

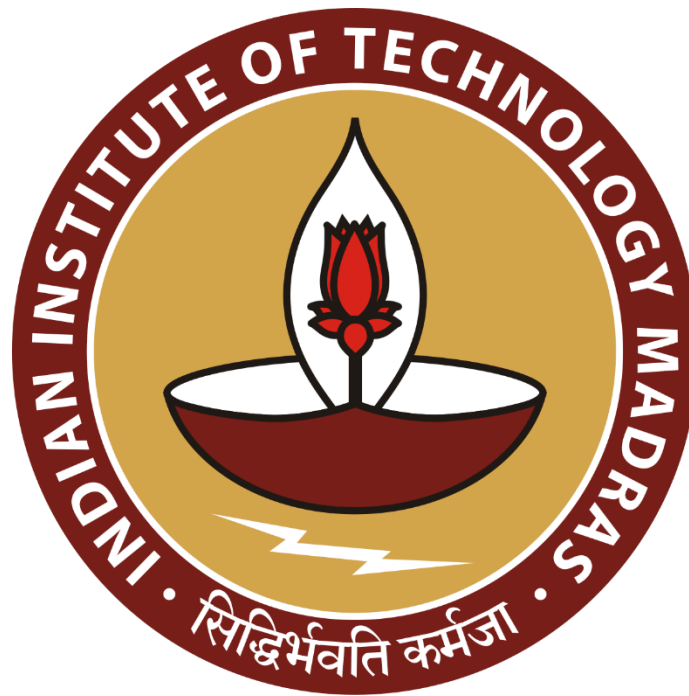
Sales Forecasting of Jain's kirana store

An End-Term report for the BDM capstone Project

Submitted by

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1. Executive Summary:

Jain's Kirana Store, located in Village Daulari, Dist. Moradabad, is a well established grocery store dedicated to serving our community with high quality products. As a B2C retail outlet, It aims to provide an exceptional shopping experience while ensuring a profitable and sustainable business model.

Currently, Jain's Kirana Store is facing a big challenge with too much inventory which is hurting its profit margins. Having more stock than it needs ties up its capital and creates financial pressure, making it hard for them to stay profitable.

To tackle this issue, Over a 12-week period, we collected sales and inventory data for 30 grocery items, allowing us to identify trends and assess product performance. Our analysis employs descriptive statistics, data visualization, inventory optimization, and comparative analysis to provide actionable insights.

Key findings indicate significant disparities among products, with some contributing substantially to overall profit while others underperform. By leveraging these analytical methods, Jain's Kirana Store can streamline inventory management, reduce stockouts and overstocking, and ultimately enhance profitability. The recommendations derived from this analysis will support informed decision-making, ensuring sustainable growth and improved financial health for the store.

2. Detailed Explanation of Analysis Process/Method:

To address the inventory management and profitability challenges at Jain's Kirana Store, I implemented a structured analysis process using Excel. The steps below outline the methods employed in analyzing sales, inventory, and profit data to enhance business performance.

2.1. Data Preparation

Objective:

The objective of data preparation is to organize the dataset in a structured format to ensure accuracy and clarity for analysis. The dataset contains weekly sales and inventory data for 30 different grocery items collected over a 12-week period.

At first, We collected the data and organized it..

- **Process:** Data was collected weekly over 12 weeks for 30 items. The dataset includes columns for:
 - Item: Name of the product
 - Already in stock: Remaining stock of last week
 - Quantity Purchased: Total quantity of items purchased
 - Total Stock: Remaining stock at the starting of each week
 - Quantity Sold: Total quantity sold during the period
 - Ending Inventory: Total stock at the end of each week
 - Cost per Unit: Purchase cost of each item
 - Total Cost: Total expenditure on each item
 - Selling Price per Unit: Sale price for each item
 - Total Revenue: Income from selling items
 - Stockout(Yes/No): Item out of stock or not

