Stock Optimization to Increase Market Recognition and Expand Business

BDM Capstone Project

Presented by :
Name : Aayush Krishna
Roll Number : 23F1002879
Email : 23f1002879@ds.study.iitm.ac.in

Indian Institute of Technology Madras , Chennai , 600036

Introduction

❖ **About the Business :**
Sneha Auto Pvt Ltd, established in 2018 by Mr. Sushant Shekhar, is a B2C dealership in Patna specializing in CNG rickshaw sales and servicing. Known for quality vehicles and reliable after-sales support.

❖ **Project's Objective :**
The objective of this project was to streamline inventory management at Sneha Auto Pvt Ltd, maximizing efficiency, profitability, and market reach through optimized inventory strategies.

Image 1 : Shop's front image

Problem Statement

1.Inventory Management Challenge

- The company faces overstocking of slow-moving models while running out of high-demand models, leading to increased costs and lost sales.
- Optimizing inventory through better forecasting and procurement strategies is crucial.

2.Market Visibility Issue

- Sneha Auto struggles with a lack of online presence and limited marketing efforts.
- It restricting its reach to potential customers.

Structured **Approach**

Source of Information

➢ Sales and purchase records from May 2024 to October 2024.

Tools Used

➢ Microsoft Excel, Python (Matplotlib).

Key Methods

➢ **Demand and Supply Trends**: Analyzing future sales and supply patterns to predict demand.
➢ **ABC Analysis** – Categorizing stock based on value and turnover.
➢ **Real-Time Inventory Analysis**: Continuously monitoring inventory levels and movements to optimize stock management.
➢ **Turnover Ratio Calculation** – Measuring stock movement efficiency.
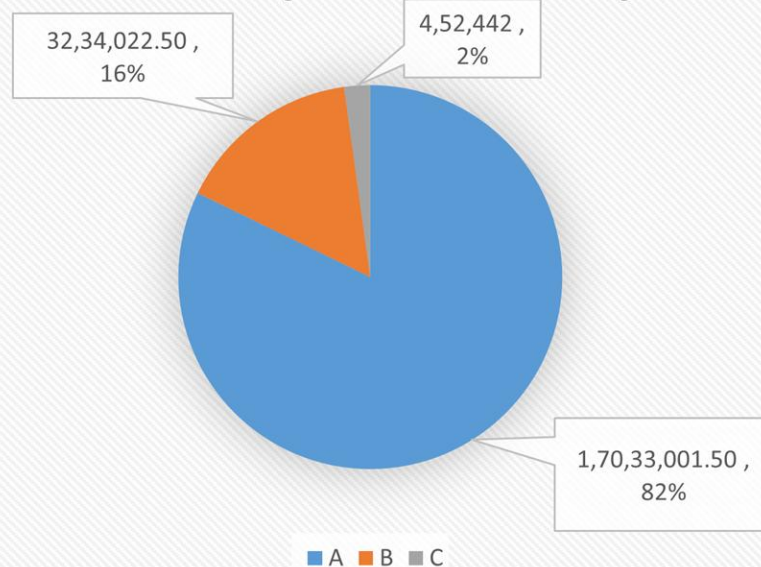
Inventory Classification

Fig 1 : ABC Inventory Classification: Contribution to Total Inventory Value

Category A

➢ The TVS King Zs+Fi-BsVI 4sCNG 30Ltr, accounting for 82.22% of revenue, is crucial for sales and requires efficient stock management.

Category B

➢ The TVS King Zd 225 Lc-Fi B-Duramax, contributing 15.59% to total revenue, plays a key role in profitability, requiring careful inventory management.

Category C

The TVS King Zk Fi Nf Wine, making up 2.19% of revenue, represents low-value, slow-moving products that require effective management to minimize waste and storage costs.

Inventory Turnover Insights

➤ The TVS King Zs+Fi-BsVI 4sCNG 30Ltr has an 80.95% turnover ratio, reflecting strong sales and effective inventory management.

➤ The TVS King Zd 225 Lc-Fi B-Duramax, with a 54.55% turnover, shows steady demand but needs strategic restocking.

Fig 2 : Inventory Turnover Ratio by Models

➤ The TVS King Zk Fi Nf Wine's 33.33% turnover suggests low market demand and potential issues with marketing or customer preferences.

