

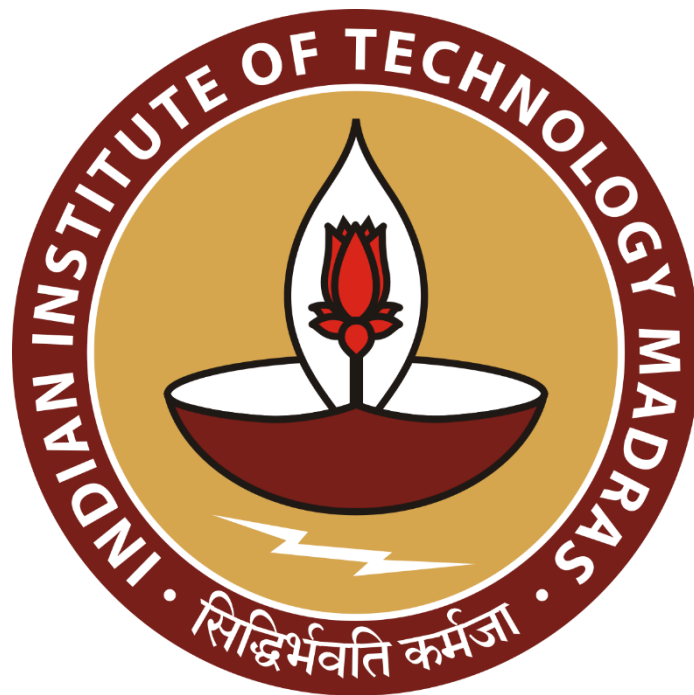
# Enhancing Sales Performance and Maximizing Market Share by Strategic Sales Analysis

Final Report BDM capstone Project

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## **1 Executive Summary and Title (200 Words)**

To enhance sales and profitability for The Bombay Medical Store, I initiated a comprehensive data-driven project aimed at optimizing product performance and improving customer segmentation. Recognizing the importance of strategic decision-making, I employed advanced analytical techniques such as Pareto Analysis to uncover valuable insights that could inform business strategies.

The process began with the challenging task of data cleaning and organization, as the dataset was initially unstructured and poorly organized. This required meticulous effort to sort through the data, standardize formats, and ensure accuracy, which established a solid foundation for further analysis.

Following the data preparation, I conducted a Pareto Analysis, which revealed that a small percentage of products accounted for a significant portion of the company's revenue. Key products, including BUDECART RESP.5, DUOLIN 3 RESPULES, and GLYCOHALE RESPULES 25MCG, emerged as top contributors to sales, underscoring their crucial role in financial performance. This insight highlighted opportunities to diversify sales by concentrating on these high-impact products.

Additionally, customer segmentation analysis identified high-value buyers, such as SHIVAM MEDICAL STORE and PIHU MEDICAL STORE. Understanding their buying patterns allowed us to tailor marketing strategies to meet their needs, ensuring alignment with their preferences.

Based on these insights, I recommended prioritizing top-performing products for targeted promotions to maximize sales and profitability. Furthermore, I proposed personalized marketing campaigns to engage high-value customers and foster brand loyalty. These data-driven strategies are designed to drive accelerated sales growth, increase profitability, and establish a sustained competitive advantage for The Bombay Medical Store in the marketplace.

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

The analysis of The Bombay Medical Store's sales data encompassed several critical steps, starting with data cleaning and organization, followed by the application of advanced analytical techniques to gain insights into product performance and customer segmentation.

## **1. Data Cleaning and Organization:**

The process of cleaning and organizing the company's sales data was crucial in converting disorganized and scattered information into a structured and actionable resource. This transformation laid the groundwork for insightful analysis and informed decision-making.

During the data cleaning phase, meticulous effort was made to identify and correct issues that could undermine the accuracy and reliability of the data. This included handling missing values by either imputing them with relevant data or removing incomplete records entirely. Duplicate entries were eliminated to ensure that each data point was unique, preventing skewed analytical results. Additionally, inconsistencies in data formats, such as variations in date representations or differing product naming conventions, were standardized to achieve uniformity across the dataset.

Once the data was cleaned, it was systematically organized into distinct tables, each designed to address different analytical needs. The **Sales Data** table included comprehensive details about each sale, such as transaction dates, product names, quantities sold, and revenue generated. The **Product Sales Data** table focused on individual product performance metrics, providing insights into which products were most successful. Meanwhile, the **Product Revenue Month wise** table aggregated revenue figures over time to help track overall profitability trends and seasonality.

This structured approach to organizing the data not only improved accessibility but also set the stage for more detailed analysis and strategic planning. It enabled the extraction of meaningful insights and the identification of patterns that informed actionable recommendations. By understanding these trends and metrics, I was able to develop strategies aimed at boosting sales growth and optimizing overall business performance. This thorough preparation and analysis were key to unlocking the potential within the sales data and leveraging it for future success.

## **2. Visualization and Basic Insights:**

The use of visualization tools such as Excel Sheets and Google Collab was pivotal in transforming the cleaned data into actionable insights. By creating graphs and charts, we were able to reveal essential patterns and trends within the sales data. These visualizations helped us identify the best- and worst-selling products, spotlight profitable customers, and gain a comprehensive view of overall sales trends.

Visual representations provided a clear and intuitive understanding of the data, making it easier to pinpoint key performance indicators and areas requiring attention.

For instance, bar charts and pie charts illustrated the distribution of product sales, highlighting which items contributed the most to profit and which ones lagged behind.

These insights laid the groundwork for deeper analysis and informed strategic decision-making. By understanding the visualized data, we could make data-driven decisions, such as which products to promote more aggressively or which customer segments to target with personalized marketing efforts. This approach guided the company towards implementing effective measures to enhance sales and profitability.

Overall, the integration of visualization tools was instrumental in harnessing the full potential of the sales data and driving the company toward achieving its business objectives.

### **3. Pareto Analysis:**

Pareto Analysis, derived from the Pareto Principle, is a vital technique for prioritizing efforts and resources by focusing on the critical few factors that have the greatest impact. The Pareto Principle, often known as the 80/20 rule, suggests that roughly 80% of outcomes are produced by 20% of causes. In business, this principle indicates that a small number of factors frequently lead to most of the results.

In the analysis of Bombay Medical Store's sales data using Pareto Analysis, several important insights were uncovered. This analysis revealed that a select group of products significantly contributed to the store's sales revenue and profit. Specifically, fewer than 20% of the products accounted for around 80% of the total revenue and profit.

Within this group of top-performing products, items such as BUDECART RESP.5, DUOLIN 3 RESPULES, OPTINEURON INJ., NP.COM, and NUROKIND PLUS INJ (2 ML) emerged as the most significant contributors. Together, they accounted for more than 30% of the total profit generated by the top 20% of products. This finding underscores the importance of these particular products in driving the company's revenue and profitability.

By leveraging these insights from Pareto Analysis, the company can strategically focus its resources and efforts on maximizing the sales and profitability of these key products. This approach allows the company to make informed decisions about inventory management, marketing strategies, and product development, ultimately leading to improved overall performance and a competitive edge.

#### **4. SWOT Analysis:**

SWOT Analysis is a strategic tool used to evaluate an organization's internal strengths and weaknesses, alongside external opportunities and threats. This framework helps businesses understand their current position and develop strategies for improvement and growth.

- **Strengths:** Internal attributes that give an organization a competitive edge, such as a strong brand, skilled workforce, or efficient processes.
- **Weaknesses:** Internal factors that may hinder performance, such as limited resources, outdated technology, or inefficient operations
- **Opportunities:** External trends or changes that the organization can exploit for growth, such as emerging markets, technological advancements, or favourable regulations.
- **Threats:** External factors that could negatively impact the organization, like increased competition, economic shifts, or changing consumer preferences.