	A	B	C	D	E	F	G	H	I	J	K
1	Item	Already in Stock	Quantity Purchased	Total Stock	Quantity Sold	Ending Inventory	Cost per Unit	Total Cost	Selling Price per Unit	Total Revenue	Stockout (Yes/No)
2	Biscuits	50	100	150	50	100	9.40	940.00	10.00	500.00	No
3	Sugar	80	200	280	120	160	40.00	8,000.00	44.00	5,280.00	No
4	Tobacco	30	50	80	10	70	9.00	450.00	10.00	100.00	No
5	Tea	60	150	210	100	110	75.00	11,250.00	80.00	8,000.00	No
6	Milk	20	80	100	60	40	50.00	4,000.00	60.00	3,600.00	No
7	Bread	25	50	75	30	45	18.00	900.00	20.00	600.00	No
8	Oil	15	40	55	25	30	110.00	4,400.00	120.00	3,000.00	No
9	Rice	60	70	130	50	80	36.00	2,520.00	40.00	2,000.00	No
10	Flour	10	60	70	20	50	65.00	3,900.00	75.00	1,500.00	No
11	Salt	25	30	55	25	30	20.00	600.00	24.00	600.00	No
12	Soap	40	20	60	15	45	20.00	400.00	24.00	360.00	No
13	Detergent	35	25	60	20	40	100.00	2,500.00	110.00	2,200.00	No
14	Daal	45	30	75	20	55	130.00	3,900.00	140.00	2,800.00	No
15	Juice	10	20	30	15	15	38.00	760.00	40.00	600.00	No
16	Coffee	20	15	35	10	25	8.00	120.00	10.00	100.00	No
17	Sev	30	25	55	20	35	85.00	2,125.00	95.00	1,900.00	No
18	Noodles	15	30	45	20	25	12.00	360.00	14.00	280.00	No
19	Spices	50	10	60	5	55	36.00	360.00	40.00	200.00	No
20	Jam	25	15	40	10	30	85.00	1,275.00	90.00	900.00	No
21	Mustard	20	10	30	5	25	42.00	420.00	48.00	240.00	No
22	Honey	10	5	15	2	13	450.00	2,250.00	475.00	950.00	No
23	Poha	30	25	55	15	40	50.00	1,250.00	60.00	900.00	No
24	Chocolates	20	15	35	10	25	38.00	570.00	40.00	400.00	No
25	Biscuits bakery	15	20	35	15	20	40.00	800.00	50.00	750.00	No
26	Soft Drinks	25	20	45	25	20	38.00	760.00	40.00	1,000.00	No
27	Nescafe Coffee	10	10	20	10	10	42.00	420.00	45.00	450.00	No
28	Pickles	30	15	45	10	35	95.00	1,425.00	100.00	1,000.00	No

+ ≡ week 1 ▾ week 2 ▾ week 3 ▾ week 4 ▾ week 5 ▾ week 6 ▾ week 7 ▾ week 8 ▾ week 9 ▾ week 10 ▾ week 11 ▾

2.2. Data Cleaning

Objective:

Ensure the dataset is clean and consistent for accurate analysis.

Process:

- **Handling Missing Values:** Any missing or incomplete data was reviewed. Missing values were filled using logical assumptions. For example, if stockout data was consistent and ending inventory was zero, sales were assumed to be zero for the item.

- **Consistency Checks:** Verification was performed by cross-checking stock and sales figures with purchases, using the formula:
Ending Inventory = Total Stock – Quantity Sold
Any discrepancies were corrected to ensure consistency.

2.3. Descriptive Analytics

Objective:

The goal of descriptive analytics is to provide insights into the sales and inventory performance of Jain's Kirana Store by calculating key metrics such as average stock levels, sales quantities, profit margins, and variances.

I have conducted descriptive analysis to summarize and understand key metrics related to sales and inventory. This analysis helps us identify trends and patterns in our data, allowing us to make informed decisions about inventory management and improve profitability.

- **Excel Functions Used:**
 - AVERAGE: To calculate the average quantity purchased for each item.
 - STDEV: To calculate the standard deviation (variance) of sales for each item.
 - SUM: To calculate total stock, sales, and revenue for each product.
 - MIN/MAX: To identify stockout scenarios and overstock levels.
 - PIVOT TABLES: Used to summarize total sales, average purchase quantities, and total stock across all 12 weeks.
- **Purpose:** To calculate central tendencies and variances for key metrics, such as:
 - Average quantity purchased
 - Total stock levels
 - Profit margins

Justification:

By understanding the central tendencies (average sales, stock levels) and variances (stockouts, overstocking), the store can better manage inventory, Purchase items according to the requirement and improve profitability. Descriptive analytics also identifies which items contribute most to revenue and profit, supporting decisions on which items to prioritize or eliminate.

Findings:

- The item with the highest sales is Sugar. which is sold 1335 kgs and made the second highest revenue of 58740.
- The item with the lowest sales is Honey. which sold 74 kgs and made a revenue of 35150.
- The minimum profit on a unit is 0.6 on biscuits and it is also a loss item for the shop.

We can see the descriptive statistics. This summary is providing a comprehensive overview of the dataset's characteristics, helping in the analysis and decision-making process.

Metric	Quantity Pt	Total Stock	Quantity Sc	Cost per Ur	Total Cost	Selling Pric	Total Rever	# Profit f	# Total P	# Profit Margin %
Count	28	28	28	28	28	28	28	28.00	28.00	28.00
Mean	316.33	346.15	310.44	64.50	15912.85	70.22	17136.67	5.73	1,515.59	0.10
Standard Deviat	273.81	286.82	272.7	82.25	14910.1	86.65	16088.47	4.96	1,383.70	0.05
Range	1233	1303	1261	442.00	61034	465.00	66060	24.40	5,090.00	0.15
Variance	74974.59	82264.5	74366.84	6765.35	222310998.4	7508.99	258838764.8	24.56	1,914,619.28	0.00
Minimum	87	97	74	8.00	1216	10.00	1540	0.60	250.00	0.05
Maximum	1320	1400	1335	450.00	62250	475.00	67600	25.00	5,340.00	0.20

2.4. Data Visualization

Objective:

Create visual representations of data trends to highlight inventory and sales performance, identify top-performing products, and understand profit margins over the 12-week period.