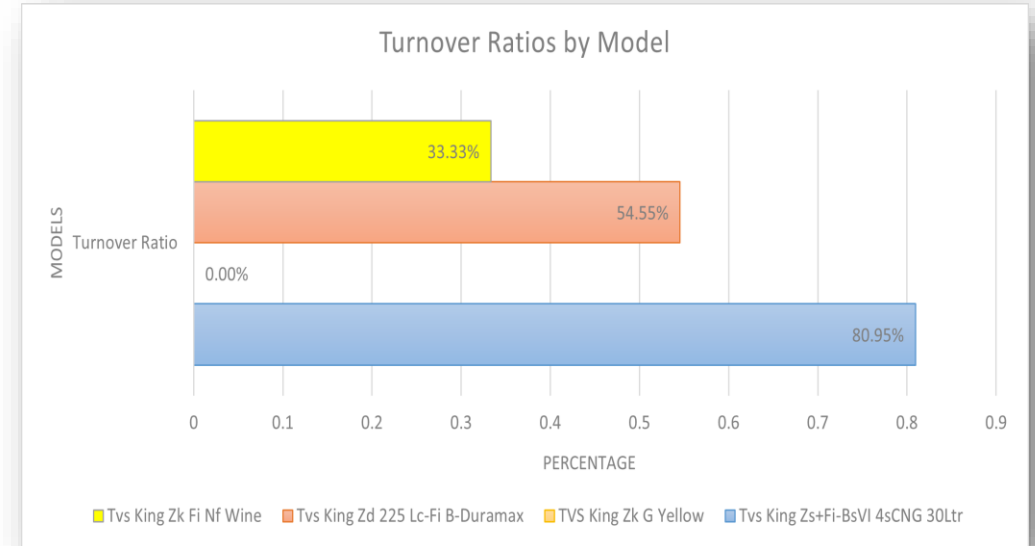➤ The TVS King Zk G Yellow's 0% turnover indicates no sales, requiring immediate attention due to poor market performance or strategy issues.

Real Time Inventory Insights

- The TVS King Zs+Fi-BsVI 4sCNG 30Ltr (yellow line) shows significant fluctuations in stock, with a peak in August followed by a decline, indicating supply challenges and overstocking due to anticipated demand.

- The TVS King Zk Fi Nf Wine (gray line) and TVS King Zk G Yellow (orange line) show minimal purchase and sales activity, reflecting stable but low demand.

- The TVS King Zd 225 Lc-Fi B-Duramax (blue line) shows a progressive decline, indicating good sales but the need for improved stock replenishment to avoid shortages.
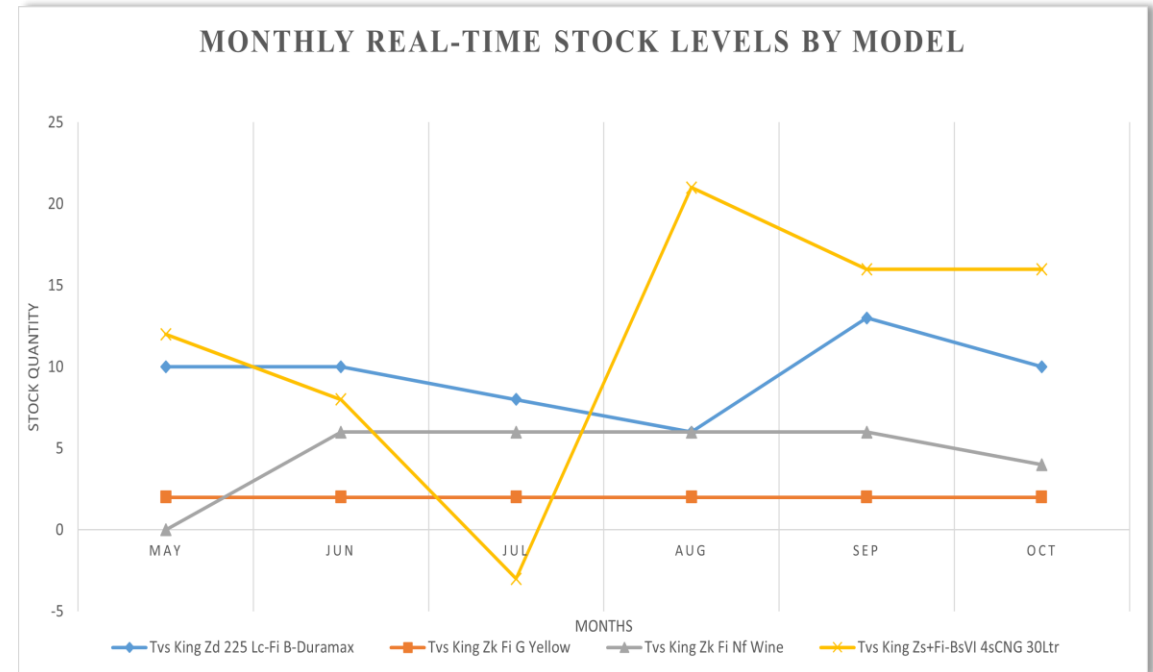