In the SWOT analysis performed on the BOMBAY MEDICAL STORE's data, the strengths discovered were the firms/stores that contribute to the most invoice value generated which include SHIVAM MEDICAL STORE and PIHU MEDICAL STORE and the highest revenue generating products such as DUOLIN 3 RESPULES and BUDECART RESP. 5. The weakness are the products which didn't contribute to the profit as they didn't generate any profit. The opportunities include expanding the store branches to some other popular areas of the city to get more sales hence increasing the store's revenue and profit generation. While there are no specific threats faced by the organisation currently but the stores located in the same area can impose competition which can be problematic for the BOMBAY MEDICAL STORE.

The suggested overcoming strategies will be helpful in not only identifying the problems but can also be advantageous for the store as they can overcome the difficulties along with improved inventory management by focusing on the strengths and try removing the products which can be considered as their weakness.

By conducting a SWOT analysis, the store can identify key areas for development, align their resources with strategic goals, and proactively respond to changes in the market. This approach enables businesses to enhance their strengths, address weaknesses, capitalize on opportunities, and mitigate threats, thereby achieving sustained growth and success.

## **5. ABC Analysis:**

ABC Analysis is a crucial inventory management tool that sorts products into three distinct groups based on their contribution to the company's total sales revenue. These groups are labelled A, B, and C. Category A includes the most valuable and influential products, Category B includes moderately impactful products, and Category C includes those with the least impact.

In the context of analysing sales data, ABC Analysis played a key role in determining and ranking products according to their revenue contributions. Products were placed into the A, B, or C categories based on their ABC coefficient, calculated by dividing a product's total revenue by the total revenue generated by all products. This coefficient indicates a product's relative importance in terms of revenue generation.

The analysis identified 287 products as Category A, representing high-impact items that are crucial to the company's revenue. These products are of strategic importance, warranting focused attention and resource allocation. Additionally, 794 products were placed in Category B, while 1,787 were classified under Category C. This categorization provides a comprehensive overview of the product's performance in all over the six months, highlighting key areas for improvement and potential optimization.

## **6. Segmentation using RFM:**

RFM analysis, which stands for Recency, Frequency, and Monetary Value, is a highly effective technique for segmenting customers based on their purchasing behaviour. In the case of Bombay Medical Store, RFM analysis was utilized to categorize buyers into distinct segments by examining how recently they made purchases, how often they bought products, and the total amount they spent.

- **Recency** indicates the time since a customer last made a purchase, reflecting their current level of engagement with the store. Customers who have made recent purchases are generally more engaged and likely to respond positively to marketing efforts.
- **Frequency** measures how often a customer makes purchases, usually tracked by the number of invoices. Frequent buyers are often more loyal and have a stronger relationship with the store.
- **Monetary Value** assesses the total amount of money spent by each customer, which highlights their contribution to the store's revenue. High monetary value customers are particularly valuable as they generate significant revenue.

Through RFM analysis, Bombay Medical Store was able to identify high-value customers who not only made frequent purchases but also spent substantial amounts and had engaged recently. This segmentation enabled the company to craft tailored marketing strategies, develop loyalty programs, and offer personalized promotions to each customer segment effectively.

By understanding these patterns of customer behaviour, the store could optimize its efforts to retain customers and boost revenue. Targeting high-value customers with specific offers and incentives helped improve customer satisfaction and loyalty, leading to sustained growth and profitability. This strategic approach allowed the store to focus its resources efficiently and enhance its competitive advantage in the marketplace.

## **7. Actionable Insights and Strategic Guidance:**

**Strategic Insights and Recommendations:** The analysis process provided the company with a comprehensive, data-driven strategy to enhance its business operations. This strategy utilized insights from Pareto Analysis, SWOT Analysis, and RFM customer segmentation to formulate practical and impactful recommendations.

**Prioritizing High-Impact Products:** Through Pareto Analysis, the company identified its most successful products, allowing it to concentrate resources on maximizing their potential. This involved implementing targeted promotions, developing effective pricing strategies, and optimizing inventory management to fully exploit the demand for these high-impact items.

**Customizing Marketing Efforts:** By employing RFM analysis for customer segmentation, the company could design personalized marketing campaigns that specifically address high-value customers. These initiatives might include loyalty programs, exclusive offers, and personalized communications to boost customer engagement and retention.

Overall, these strategic insights and recommendations aimed to optimize sales performance, refine customer segmentation, and foster sustainable growth and profitability for The BOMBAY MEDICAL STORE.

## **3 Results and Findings**

**Data Access:** To access the data, [click here](#).



## **1. Pareto Analysis:**

**Overview:** The Pareto Principle, or the 80/20 rule, was applied to analyse sales data for The BOMBAY MEDICAL STORE, revealing significant insights into the company's revenue dynamics and product performance.

**Top-Performing Products Identified:** The analysis highlighted that a small subset of products, including DUOLIN 3 RESPULES, OPTINEURON INJ., BUDECART RESP.5, NP.COM, NUROKIND PLUS INJ (2 ML), ODOXIL 250 DT, and ODOXIL 500 TAB, were major contributors to the store's profitability. Specifically, 352 products—representing 20% of the total product range—accounted for approximately 35% of the store's total profit during the six-month period from October 2023 to March 2024.

**Revenue Impact Analysis:** Among these high-performing products, twenty-nine items, including the aforementioned DUOLIN 3 RESPULES, OPTINEURON INJ., BUDECART RESP.5, NP.COM, NUROKIND PLUS INJ (2 ML), ODOXIL 250 DT, and ODOXIL 500 TAB, were particularly notable. These products collectively generated 50% of the store's total profit during the specified timeframe. This underscored their critical role in the company's revenue generation and highlighted their importance within the product portfolio.