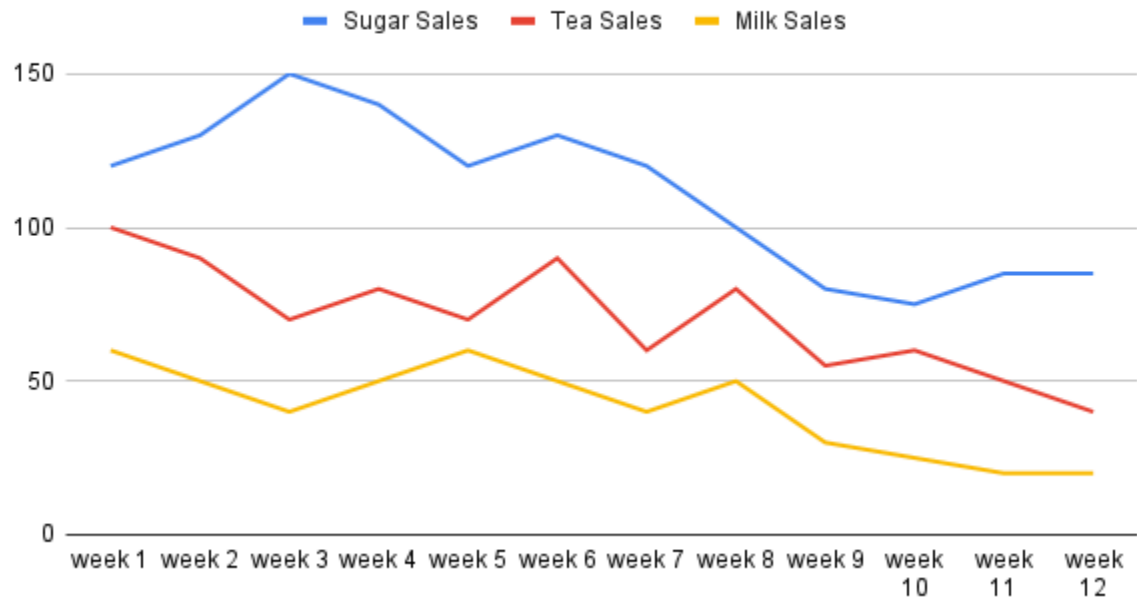
I have conducted data visualization to transform the sales and inventory data at Jain's Kirana Store into clear visual insights. This approach enables us to effectively identify trends and patterns, facilitating informed decision-making regarding inventory management and strategies for enhancing profitability.

Visualizations for Key Metrics:

- **Sales Trends for top selling products:**

What it Shows: Weekly sales trends for The top selling products.

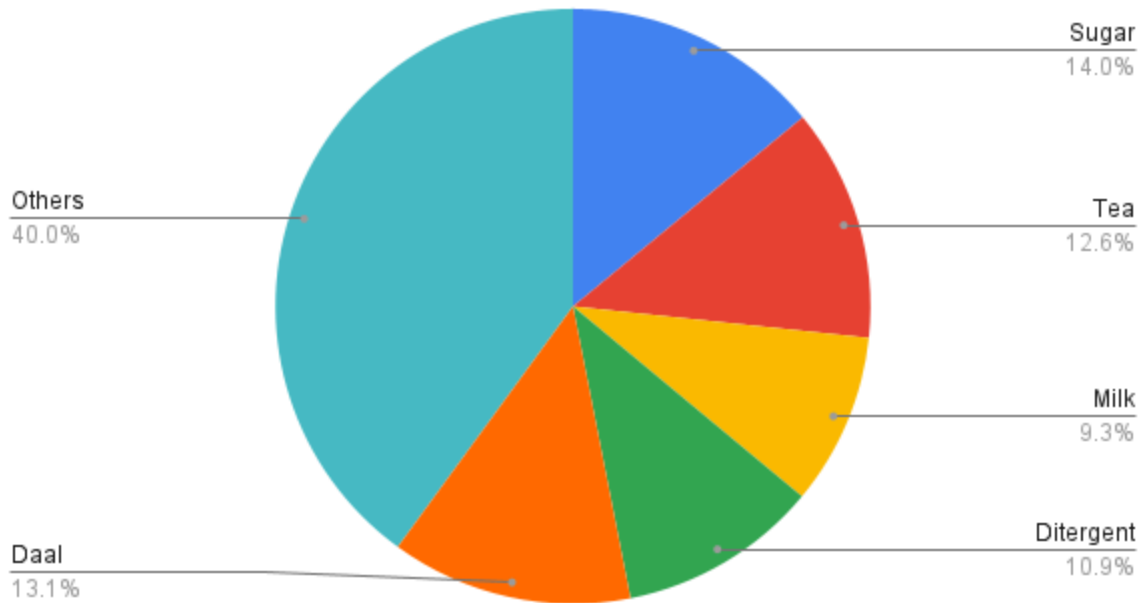
Fig 2.1: Top Selling Product



Insights: This shows a steady decline in our top selling products.

