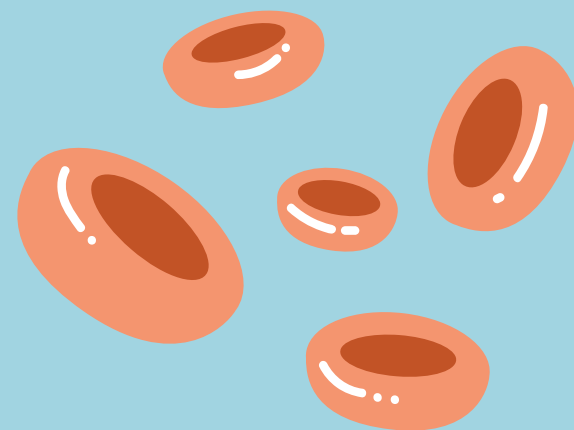


STRENGTHENING INVENTORY RESILIENCE: BY ENHANCING SUPPLIER DYNAMICS AND SALES VOLATILITY IN PHARMACY RETAIL



report by:
Sivakumar P
21f3001256@ds.study.iitm.ac.in

Organizational Background

- * Shree Chendur Medical Center is a trusted retail pharmacy and healthcare clinic located in Srirangam, Tiruchirappalli.
- * Owned by pharmacist Prasanna Venkatesan, the center offers diabetes care, general consultations, and prescriptions with support from Dr. Meena and a nurse.
- * The clinic provides prescription fulfillment, over-the-counter medications, chronic disease counseling, and routine check-ups.



Challenges Faced By Medical Center

1

Limited Vision into Profit/Sales

The pharmacy lacks clear insights into the profitability of individual products/suppliers, impacting informed decision-making.

identify key profit-driving suppliers and products, reduce risk, and improve decision-making through clear, data-driven insights.

2

Concentration Risk in Supplier

The pharmacy depends significantly on a limited number of suppliers, increasing the risk of supply chain disruptions.

Purchase data was analyzed to identify over-reliance on a few key suppliers.
This insight supports diversifying procurement to reduce disruption risk.