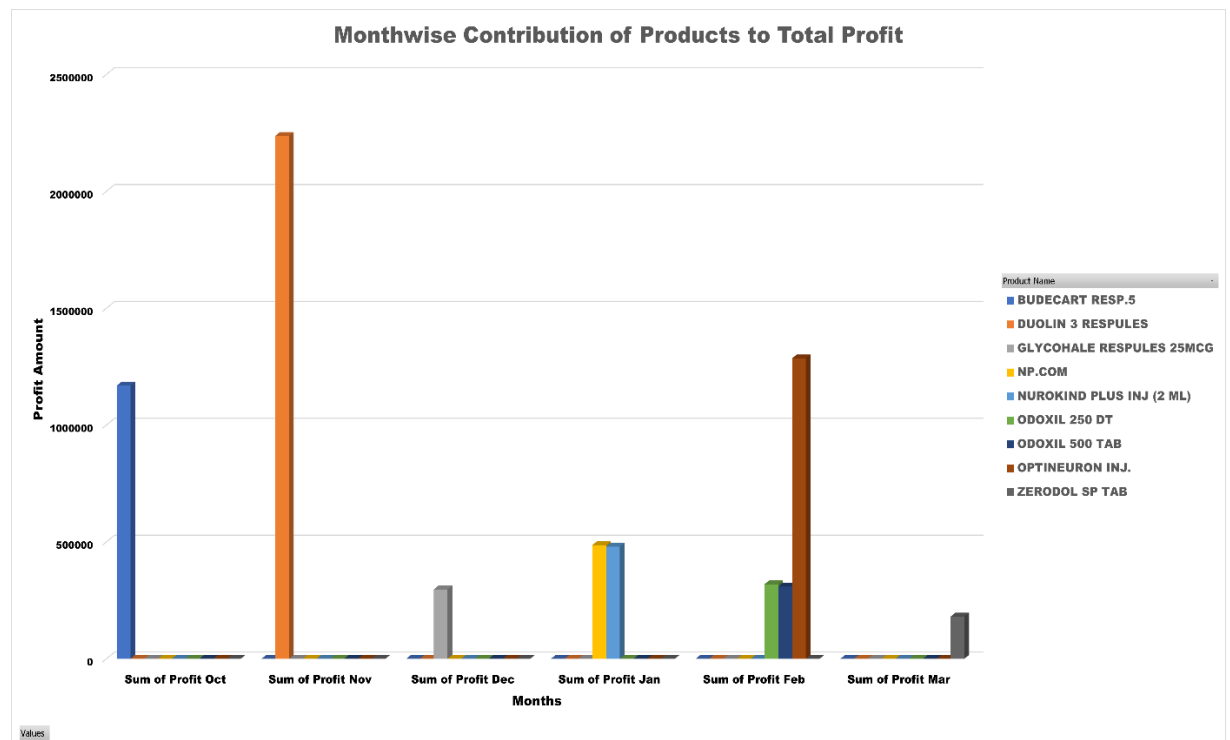
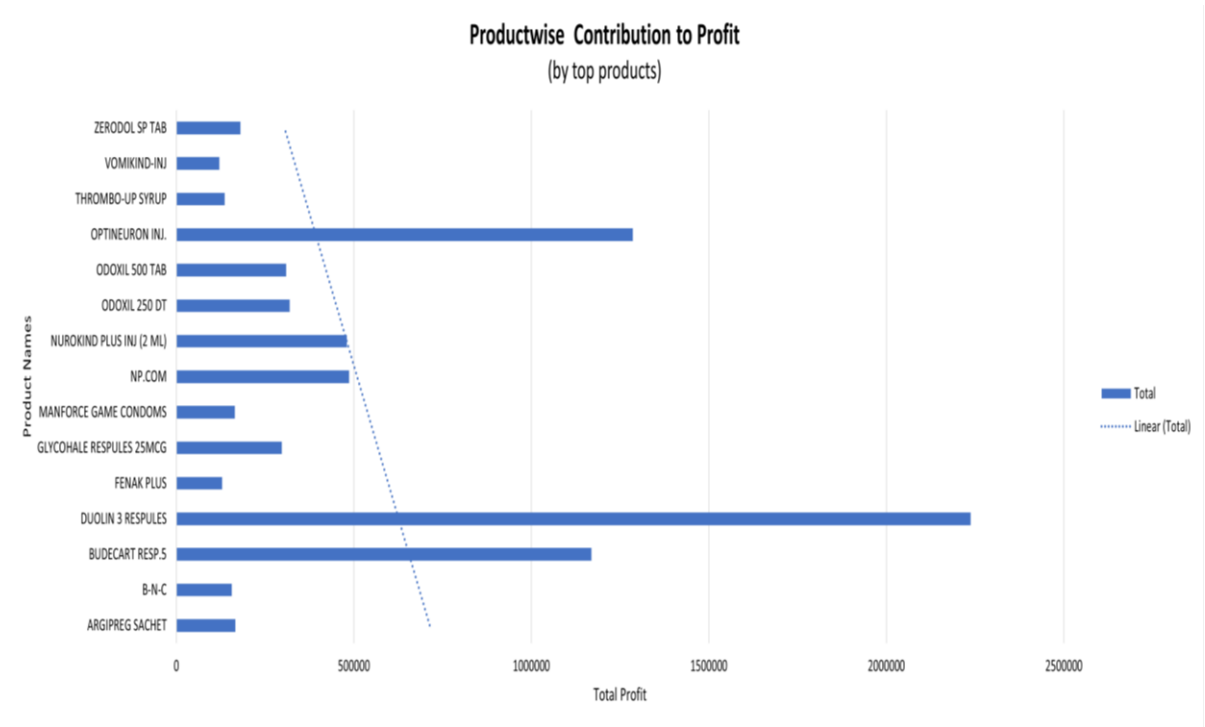
**Strategic Focus for Optimization:** By pinpointing the products that contribute most significantly to revenue, the Pareto Analysis facilitated informed strategic decisions. The company could now direct its resources, marketing efforts, and operational strategies towards these high-impact items. This includes implementing targeted promotional campaigns, optimizing inventory management, and focusing on product development initiatives to maximize revenue from these key products.

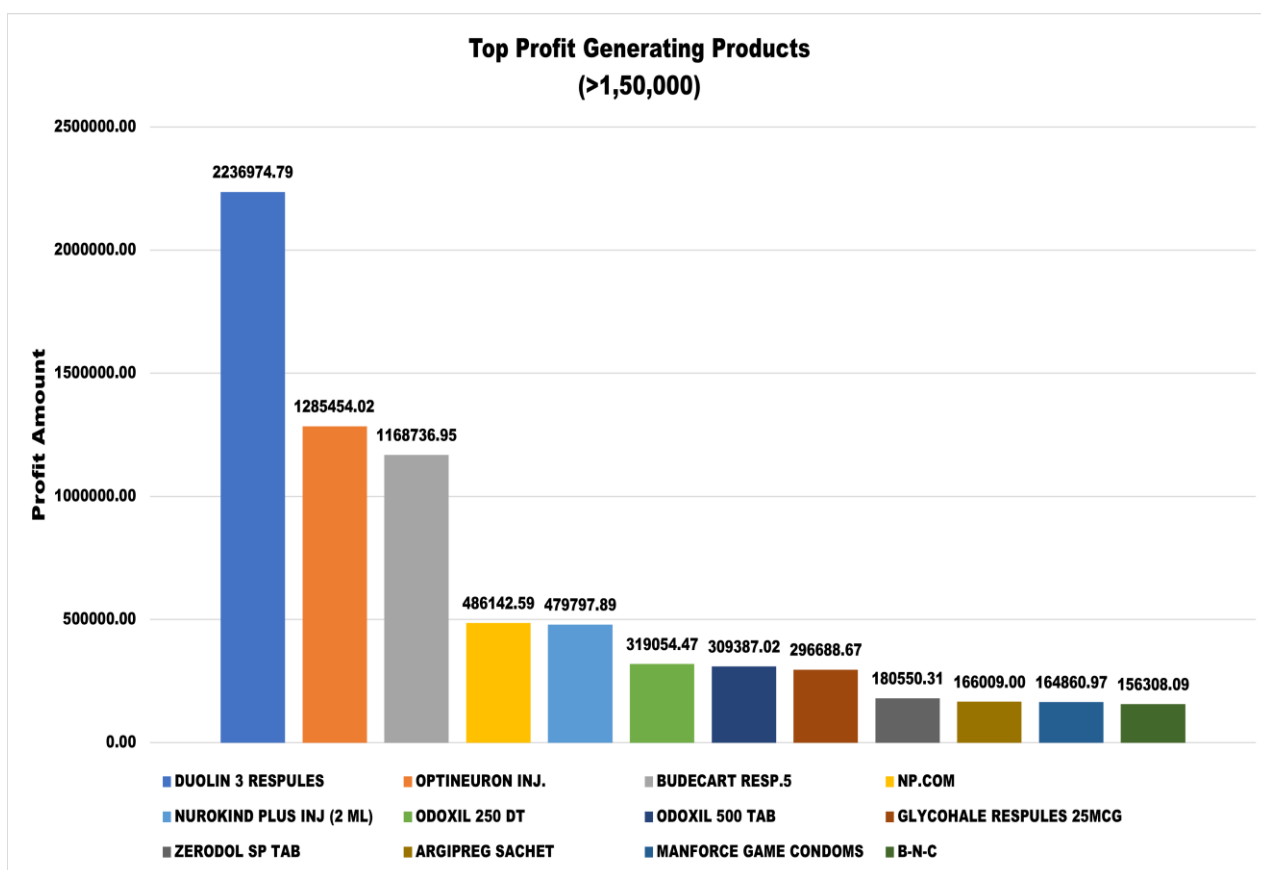
**Enhanced Resource Allocation:** The insights gained from the Pareto Principle enabled more efficient resource management. By concentrating efforts on top-performing products, the company could streamline operations, reduce expenditures related to underperforming items, and enhance overall profitability.