- Sugar appears to be the most volatile product, experiencing significant fluctuations.
- Tea and Milk both show a downward trend over the entire period, with milk sales hitting a particularly low point in the final weeks.
- **Product Profitability (Pie Chart)**
 - **What it Shows:** The pie chart displays the percentage contribution of Top 5 products to the total profit across all 28 products. It highlights which products are the primary drivers of profitability and which contribute less to the overall profit margin.

Profit



- **Insights:**

- Top Contributors:**

- Sugar (14.04%), Tea (12.65%), and Daal (13.12%) are the most profitable products, making up over 40% of the total profit.
 - These products should be prioritized for promotion, supply chain management, and inventory planning to maintain or even enhance their performance.
 - By increasing marketing efforts or offering bundles featuring these top performers, We can boost sales further.

- Low Performers:**

- The **"Others"** category, which represents **39.98%** of total profit, includes the remaining **23 products**. This suggests that while these products may be important for diversifying the product mix, they individually have lower profitability compared to the top contributors.

Some Key Findings from data Visualization:

- **Top Profit Earners:**

- Sugar generated the highest total profit of ₹5340, contributing 14.04% to the total profit, followed by Tea with ₹4225 (12.65% of total profit).
- **Highest Profit Margin:**
 - Milk has the highest Profit Margin % at 16.67%, followed by Sev (10.53%). This indicates better profitability compared to other items in the inventory.
- **Low-Performing Items in Terms of Profit:**
 - Tobacco, with a profit of ₹250, accounted for only 0.06% of the total profit. It is one of the lowest contributors to profit margin and revenue, signaling an area for improvement.
- **Best-Selling Products (By Quantity Sold):**
 - Sugar and Tea are the best-selling items with 1335 and 845 units sold, respectively. These items are strong contributors to both total revenue and profit.
- **Revenue Contributors:**
 - Tea and Sugar also stand out in terms of total revenue, with Tea contributing 14.40% and Sugar contributing 12.51% to the total revenue, showing their significant sales performance.

3. Results and Findings:

Results Overview:

- Total items sold over 12 weeks: 8,408
- Total expenditure: ₹4,27,112
- Total revenue: ₹4,69,414
- Total profit: ₹42,302

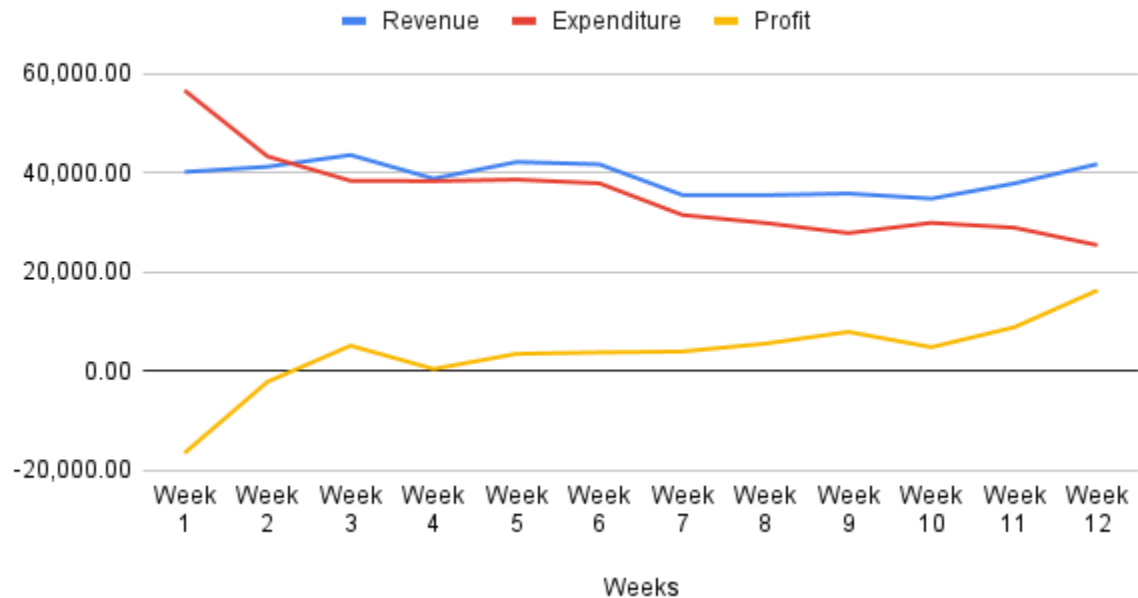
From the data:

- Sugar sold the most units (1,335 units), contributing significantly to profit with a margin of 9.09% and a total profit of ₹5,340.
- Milk showed the highest profit margin of 16.67%, generating ₹4,950 in total profit.
- Tea also performed well, with a total profit of ₹4,225 and a margin of 6.25%.
- Low-Volume, High-Cost Products like Honey, Daal, and Pickles contribute significantly to overall revenue despite fewer units sold.
- Products with low profit margins such as Coffee, Chocolates, and Tobacco might need attention to improve pricing or cost control strategies.

Visual Insights:

1. **Line Chart:** Trends in revenue, expenditure, and profit over the 12-week period.

Revenue, Expenditure and Profit



- **Interpretation:** Illustrates steady revenue, decreasing expenditure, and increasing profit towards the end of the analysis.

Revenue Fluctuation:

- There is a slight fluctuation in revenue from week to week, but there is a general trend where revenue remains within a narrow range (around 34,000 to 42,000).
- Week 1 has the highest revenue (40,210) but Week 3 (43,625) also shows a peak, after which the revenue tends to stabilize, with some weeks showing slight dips (e.g., Week 7: 35,555).

Expenditure Fluctuations:

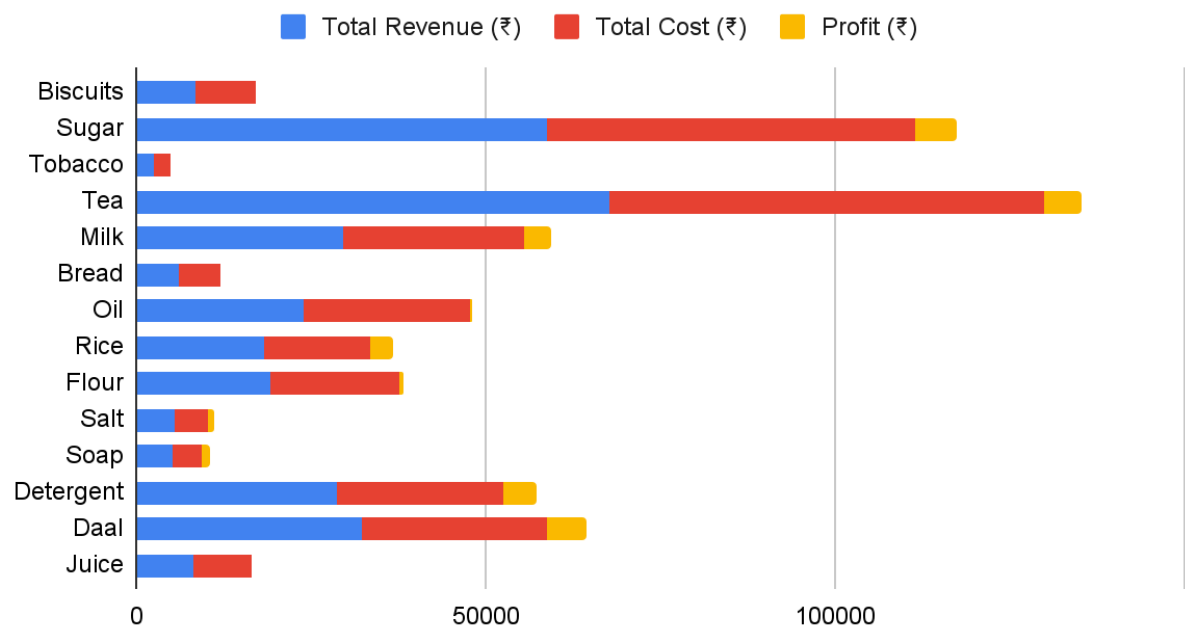
- Expenditure has a more noticeable variation compared to revenue. Week 1 has the highest expenditure (56,655), and while there are periods of slight reduction, the expenditure decreases significantly by Week 12 (25,457).
- In general, expenditures seem to be gradually decreasing over the 12-week period, which is a positive sign for cost control.

