



Optimizing Inventory and Sales Management for Rishabh Enterprises: A Comprehensive Approach

Submitted by
Name: ASHUTOSH UTSAV
Roll number: 22F2001659

ABOUT THE BUSINESS

- Rishabh Enterprises founded by Mr. Jitendra Kumar is a prominent utensil shop in small town of Shehar(Bihar).
- Business operate in B2C catering customers from town and surrounding village.
- Since January 2023, the business has been operating in the prime location of Gandhi Chowk, Sheohar, offering a wide range of utensils to meet the diverse needs of its customers.



CHALLENGES

- The main challenge for Rishabh Enterprises is to create an inventory system and optimize it to cater to a wide range of customers. Since a large portion of the customers come from surrounding villages, the challenge lies in creating an inventory that suits their buying patterns.



DATA OVERVIEW

To tackle the inventory creation and optimization problem, the historical sales data from the period January 2024 to April 2024 was first collected and then digitized by Mr. Jitendra Kumar.

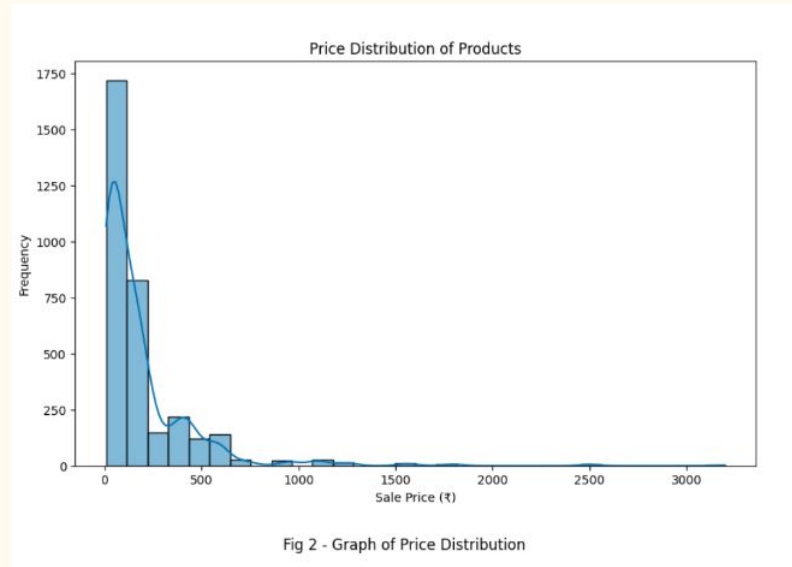
Sales Data

- Date
- Product Name
- Price
- Quantity Sold
- Total

BASIC DESCRIPTIVE AND PRICE DISTRIBUTION ANALYSIS

- Basic **descriptive statistics** has been done to understand the central tendency and distribution of the dataset.
- **Price distribution** analysis has been conducted to understand the clustering of products around specific price points. And after analysis found out that most of the products are less than 500 rupee.

	Count	Mean	std	min	25%	50%	75%	max
Price	3298.00	187.21	283.24	8.00	35.00	100.00	200.00	3200.00
Q.sold	3298.00	1.93	0.82	1.00	1.00	2.00	3.00	3.00
Total	3298.00	303.21	356.59	8.00	60.00	160.00	450.00	3200.00



SALES TRENDS OVER TIME AND TOP-SELLING PRODUCTS

- Sales trends over time will help to identify the patterns and volatility. And Analysis shows Significant volatility in daily sales.

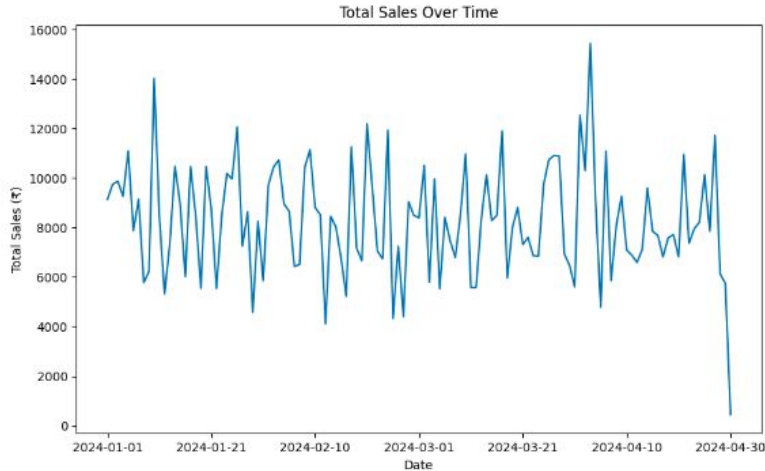


Fig3 - Graph of sales over time

- Analyzed sales data to identify the top 10 products contributing the most to revenue. And found that Products like “Kadhai medium” and “Patila 2L” are top revenue generators.