3

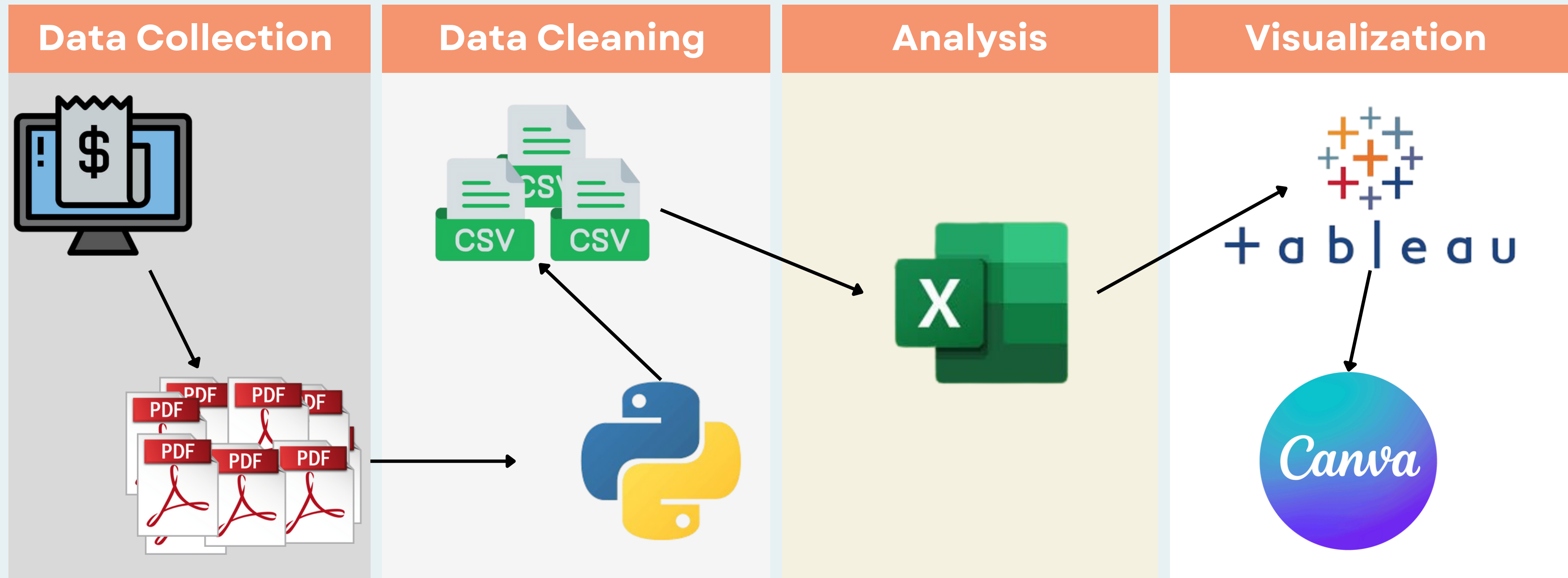
Inventory Planning Gaps

The pharmacy experiences frequent stockouts of key products, indicating challenges with inventory planning adequacy.

Weekly sales trends were captured to understand daily performance patterns.
Product and supplier contributions were then analyzed

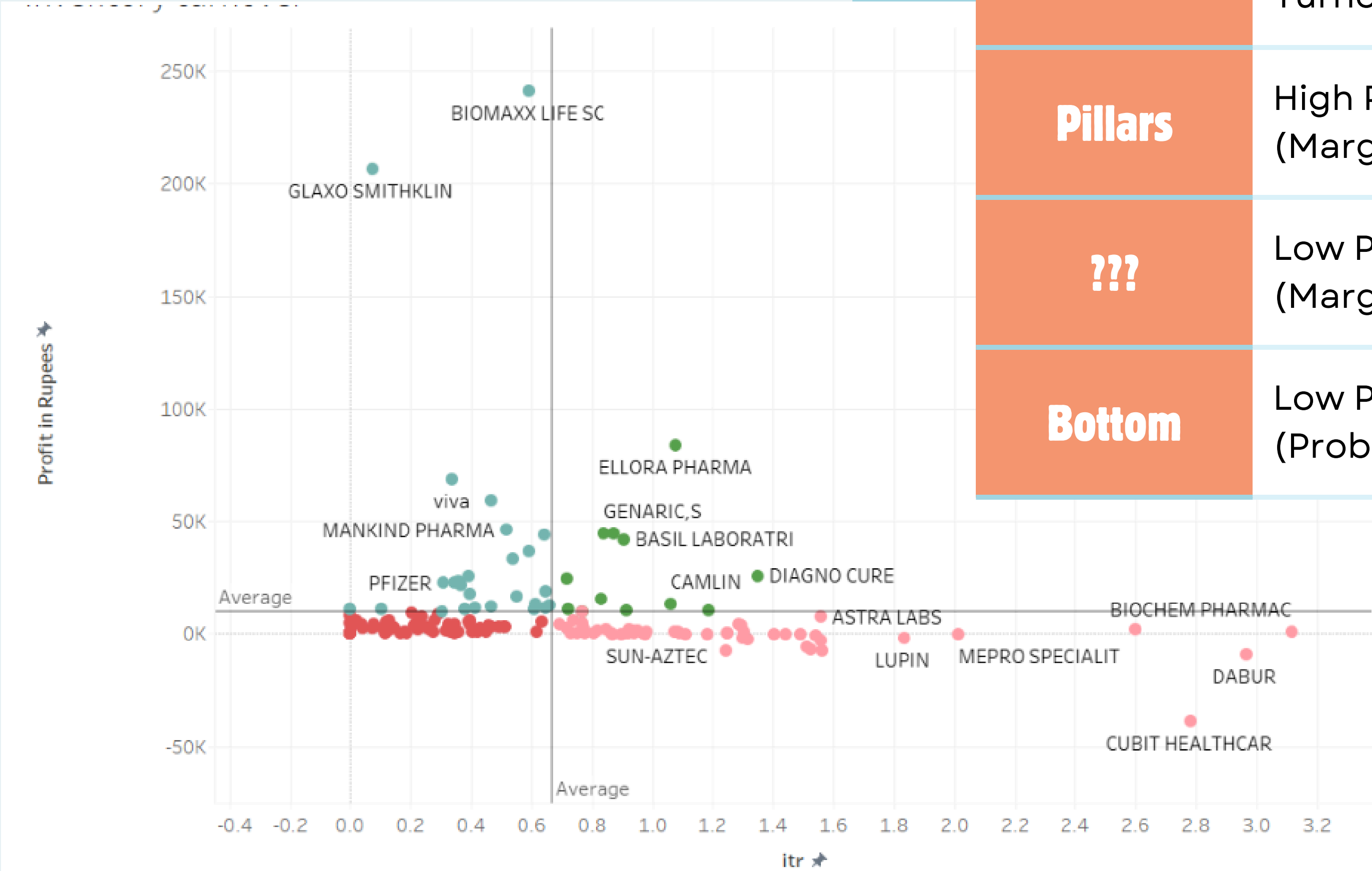
Process

In the rhythm of retail, I find patterns—one row, one script, one solution at a time.