MONTHLY REAL-TIME STOCK LEVELS BY MODEL

Fig3 : Monthly Trends in Real-Time Stock by Models
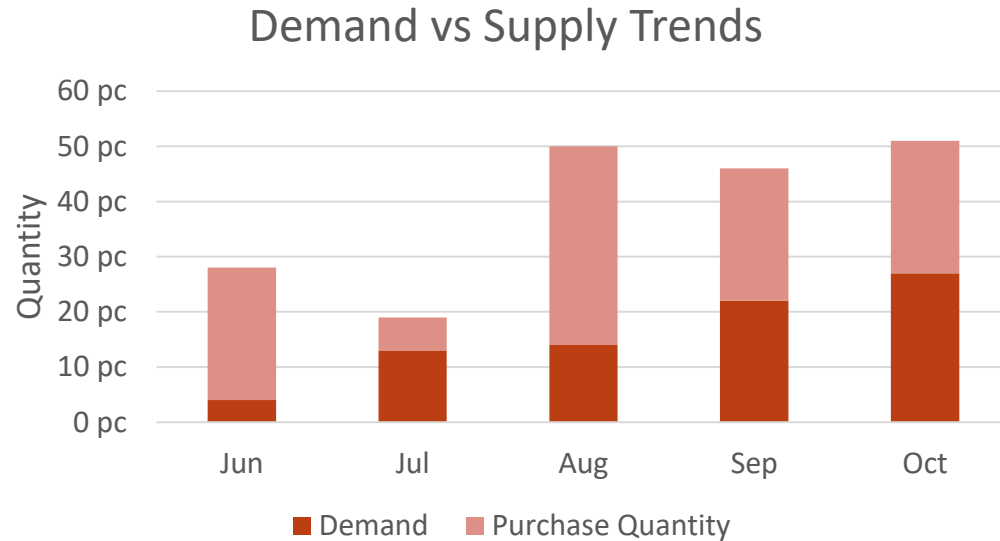
Demand vs. Supply Trends

Fig4 : Monthly Trends in Demand vs. Supply

➢ In August, purchases spiked to 36 units versus 14 units of demand, possibly due to overestimated seasonal demand.

➢ June's purchase surplus suggests overestimated demand and inaccurate forecasting, leading to excess stock.

➢ October's balanced demand and purchases (27 vs. 24 units) indicate improved inventory management and forecasting.

➢ June's high purchases with low demand risk excess inventory, potentially increasing storage costs and straining working capital.

Recommendations

Optimize Inventory for High-Demand Models:

➢ Maintain a 10% buffer stock for fast-selling models to prevent lost sales due to sudden demand spikes.

Reduce Overstocked Inventory

➢ Implement targeted marketing campaigns, discounts, and bundle offers to clear slow-moving stock efficiently.

Improve Supply Chain Coordination

➢ Shorten supplier lead times by improving logistics efficiency and adopting just-in-time inventory practices.

Enhance Demand Forecasting

➢ Use advanced predictive analytics, incorporating seasonal trends, and historical data to improve demand accuracy.

Strengthen Digital Presence

➢ Expand online reach through social media, e-commerce, and digital marketing to drive sales and engagement.

Conclusion

Stock Optimization

➢ **Stock optimization boosts market presence and financial performance** by ensuring high-demand models are always available, increasing customer satisfaction and sales

Efficient Inventory Management

➢ **Efficient inventory management reduces costs and maximizes profits** by minimizing overstocking, improving cash flow, and lowering operational expenses.

Implementing Recommendations

➢ **Implementing recommendations drives long-term business growth** through data-driven forecasting, better supplier coordination, and an enhanced digital presence.

Thank You

Name : Aayush Krishna
Roll Number : 23F1002879
Email : 23f1002879@ds.study.iitm.ac.in