Profit Trends:

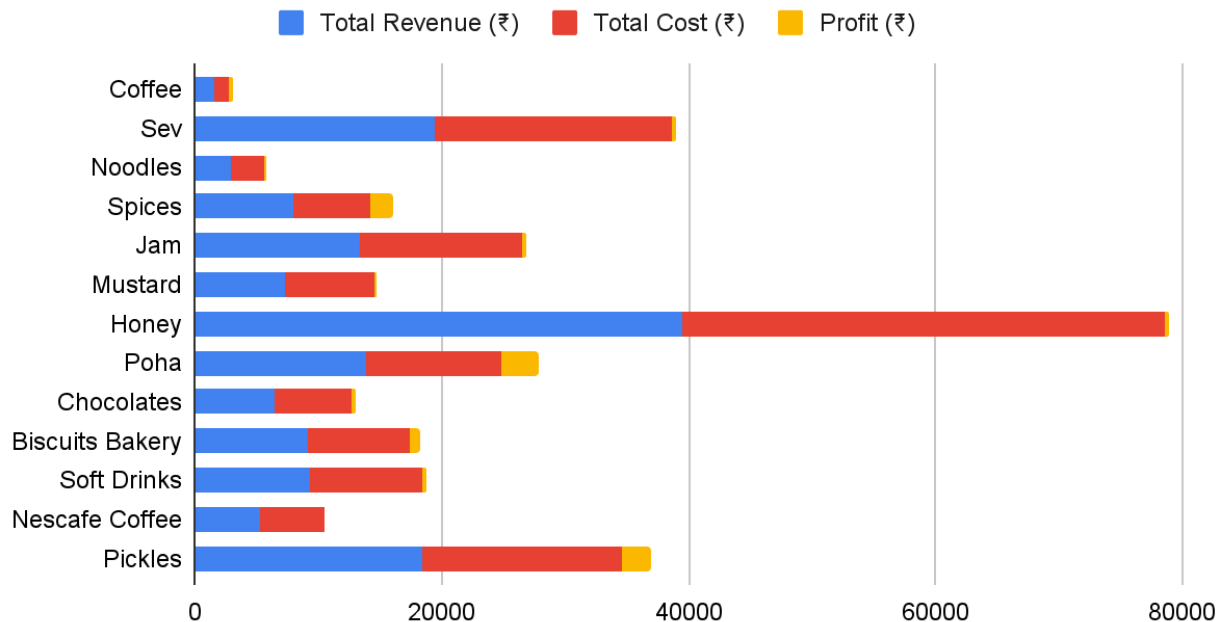
- In the first few weeks (Week 1 to Week 2), the business is operating at a loss (negative profits of -16,445 and -2,077).
- From Week 3 onwards, the profit becomes positive, and it gradually increases, with Week 12 showing the highest profit of 16,343.
- The profit trend seems to stabilize as the weeks progress.

2. Bar Chart: Comparison of revenue and profit contributions by product.

Revenue and Profit Contributions by Product



Revenue and Profit Contributions by Product



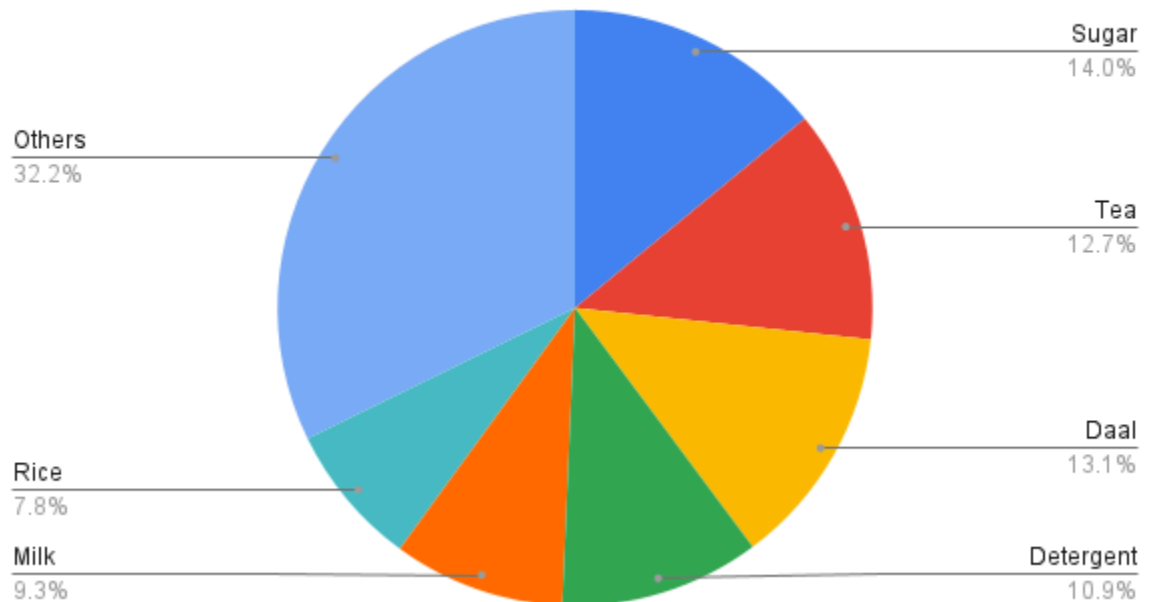
○ Interpretation:

- Sugar and Tea are the top performers in both revenue (₹58,740 and ₹67,600 respectively) and profitability (₹5,940 and ₹5,350 respectively) making them core products for Jain's Kirana Store.
- Detergent, Daal, and Poha show good profit margins relative to their sales, indicating potential for continued focus on these items. The profit margins for these products are ₹4,600, ₹5,550, and ₹2,920 respectively, which are relatively strong compared to their revenue.
- Honey, Jam, Nescafe Coffee, and Tobacco need attention due to poor profit margins and/or low profitability. Products like these might benefit from price restructuring or promotion strategies to boost profitability. Honey, despite its high revenue of ₹39,425, has a very low profit contribution of ₹275, suggesting that either the cost of goods is high or pricing is too low, leaving very little margin to work with.
- Items like Nescafe Coffee (revenue: ₹5,265, profit: ₹15) and Tobacco (revenue: ₹2,500, profit: ₹25) show a profit margin of around 8-9%, but their low profitability is primarily due to higher quantities purchased. These products may not need to be phased out, but instead could benefit from better inventory management to avoid overstocking. By optimizing purchase quantities and focusing

on better stock turnover, Jain's Kirana Store could improve profitability without needing to make drastic changes in pricing.

3. Pie Chart: Proportionate contribution of each product to total profit.

Profit Contribution



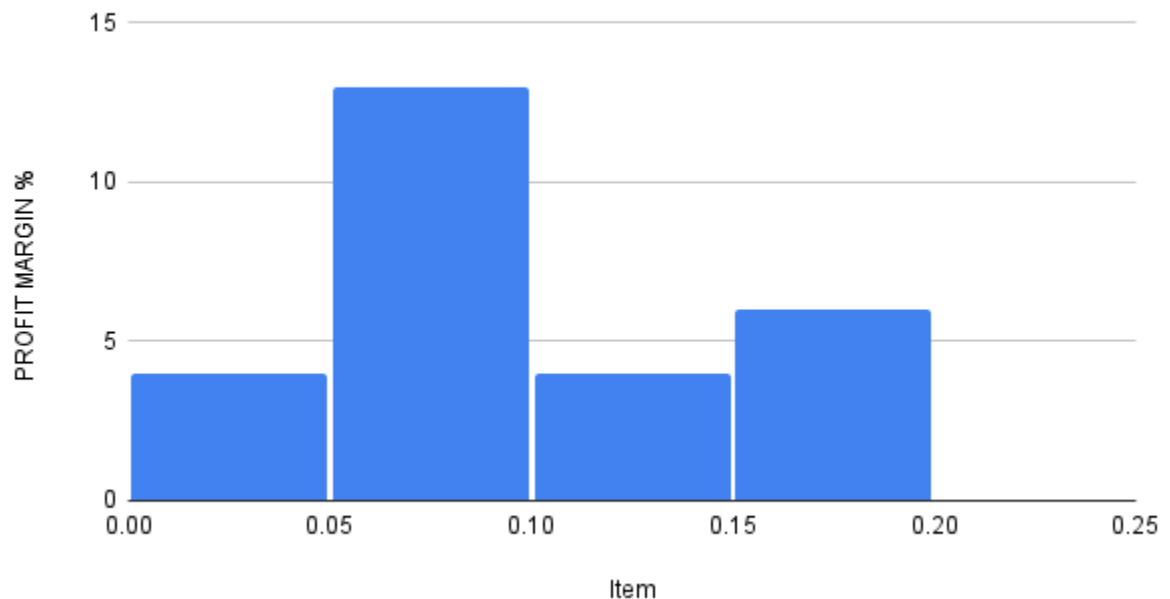
○ **Interpretation: Indicating Pareto Principle:**

- 67.77% of profit is generated by the top 20% of products (6 items), which is close to the 80% mark, but not exactly the 80/20 split. This suggests that the profit distribution is not a perfect 80/20 case, but it's Pareto-like, with a small number of products driving a large portion of your revenue.
- The remaining 22 products contribute 32.23% of total profit, which suggests that these products still have meaningful contributions to overall profitability, but they do not generate as much profit individually as the top performers.
- The top-performing products (Sugar, Tea, Daal, Detergent, Milk, Rice) are the key drivers of profitability. These are likely high-margin or high-volume products. Ensuring their continued availability, marketing, and focus will be essential to maintaining or increasing your profit levels.
- Focus on Top Performers: Given that the top 6 products contribute 67.77% of the total profit, you should continue to focus on these products for maximizing profitability, keeping them well-stocked, promoting them, and perhaps even improving pricing.

- **Optimize Inventory:** Products with small contributions to profit may be taking up valuable shelf space or inventory. Consider optimizing stock levels to ensure that you're not overstocking low-performing items, which could tie up cash flow.

4. **Histogram:** Distribution of profit margins across all items.