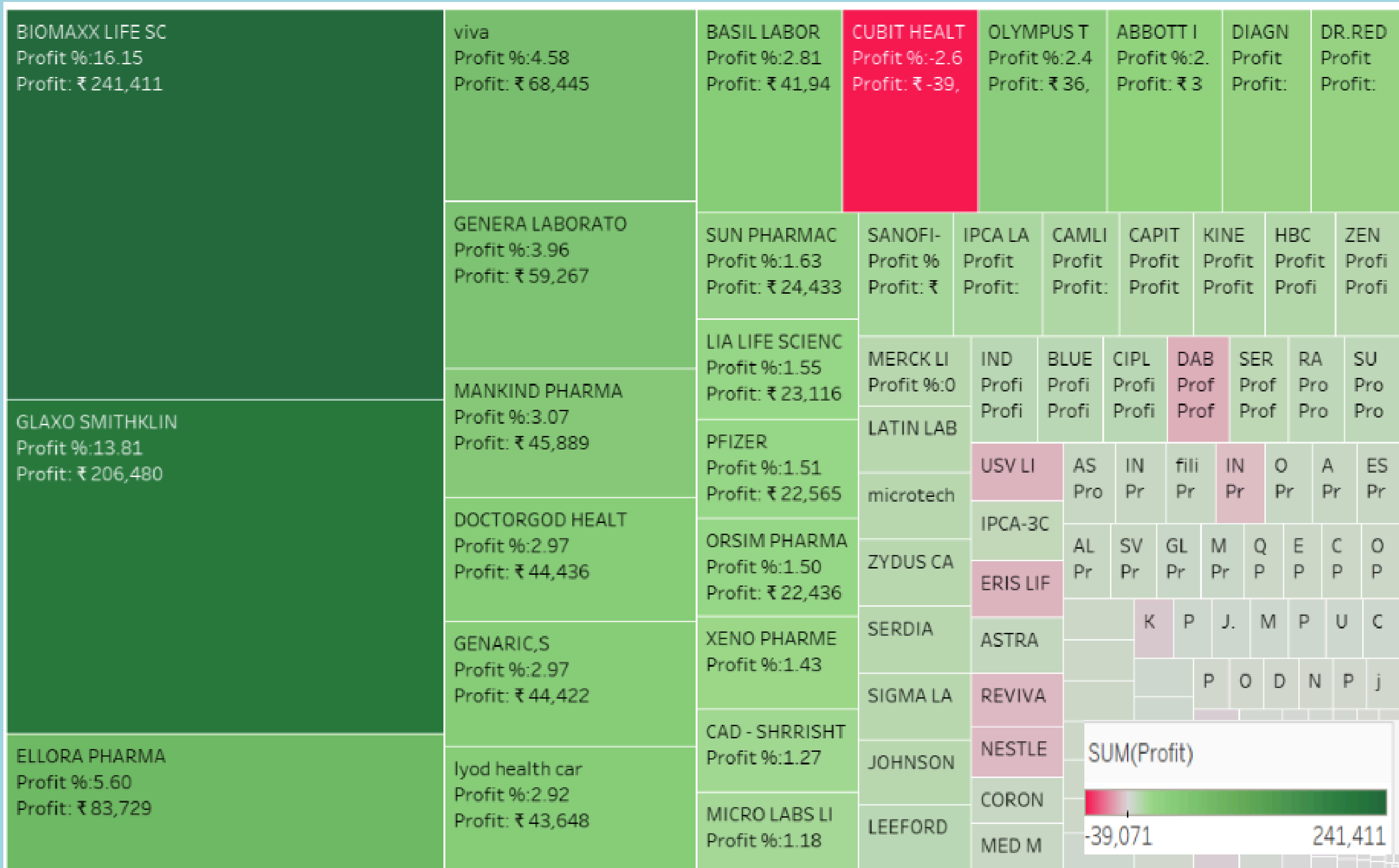
Itr vs Profit based company Recommendation

Stars	High Profit, High Turnover (Ideal)
Pillars	High Profit, Low Turnover (Margin Strong)
???	Low Profit, High Turnover (Margin Weak)
Bottom	Low Profit, Low Turnover (Problematic)



