSM Pharma	₹29.23	₹32.15	May 2028	821	A	F
I008	Allegra 180MG Tab	Anti-microbial	88	RSM Pharma	₹196.50	₹216.15	May 2027	455	A	F
I194	Terbinaforce 500	Anti-microbial	50	-	-	₹184.47	July 2025	-214	A	F
I010	Amorolkite Cream	Anti-microbial	94	Pride Pharma	₹374.00	₹411.40	December 2026	304	A	F
I011	Aquahance Mois Soap	Skincare	56	Tulsi Corporation	₹169.49	₹186.44	April 2025	-305	A	F
I012	Aquahance Moisture	Skincare	25	Ram Agencies	₹169.49	₹186.44	February 2026	1	A	F
I013	Ascoril SF Syrup	Cold/Cough	99	Ram Agencies	₹109.42	₹120.36	May 2027	455	C	N
I014	Asthalin 4MG Tabs	Respiratory	84	Ram Agencies	₹198.79	₹218.67	April 2027	425	C	S
I015	Aten 50MG Tab	Cardiovascular	83	Ram Agencies	₹24.38	₹26.82	May 2028	821	B	F
I016	Atogla Lotion	Skincare	41	Ram Agencies	₹391.37	₹430.51	April 2026	84	A	F
I017	Atogla Skin Lotion	Skincare	84	Tulsi Corporation	₹391.37	₹430.51	April 2027	425	A	F
I018	Atorva Gold 10MG Cap	Cardiovascular	86	Ram Agencies	₹45.17	₹49.69	April 2027	425	B	F
I193	Tenolol 50MG	Cardiovascular	37	-	-	₹35.00	December 2026	304	B	F
I020	Azee 500 Tabs	Anti-microbial	81	Mahaveer Medi Sales	₹87.19	₹95.91	December 2026	304	A	F
I021	Aziderm Plus Cream	Skincare	53	Ram Agencies	₹225.97	₹248.57	April 2025	-305	A	F
I022	Azithral 500mg Tab	Anti-microbial	80	Ram Agencies	₹87.19	₹95.91	March 2026	38	A	F
I023	Bandy Plus Tab	Anti-microbial	98	Ram Agencies	₹21.98	₹24.18	January 2028	700	A	F

Figure 4.3 : Inventory Master Data with Expiry and Movement Classification

Link:

https://1drv.ms/x/c/ae6818def4d35aa2/IQBfp0jdtCD3SYNwE3Ogs343ATpbLaYJzGofXwxSXD3CPBY?e=oNNZT3

The above figure is an Excel management system which provides data regarding the inventory of Bhagavan Medicals. It includes information, unique Item ID, Item name, Category, Quantity available, Supplier, Cost and Selling Price, Expiry Date, Number of days to expire, ABC and FSN classification. The structured format replaces the manual records with systematic inventory status.

The system dynamically calculates the shelf life of each item using the current date and expiry date and uses conditional formatting to visually highlight the expiry risk. Items with more than 100 days are treated as low risk, while products having shelf life of 60 to 100 days are closely monitored. While products having exactly 60 days are flagged, as these items if returned to seller, 50% of the amount will be refunded. But the products having lesser that 60 days have a significantly higher risk of expiry losses. Such categories need to be sold if possible and replenishment must be restricted. Products with negative values are expired and need to be discarded from the inventory. The conditional formatting enables identification and timely management which minimizes the losses due to expiry.

This approach allows the pharmacy to focus of improving the sales effort, while restricting the replenishment of high-risk items and also identify the categories which lead to unavoidable losses. Inventory control reduces reliance on manual inspection, while using expiry dates to assess the risk and take necessary action to improve the pharmacy's revenue.

4.4 <u>Impact of Inventory Control on Pharmacy</u>

This study adopts a data-driven decision-making approach, to have a positive impact on the pharmacy's revenue, while reducing the expiry losses and simplifying the day-to-day inventory management. The transition from a manual system to a structured excel system provides a better insight into the demand pattern, stock movement and expiry losses of the inventory.

The application of ABC and FSN classification enables prioritization of high value and fast-moving items which are financially significant categories of the pharmacy, ensuring availability of essential medicine, while restricting replenishment of slow and non-moving stocks in the inventory. The use of EOQ, ROP and safety stock management practices ensures that the procurement of medicines is based on consumption pattern rather than intuition-based decisions.

The primary operational challenge identified in the pharmacy, losses due to expiry, can be significantly reduced through early identification of high-risk categories and appropriate measures for stock control. The expiry control mechanism, enables corrective measures like

procurement restriction, order review cycles, consumption-based restocking and discontinuation of consistent loss-making products.

This proposed system, reduces dependencies on manual checks and allows the pharmacy owner to get an overall insight of the sales and inventory data, which is well suited for local retail pharmacies. Overall, this structured system enhances the pharmacy's efficiency, management practices and strengthens financial stability.

4.5 <u>Limitations of the Study</u>

While the findings of this study provide meaningful impacts, there are certain limitations that need to be considered.

The data is collected over the duration of only a month, which restricts the ability to find long term and seasonal variations in inventory movement which is commonly observed in pharmacy sales.

Additionally, the data has been collected from manually generated sales receipts and physical record, although the data was digitized and cleaned for analysis, there might be minor inconsistencies, due to absence of a point on sale system, which restricts real time accuracy.

The proposed Excel system provides structured monitoring and decision-making insights, but does not enable real time automation or system driven alerts. These limitations highlight opportunities for future scope with longer data collection periods and automated systems.