**Future Strategy Development:** With the valuable insights from the Pareto Analysis, The BOMBAY MEDICAL STORE can craft future growth strategies. This might involve expanding the range of successful products, refining marketing tactics for these high performers, and exploring opportunities to boost the performance of other products through focused interventions.

The application of the Pareto Principle provided actionable insights that guided strategic decision-making and resource allocation for The BOMBAY MEDICAL STORE. By emphasizing the significance of high-performing products, the company could effectively drive revenue growth and profitability.

These graphs will visually represent the insights derived from Pareto Analysis:





## 2. SWOT Analysis:

The SWOT Analysis provided a comprehensive framework to evaluate The BOMBAY MEDICAL STORE's internal capabilities and external environment. By identifying key strengths, weaknesses, opportunities, and threats, the analysis offered valuable insights into strategic areas of focus for the company.

**Strengths Identification:** The analysis highlighted several strengths that contribute to The BOMBAY MEDICAL STORE's competitive advantage. Key strengths include a Top 13 stores in the invoice data contribute to the maximum amount of invoice value generated by the store, which include DILIP MEDICAL STORE, PIHU MEDICAL STORE and SHIVAM MEDICAL STORE. Giving more advantages to these specific stores can enhance the company's market position and support sustained profitability.

**Weaknesses Assessment:** The analysis also revealed areas of improvement within the company. Though there isn't any specific weakness as per the owner and data, the products which contribute 0% to the total revenue can be removed.

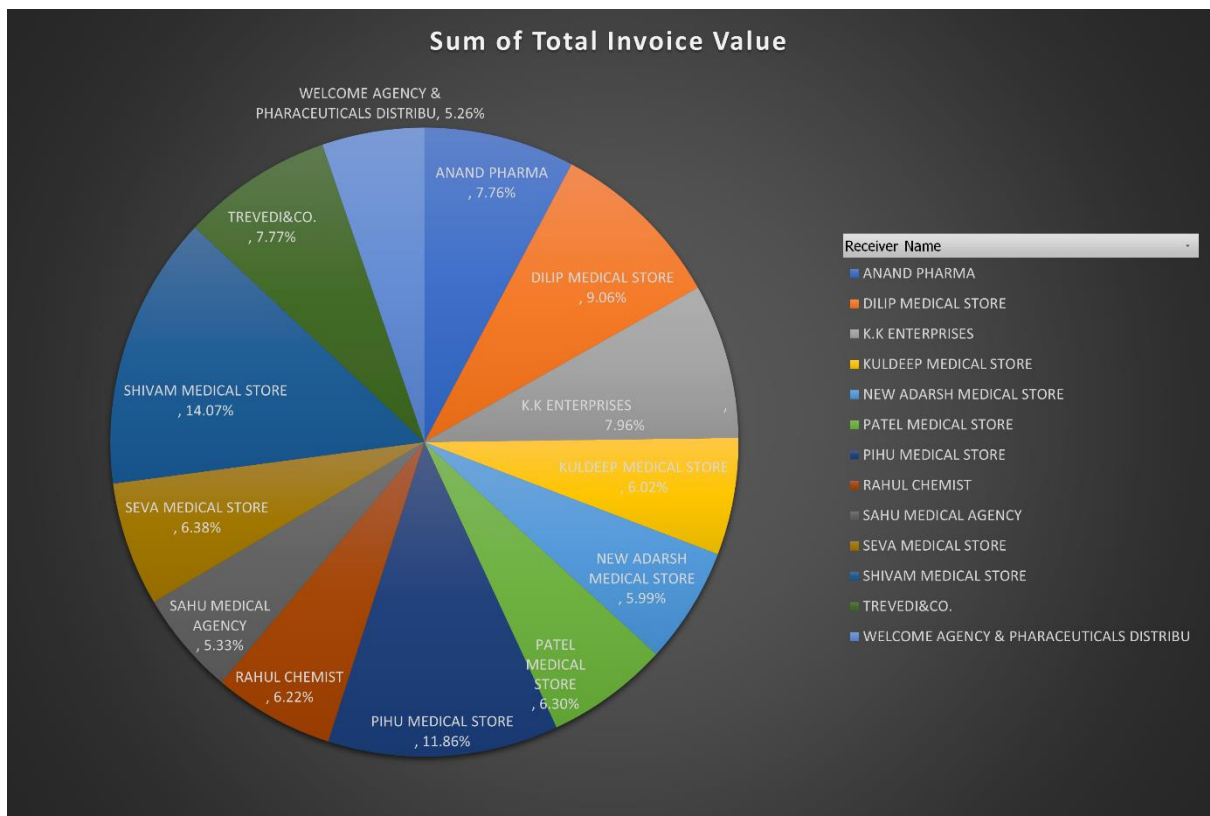
**Opportunities for Growth:** Several opportunities were identified that could enhance The BOMBAY MEDICAL STORE's market presence and profitability. These include expanding into emerging markets where there is higher invoice value generated and introducing new product lines to meet changing consumer demands. Capitalizing on these opportunities could drive significant growth.

**Threats Analysis:** The analysis highlighted external threats that could impact the company's performance. These threats include increasing competition, regulatory changes, and economic fluctuations that could affect their growth.

**Strategic Action Plan:** The insights from the SWOT Analysis guided the development of a strategic action plan for The BOMBAY MEDICAL STORE. By leveraging strengths and opportunities while addressing weaknesses and threats, the company can enhance its competitive edge and achieve sustainable growth. Key actions include optimizing marketing strategies, improving supply chain efficiency, and expanding product offerings to meet evolving market needs.

The SWOT Analysis provided actionable insights that informed strategic decision-making for The BOMBAY MEDICAL STORE. By understanding and addressing internal and external factors, the company is well-positioned to capitalize on growth opportunities and navigate challenges effectively.

These graphs will visually represent the insights derived from SWOT Analysis:



### **3. ABC Analysis:**

ABC Analysis is an effective inventory management approach that segments products into three distinct groups—A, B, and C—based on their impact on total sales revenue. This segmentation is informed by calculating the ABC coefficient, which plays a vital role in understanding each product's contribution to the store's financial performance.

#### **Application of ABC Analysis:**

**Determining the ABC Coefficient:** The ABC coefficient for each product was determined by dividing its total sales by the aggregate sales of all products. This metric serves as a relative indicator of a product's significance in driving overall sales revenue.

**Classification into A, B, and C Segments:** Products were classified into categories A, B, or C based on their ABC coefficients. Products in the A category, which have an ABC coefficient greater than or equal to 0.0005, are top performers in terms of revenue contribution. The B category consists of products with coefficients between 0.0001 (inclusive) and 0.0005, indicating a moderate impact on revenue. Finally, C-category products, with coefficients below 0.0001, have the least impact on sales revenue.

#### **Results and Findings:**

**A-Category Products:** These products represent a smaller subset of products but account for a substantial portion of total sales revenue, underscoring their critical role in the store's profitability. Prioritizing these products is essential to maximize financial outcomes.

**B-Category Products:** While not as impactful as A-category products, those in the B category make a meaningful contribution to revenue and maintain a stable presence in the market.