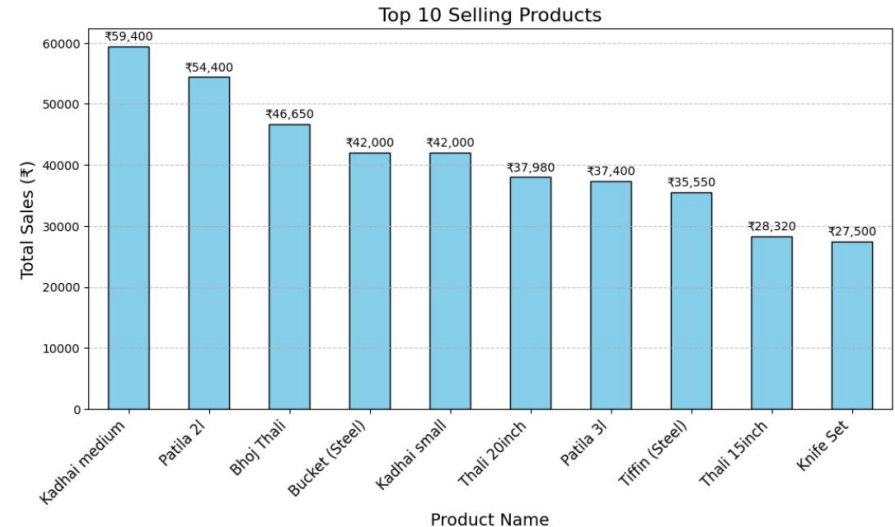


Fig 4 - Graph of Top Selling Products

ABC ANALYSIS

- Categorized products into three segments (A, B, C) based on their contribution to overall sales.
- Category A products generate 70-80% of revenue, while Category B and C contribute less.