[data link](#)

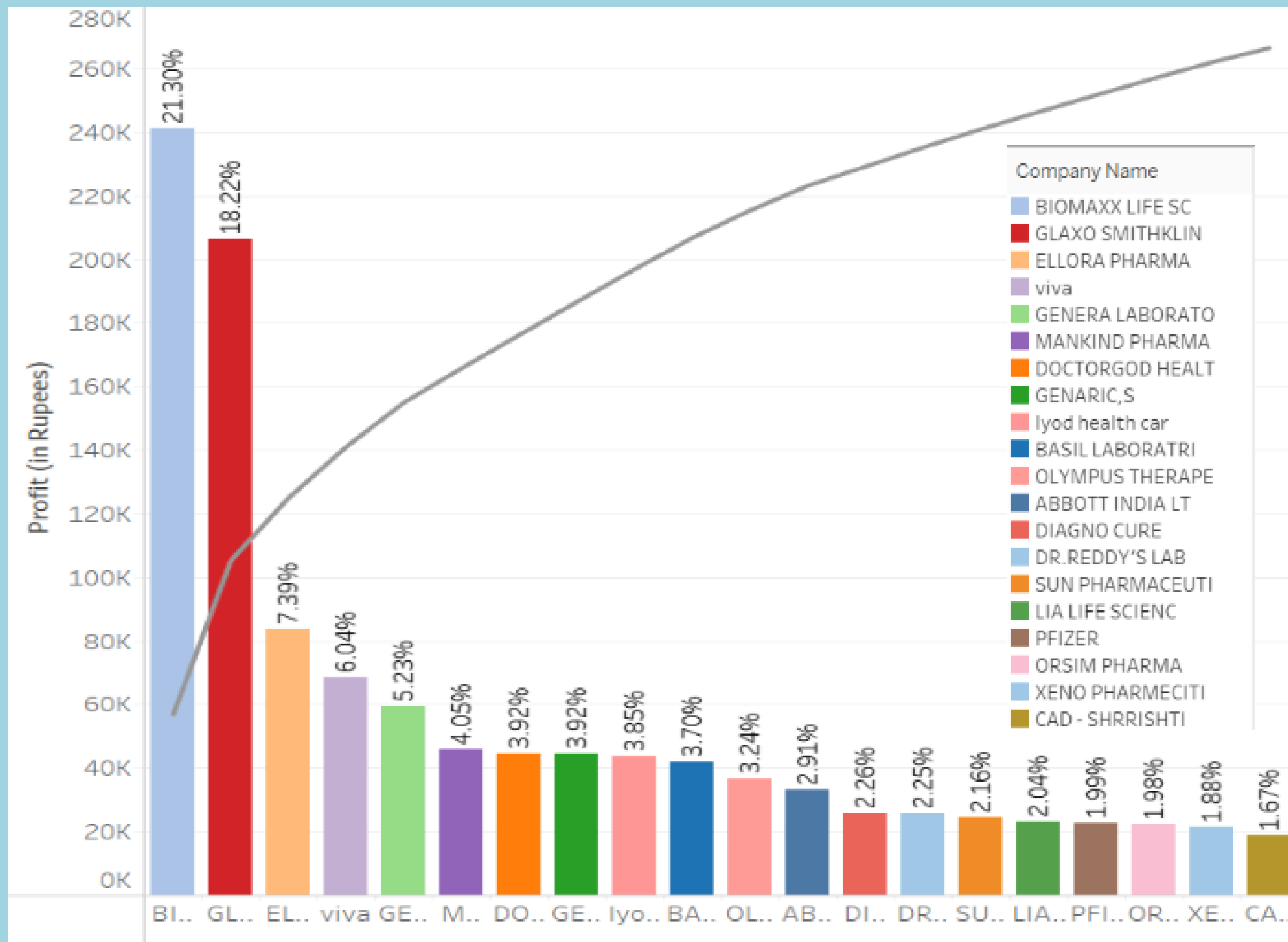
Highlighted Profit visualization



1

- Top Profit Drivers
- Significant Loss Drivers
- Profit Concentration
- Pareto Principle Evident
- Mid-Tier & Minimal Contributors