**C-Category Products:** These items have the lowest revenue contribution and, while they add diversity to the product line, their individual impact on the store's financials is minimal. They can be removed as their abc coefficient equals zero.

**NOTE:** The values which were contributing to 0% revenue were removed before ABC analysis.

#### **Strategic Insights:**

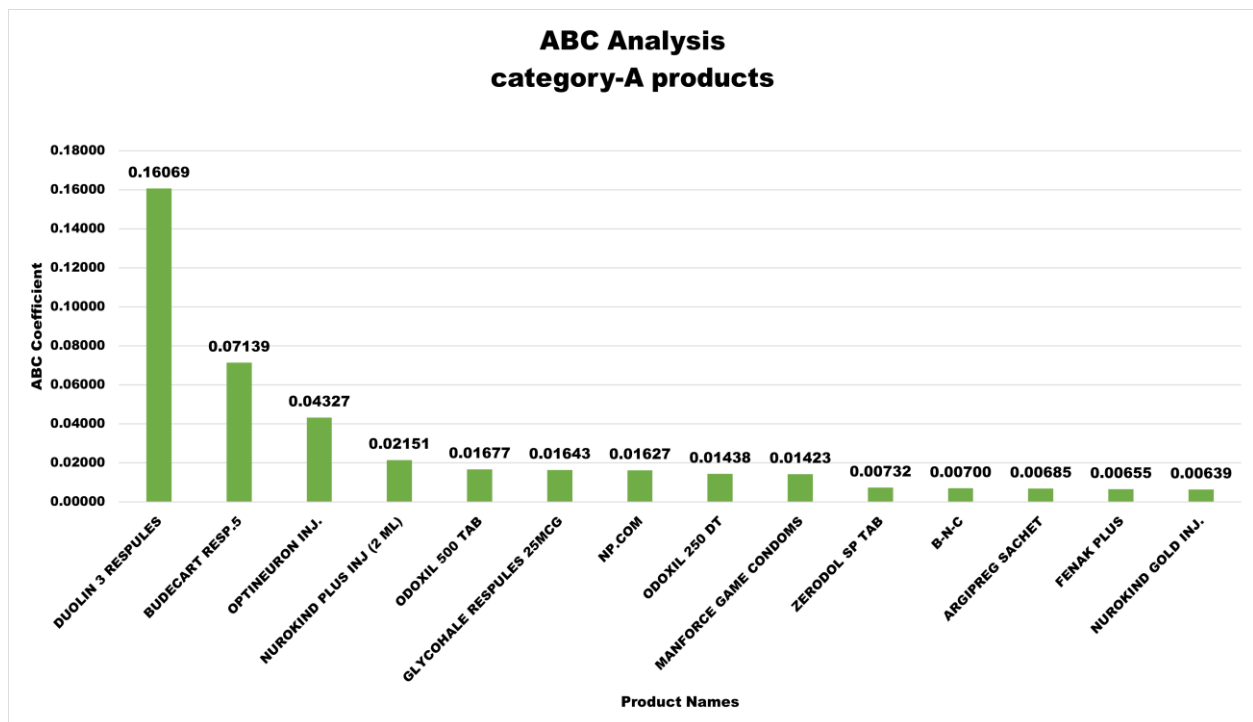
**Optimizing Resource Allocation:** By understanding the revenue hierarchy, the organisation can strategically allocate resources, focusing efforts on A-category products that are key revenue drivers.

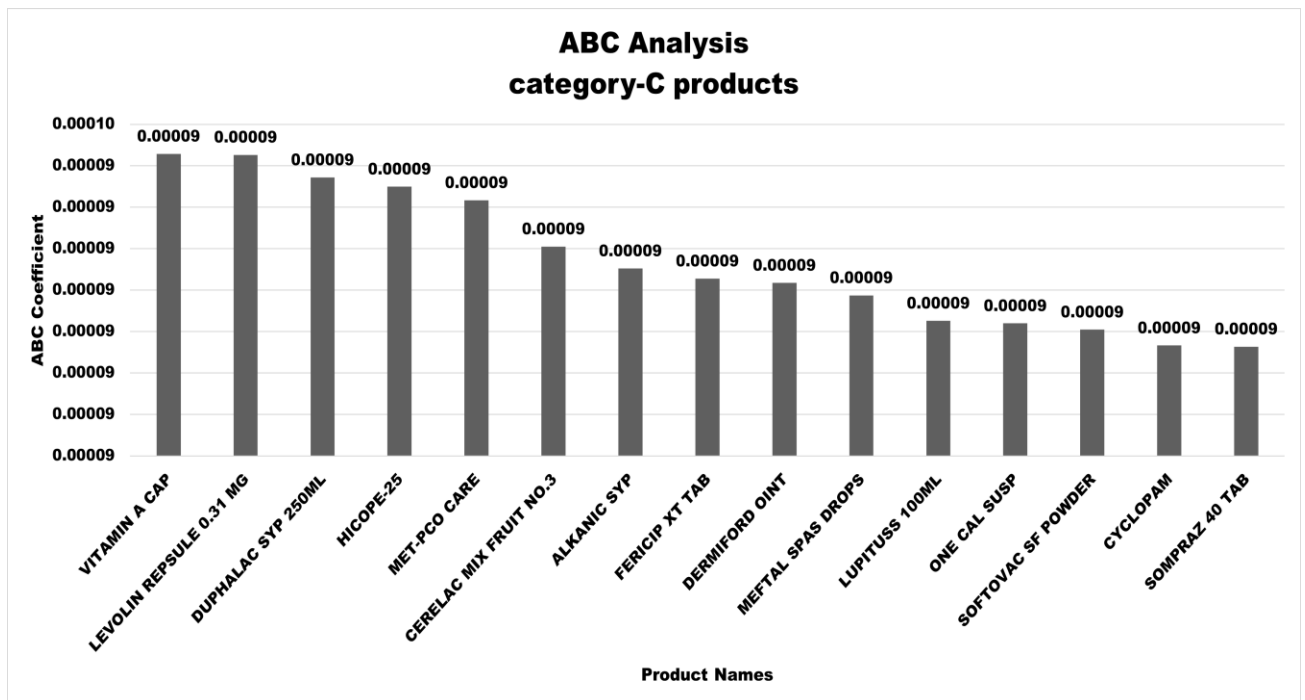
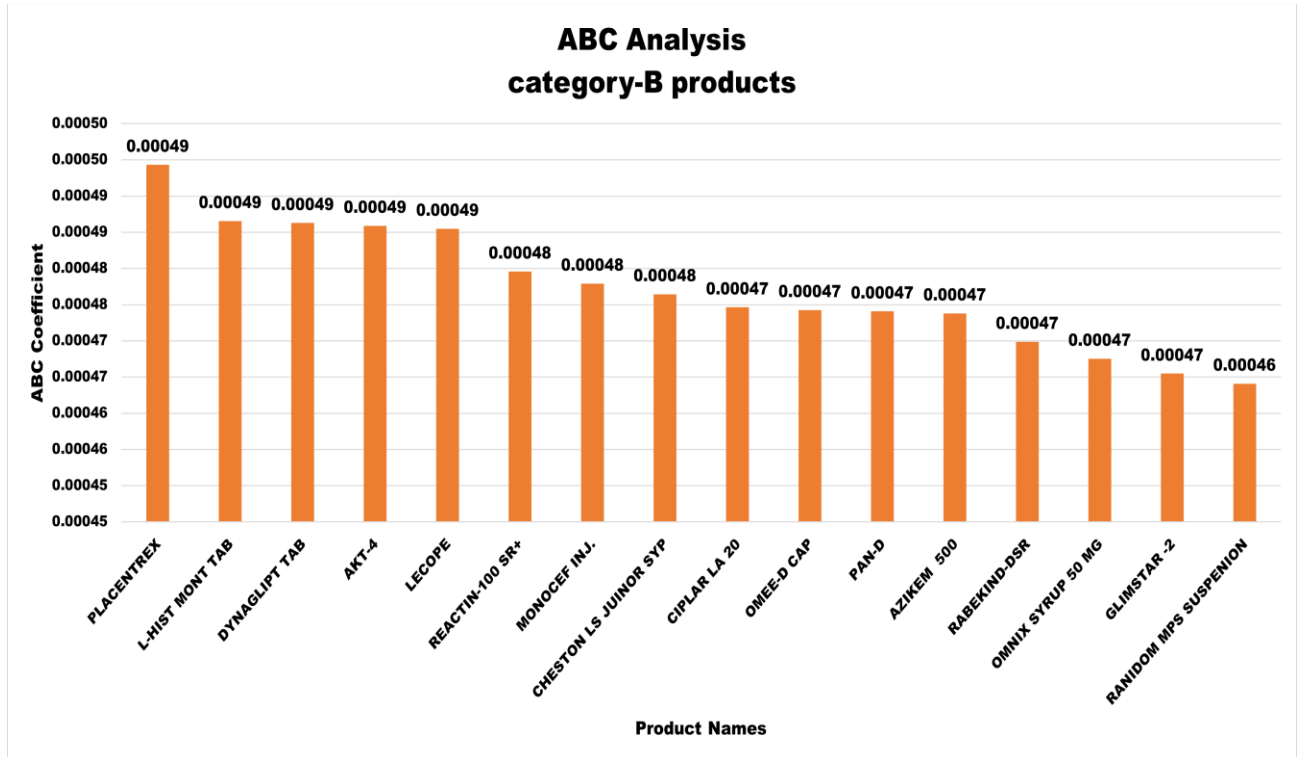
**Enhancing Inventory Management:** This analysis aids in inventory management by prioritizing high-revenue products and ensuring their availability, reducing the risk of stockouts and optimizing stock levels.