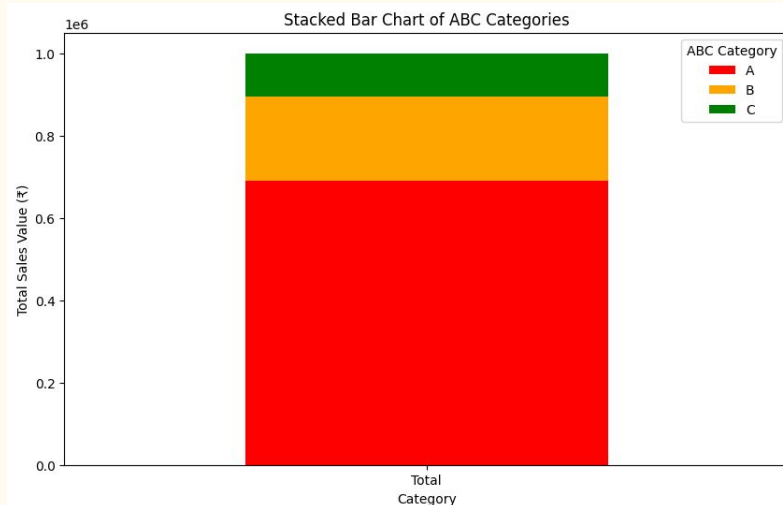


Fig 7 - ABC categorization Contribution of Products

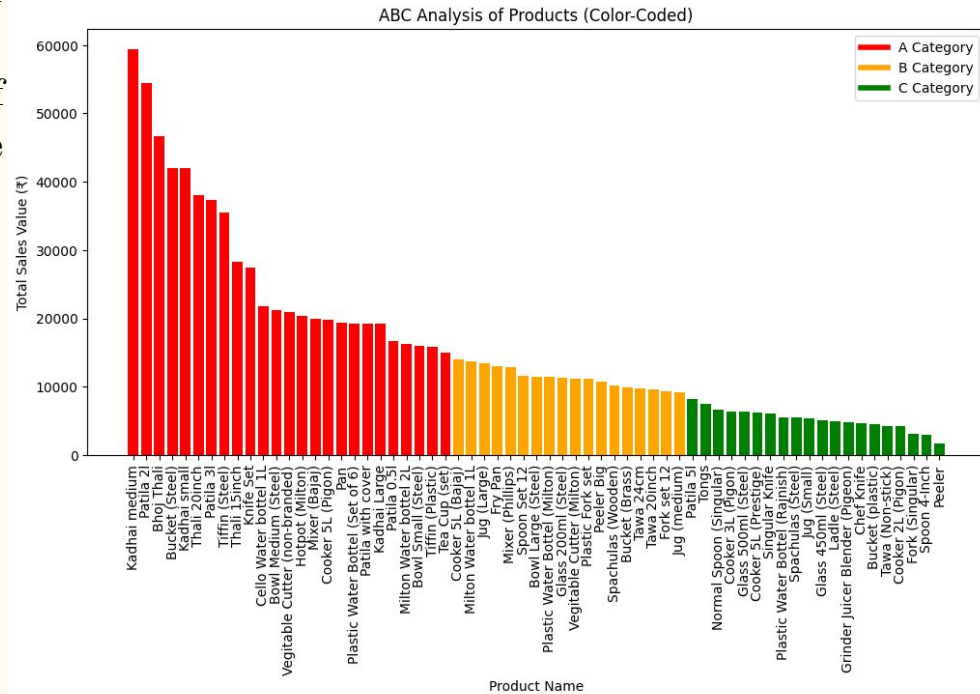


Fig 6 - ABC categorization of Products

PRODUCT PERFORMANCE ANALYSIS

- Segmented products into four categories: HRHQ, HRLQ, LRHQ, LRLQ, based on their revenue generation and sales volume.
- High Revenue and High Quantity (HRHQ) products are critical to the store's revenue.