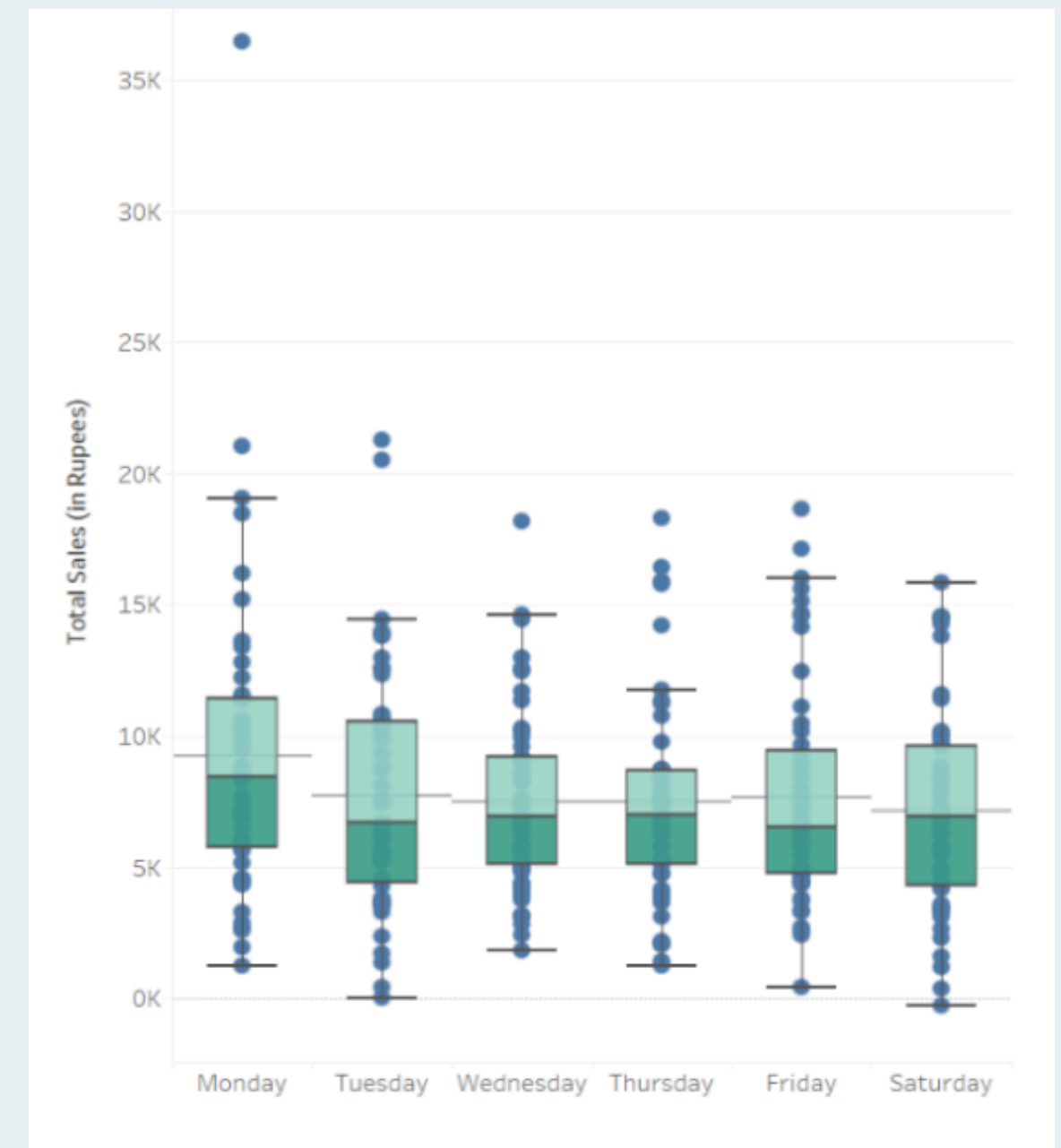
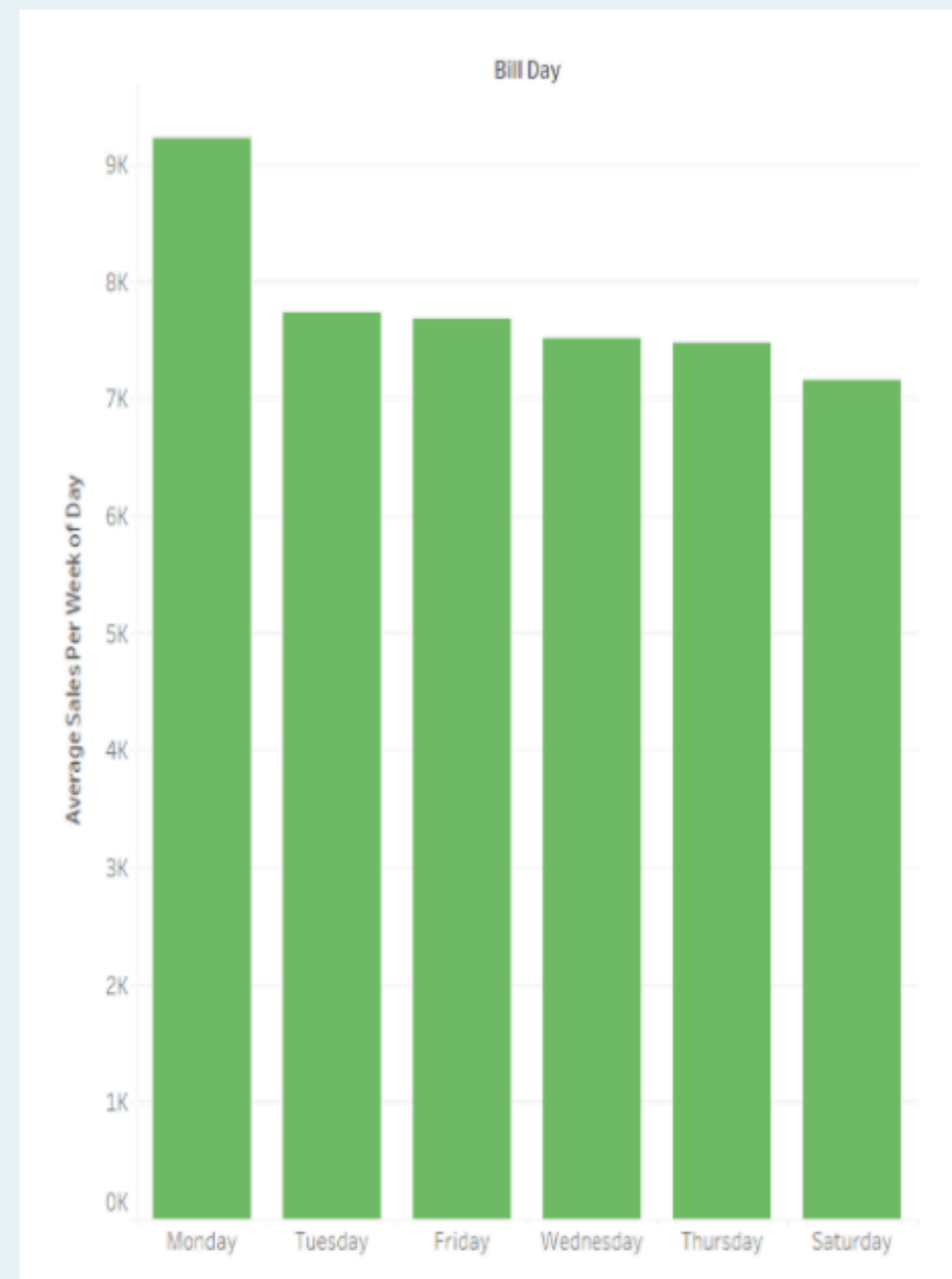
Dependency and Company Contribution



Pareto Principle

A comprehensive assessment of company profit performance reveals a significant insight using the Pareto principle: a mere 11 companies drive approximately 80% of total profit. This indicates supplier dependency.

Weekly sales statistics



The bar chart highlights that Monday consistently sees the highest average sales, while Saturday has the lowest. The box plot complements this by showing the averages of each day of week

Future Strategic Considerations

1. Supplier Risk Mitigation & Diversification

Strengthening relationships with top suppliers like Biomaxx and Glaxo, while diversifying to mid-tier suppliers such as Meenakshi Pharma, will reduce dependency risks and build a more resilient supply chain, ensuring consistent stock availability.

2. Focused Product & Supplier Strategies

For products like Ellora and Basil (high profit, high turnover), maintain efficient replenishment. For suppliers like Glaxo and Biomaxx (high profit, low turnover), prioritize supply reliability and margin protection. For items with low profit but high turnover (e.g., Lupin), focus on cost control and pricing adjustments. Products with low profit and low turnover should be reassessed for potential delisting or replacement.

Links and References

Raw Data	<u>link</u>
Clean Data	<u>link</u>
Cleaner Python	<u>Link</u>
Proposal Document	<u>Link</u>
Midterm Document	<u>link</u>
Final Document	<u>Link</u>