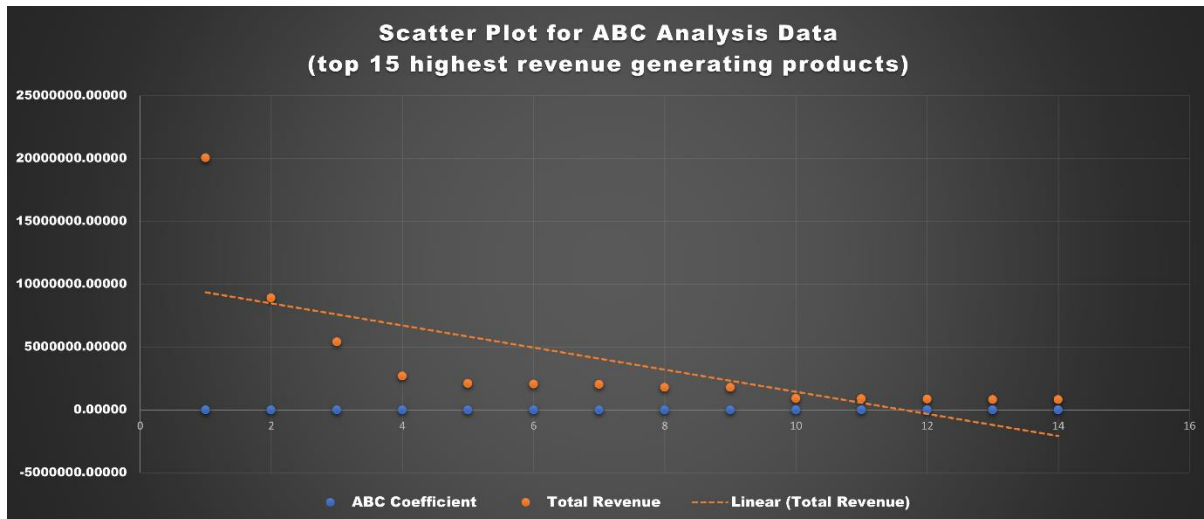
**Developing Tailored Marketing Strategies:** With the insights gained from ABC Analysis, the company can devise differentiated marketing strategies. A-category products may benefit from aggressive promotion, while B and C-category products can be supported with targeted campaigns aimed at boosting their sales.

By leveraging ABC Analysis, The BOMBAY MEDICAL STORE gained critical insights into the relative revenue contributions of its product portfolio. This understanding enabled more informed decision-making related to resource distribution, inventory management, and marketing initiatives, ultimately enhancing profitability and operational performance.

The graphs given below visually represent the insights derived from ABC Analysis. However, due to a very large number of products only some top products are chosen for the visualisation:

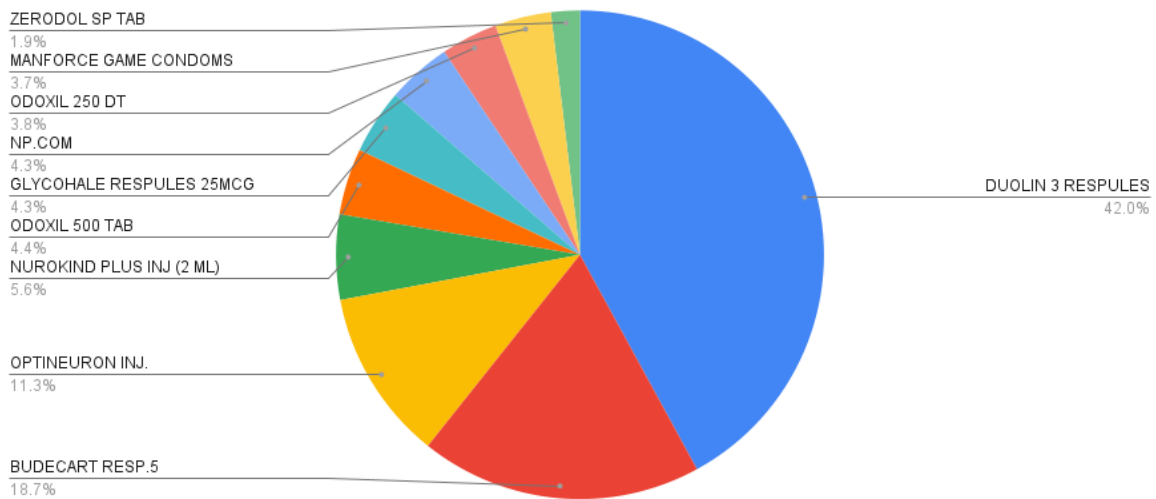






#### ABC Coefficient, Total Revenue and Percentage Revenue

Top 10 Revenue generating Products



#### **4. Recency, Frequency, Monetary Value (RFM) Analysis:**

RFM (Recency, Frequency, Monetary Value) Analysis is an effective method for categorizing customers according to their purchasing behaviour, including how recently they made a purchase, how often they buy, and the amount of money they spend. Below is a detailed account of the insights gained from the RFM Analysis and its application to the current dataset:



### **Application of RFM Analysis:**

**Recency:** The analysis initially focused on assessing how recently each store or firm made its last purchase. Stores with more recent purchases were assigned higher recency scores.

**Frequency:** This element evaluated the regularity of purchases made by the stores. It took into account both the number of transactions completed and the specific months in which purchases occurred.

**Monetary Value:** The monetary value aspect involved calculating the total sales to each purchasing store over the specified six-month period.

### **Results and Findings:**

#### **Top-Tier Clients**

RFM Analysis identified top-tier clients based on their Recency, Frequency, and Monetary (RFM) scores. These client stores showed patterns of frequent buying, recent interactions, and significant financial contributions.