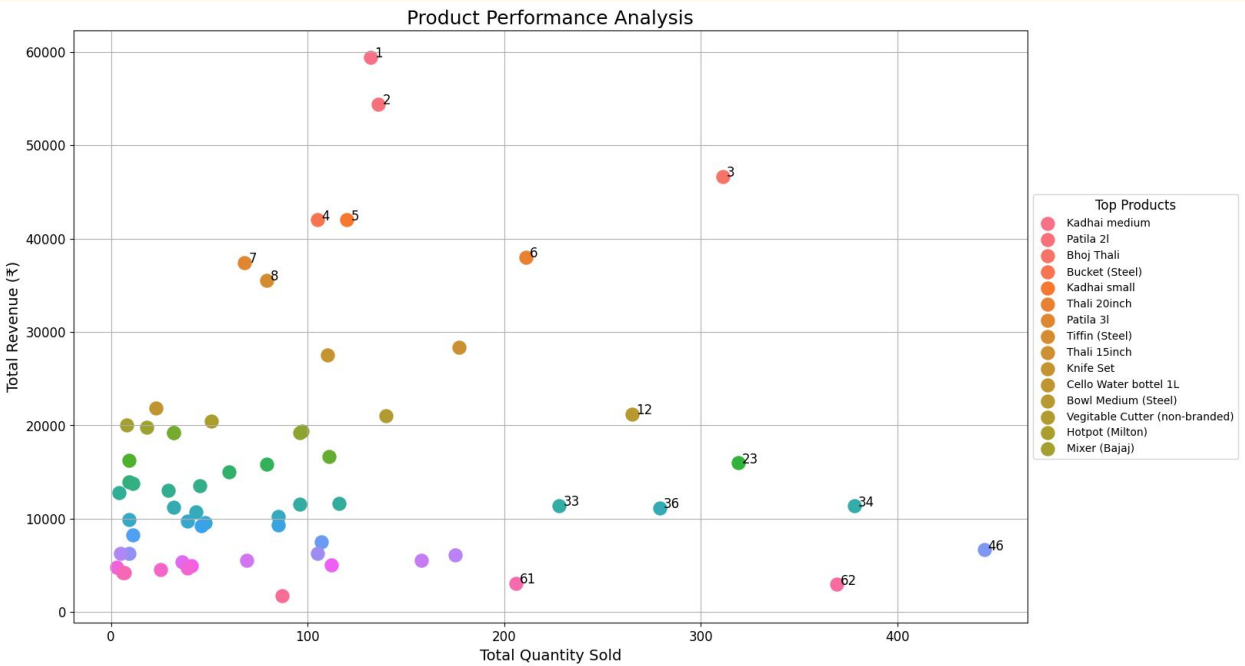


Fig 7 - Product performance analysis

Product name	Total Revenue (₹)	Total Quantity Sold
Kadhai medium	59400	132
Patila 2L	54400	136
Bhoj Thali	46650	311
Thali 20 inch	37980	211
Bowl medium	21200	265
Vegetable cutter	21000	140
Fig8 – HRHQ		

Product name	Total Revenue (₹)	Total Quantity Sold
Bucket (Steel)	42000	105
Kadhai small	42000	120
Patila 3L	37400	68
Tiffin (Steel)	35550	79
Knife Set	21200	110
Cello Waterbottle 1L	21850	23
Fig9 – HRLQ		

Product name	Total Revenue (₹)	Total Quantity Sold
Bowl Small (Steel)	15950	319
Plastic Water Bottel	11400	228
Glass 200ml (Steel)	11340	378
Plastic Fork set	11160	279
Singular Knife	6125	175
Fork (Singular)	3090	206
Fig10 – LRHQ		

Product name	Total Revenue (₹)	Total Quantity Sold
Peeler	1740	87
Cooker 2L (Pigon)	4200	7
Chef Knife	4680	39
Bucket (plastic)	4500	25
Cooker 5L (Prestige)	6250	5
Jug (medium)	9200	46
Fig11 – LRLQ		

REORDER POINTS AND SAFETY STOCK

- Calculated reorder points and safety stock levels to ensure efficient inventory management.
- Reorder points and safety stock levels are critical for maintaining optimal inventory and avoiding stockouts.
- In the table, the top 20 products are displayed along with their average daily demand, standard deviation of demand, safety stock levels, and reorder points.

Product Name	Average Daily Demand	Std Dev of Demand	Safety Stock	Reorder Point
Normal Spoon (Singular)	4.27	2.85	12.46	42.34
Glass 200ml (Steel)	3.82	2.56	11.2	37.92
Spoon 4-Inch	3.69	2.29	10.02	35.85
Bhoj Thali	3.66	2.13	9.3	34.91
Bowl Small (Steel)	3.43	2.0	8.74	32.75
Bowl Medium (Steel)	3.44	1.96	8.57	32.66
Plastic Fork set	3.28	2.05	8.95	31.93
Fork (Singular)	3.03	1.89	8.26	29.47
Plastic Water Bottel (Rajnish)	2.87	1.98	8.65	28.76
Plastic Water Bottel (Milton)	2.96	1.81	7.9	28.63
Singular Knife	2.87	1.86	8.11	28.19
Thali 20inch	2.97	1.62	7.08	27.88
Patila 0.5l	2.71	1.54	6.71	25.66
Patila 2l	2.67	1.4	6.09	24.76
Spoon Set 12	2.58	1.45	6.35	24.39
Peeler	2.49	1.5	6.56	23.96
Hotpot (Milton)	2.43	1.57	6.84	23.84
Thali 15inch	2.57	1.34	5.87	23.83
Jug (medium)	2.42	1.57	6.87	23.82

RECOMMENDATIONS FOR RISHABH ENTERPRISES

- **Focus on Low-Priced Products:** Continue to prioritize stocking a variety of low-budget items to align with the customer base's financial preferences.
- **Prioritize Top-Selling Products:** Ensure that top revenue-generating items like “Kadhai medium” and “Patila 2L” are consistently in stock to avoid missed sales opportunities.
- **Optimize Category B and C Inventory:** Manage inventory for Category B and C products carefully to avoid overstocking while preventing stockouts, maintaining balance across the product range.
- **Monitor and Adjust Reorder Points:** Follow calculated reorder points and safety stock levels to maintain optimal inventory, preventing stockouts and minimizing excess stock.
- **Reevaluate Low-Performing Products:** Regularly assess low revenue and low quantity products (LRLQ) to determine if they should be replaced or discontinued, ensuring the product mix is optimized for customer demand.

THANK YOU