#### **Customer Grouping**

Stores were grouped into various categories according to their RFM scores. For example, stores or firms with high scores in recency, frequency, and monetary value were labelled as elite or VIP clients, while those with lower scores were sorted into different groups based on their purchasing behaviour.

#### **Understanding Client Behaviour**

The analysis offered insights into client behaviour patterns. It highlighted which stores were loyal and consistently purchased products, as well as those that might benefit from incentives to enhance their purchase frequency or spending.

#### **Tailored Strategies**

RFM Analysis facilitated the creation of tailored marketing and retention strategies. Stores generating high value could be offered exclusive deals or rewards to preserve their loyalty, whereas lower-value segments could be targeted with promotions to enhance their engagement and spending.

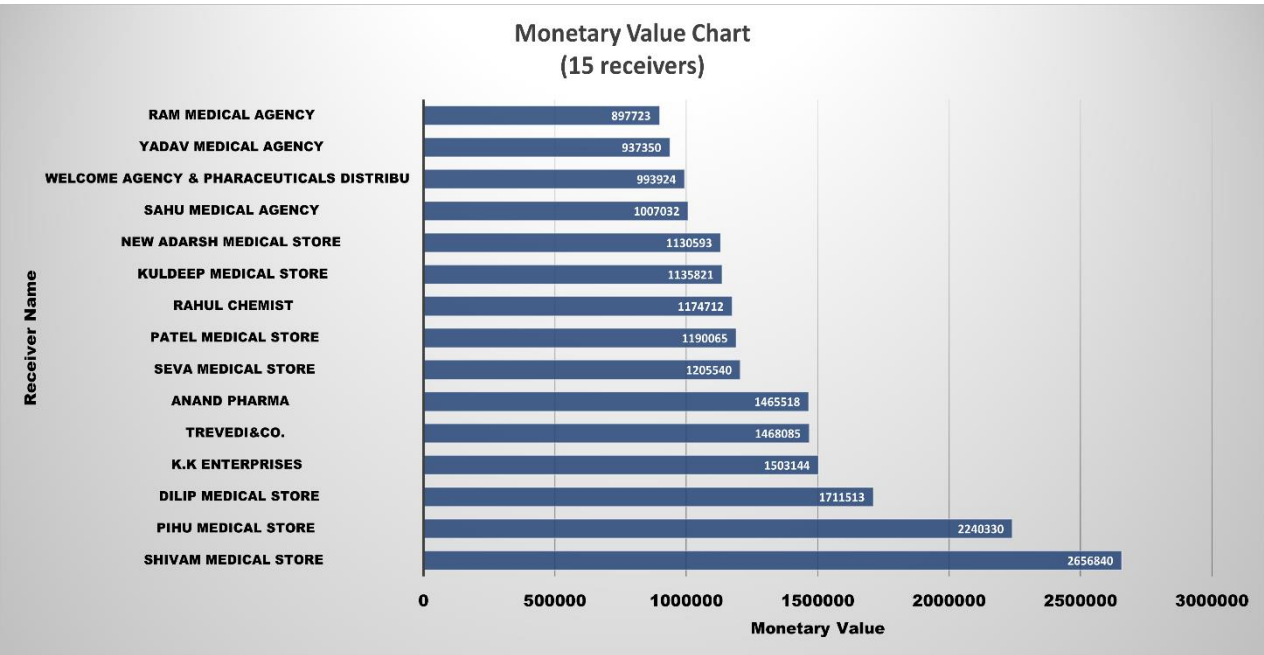
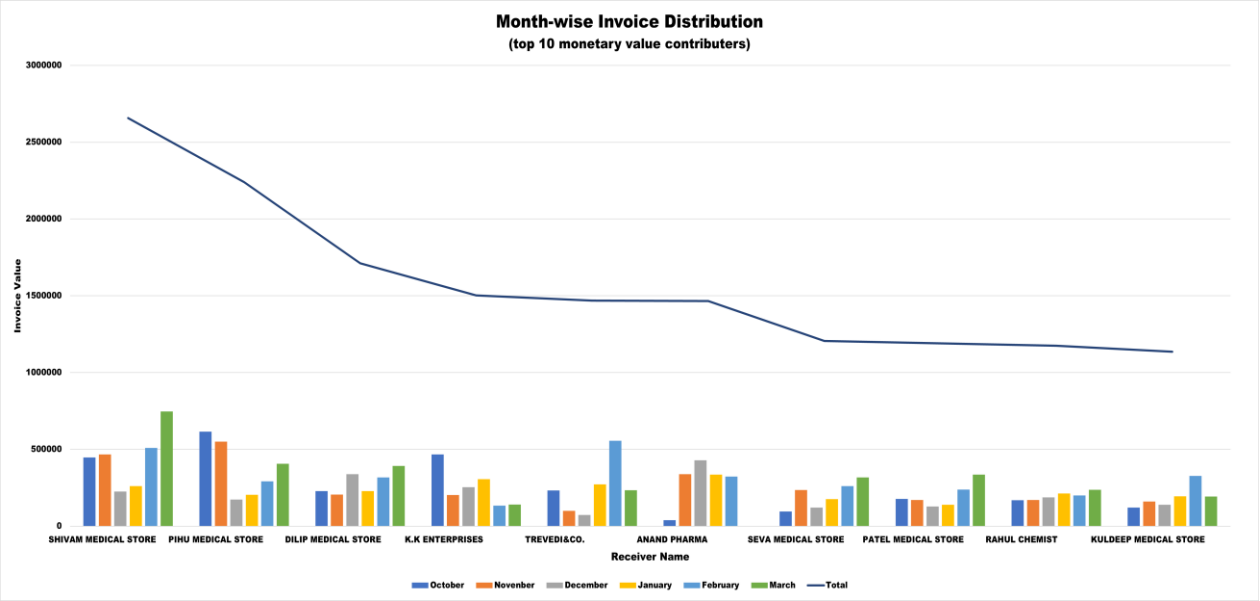
### **Application in my Project:**

The RFM Analysis played a crucial role in identifying top-performing client stores such as SHIVAM MEDICAL STORE, PIHU MEDICAL STORE, and DILIP MEDICAL STORE. These clients demonstrated the highest purchase frequency, monetary values, and overall RFM scores.

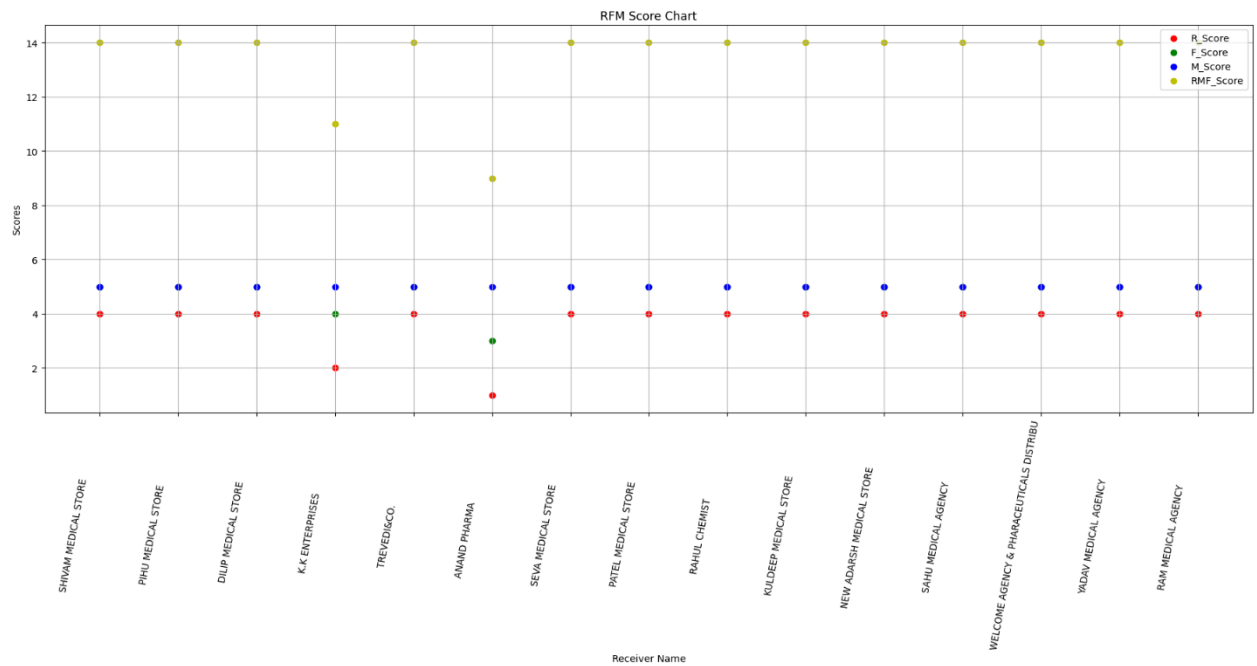
Offering practical insights for store retention, loyalty initiatives, promotional activities and tailored marketing campaigns targeted at various store segments.

RFM Analysis was essential in understanding stores’ buying patterns, improving marketing strategies, and strengthening relationships with stores to boost business growth and profitability.

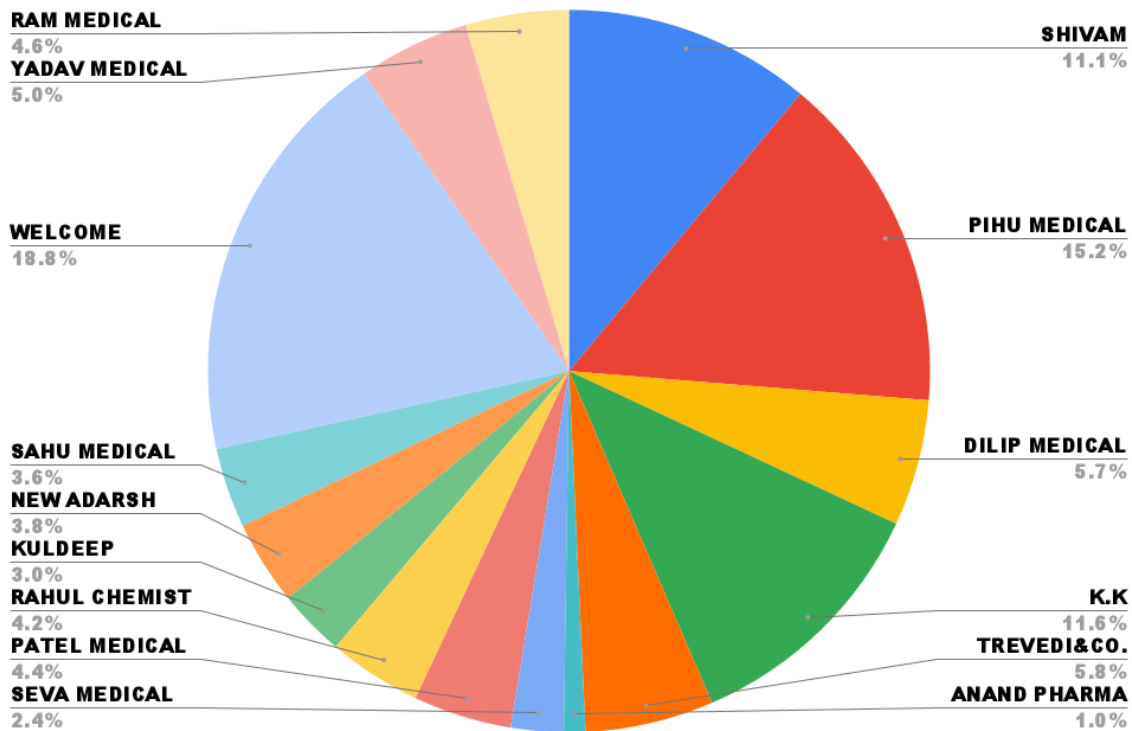
Below charts offer insights to the contribution of client stores to the BOMBAY MEDICAL STORE's sales/revenue.



This Scatter plot is generated with python code in colab (RFM Score Chart for 15 stores):



### Sales Distribution by client store's contribution to total



## **4 Interpretation of Results and Recommendation**

### **Interpretation of Results**

A data-driven approach to identifying valuable products and implementing strategic analysis tools reflect a deep understanding of maximizing revenue and profit margins. Applying this on the sales data of the company provided valuable insights and the results hence founds are as follows:

#### **Sales Analysis:**

In this wide variety of products, the product which is sold the highest number of times is BUDECART RESP.5 which is sold 77935 units in all over these six months, consistently contributing to high sales and indicating strong customer demand.

Some more top-performing products include DUOLIN 3 RESPULES, OPTINEURON INJ., BUDECART RESP.5, NP.COM, NUROKIND PLUS INJ (2 ML) and ODOXIL 250 DT suggesting a preference for these products among customers.

#### **Product Analysis:**

DUOLIN 3 RESPULES stands out as a crucial product, significantly enhancing the store's revenue by contributing 0.16% of the total. Its steady demand and high-profit margins make it an essential asset.

Products such as ALKASOL SYP and PERINORM INJ., although not the most in demand, still provide a substantial portion of the overall profit. This highlights the importance of evaluating profit margins in addition to demand when planning inventory and sales strategies.

#### **Purchase Patterns:**

There is a noticeable preference for products in the A category, with these products contributing significantly to overall sales and profits.

Customers seem to favour products with higher ABC coefficients, indicating a preference for high-impact products.

### **Recommendations:**

### **High-Value Receiver Store's Focus:**

Focus on identifying and prioritizing top-tier buyers like SHIVAM MEDICAL STORE, PIHU MEDICAL STORE, DILIP MEDICAL STORE, and K.K. ENTERPRISES, as they make significant contributions to sales revenue.

Implement personalized promotions, loyalty programs, and exclusive offers to encourage repeat purchases and enhance brand loyalty.

Ensure excellent customer service and prompt order processing to improve the overall purchasing experience.

Engage stores with low purchase frequency and monetary value, such as CARE PHARMA and SWAGAT MEDICINE CENTRE, with tailored discounts and special offers to motivate more frequent transactions.

Utilize email campaigns and targeted ads to remind and attract occasional buyers with current promotions and new product launches.

### **Fine-Tune Inventory Processes:**

Ensure a well-maintained stock of Category A products generated through ABC analysis, with particular emphasis on DUOLIN 3 RESPULES, BUDECART RESP.5, OPTINEURON INJ., and NUROKIND PLUS INJ (2 ML), as these items are major revenue drivers. To optimize stock levels and meet customer needs, implement effective inventory management strategies, including frequent audits, accurate demand forecasting, and strategic purchasing.

**Use Inventory Management Software:** Implement software solutions to track inventory in real-time, streamline reordering, and prevent stockouts.

**Analyse Sales Data:** Regularly review sales trends and customer preferences to adjust inventory levels according to demand fluctuations.

**Optimize Supplier Relationships:** Maintain strong communication with suppliers to ensure timely deliveries and negotiate favourable terms and conditions.

**Implement Just-In-Time Inventory:** Adopt a just-in-time approach to minimize excess stock while ensuring timely restocking based on accurate demand predictions.

By integrating these strategies, an efficient and responsive inventory system can be maintained.