PROFIT MARGIN HISTOGRAM CHART



Distribution of Products by Profit Margin Range:

0% - 5% (Low Profit Margin)

- **Number of Products:** 4
- **Products:** Juice, Chocolates, Soft Drinks, Pickles
- **Interpretation:**
 - **Low Margin Products:** These products have the lowest profitability. While these may contribute to overall sales volume, they offer minimal profit.
 - **Actionable Insight:** We should consider reviewing the pricing structure, cost of goods, or supplier negotiations for these products. In some cases, it might be worth considering whether these items are necessary to carry in the store or if their pricing could be adjusted to improve margins.
 - **Focus:** Increasing the profit margin on these products should be a priority. You can either try to raise the price (if the market allows) or

reduce the cost of goods (perhaps by finding cheaper suppliers or reducing waste).

5% - 10% (Moderate Profit Margin)

- **Number of Products:** 13
- **Products:** Biscuits, Sugar, Tea, Oil, Detergent, Daal, Jam, Rice, Bread, Tobacco, Spices, Honey, Nescafe Coffee
- **Interpretation:**
 - **Moderate Margin Products:** This category contains a larger number of products that contribute modest profits. Many essential daily-use items (like Sugar, Oil, Tea) are likely in this range, which means they have steady demand but relatively low profitability.
 - **Actionable Insight:** While these products are important for store sales, their profitability could be enhanced by improving inventory management, adjusting pricing strategies, or finding cost savings. We might also focus on upselling or bundling these products with higher-margin items.
 - **Focus:** Targeting small improvements in the profit margin for these products could significantly impact overall profitability, given the higher number of products in this range.

10% - 15% (Good Profit Margin)

- **Number of Products:** 4
- **Products:** Flour, Sev, Noodles, Mustard
- **Interpretation:**
 - **Good Margin Products:** A low proportion of products fall within this range, suggesting that the store has not a solid mix of moderately profitable items. These products likely represent good value for both customers and the business.
 - **Actionable Insight:** These products are strong contributors to profitability and could be highlighted in promotions or loyalty programs to drive more sales. These products should be well-managed to ensure that their margins remain strong.
 - **Focus:** Continuing to optimize inventory, minimizing stockouts, and maintaining competitive pricing should help protect the margins on these products. Also, ensure product quality to maintain customer loyalty.

15% and Above (High Profit Margin)

- **Number of Products:** 6
- **Products:** Milk, Salt, Soap, Coffee, Poha, Biscuits Bakery
- **Interpretation:**
 - **High Margin Products:** These products provide strong profitability relative to their cost. Although there are fewer products in this range, they make a significant contribution to overall profits.
 - **Actionable Insight:** These high-margin products should be treated as core profit drivers for the store. You should consider promoting them more heavily, as their profitability is much higher. They may also offer opportunities for price increases without significantly impacting demand.
 - **Focus:** These products are ideal for marketing campaigns or special offers, which can help to increase both sales volume and profitability. They are also key candidates for product bundling with lower-margin items to drive up overall store profitability.

5. Heat Map: The Sales-to-Stock Ratio measures how efficiently the inventory is being sold, and the higher the ratio, the better the performance in terms of stock turnover.

Interpretation:

- Rice has the highest ratio at 0.9583, showcasing its strong position in the market. Given that rice is a staple product, it suggests that it has consistent, repeat demand. It would be beneficial to continue optimizing stock levels to avoid shortages, ensuring supply always meets demand.
- Sugar and Tea also demonstrate high turnover rates, 0.9536 and 0.9494, respectively. These items likely see regular, high-volume purchases. Since these products are essential household items, maintaining a consistent supply and exploring bulk promotions or discounts could drive further sales.
- Detergent, with a ratio of 0.9455, also signals good sales performance. Cleaning products often have steady demand, especially in household essentials, so ensuring shelf visibility and reinforcing brand loyalty could maintain or further improve this performance

Item	Total Stock	Quantity Sold	Sales to stock ratio
Biscuits	950	850	0.894736842
Sugar	1400	1335	0.953571429
Tobacco	305	250	0.819672131
Tea	890	845	0.949438202
Milk	535	495	0.925233645
Bread	355	300	0.845070423
Oil	230	200	0.869565217
Rice	480	460	0.958333333
Flour	295	255	0.864406780
Salt	260	230	0.884615385
Soap	240	220	0.916666667
Detergent	275	260	0.945454545
Daal	250	230	0.920000000
Juice	225	208	0.924444444
Coffee	172	154	0.895348837
Sev	255	205	0.803921569
Noodles	235	210	0.893617021
Spices	225	200	0.888888889
Jam	180	149	0.827777778
Mustard	190	153	0.805263158
Honey	97	83	0.855670103
Poha	250	232	0.928000000
Chocolates	182	164	0.901098901
Biscuits bakery	220	183	0.831818182
Soft Drinks	265	235	0.886792453
Nescafe Coffee	135	117	0.866666667
Pickles	200	185	0.925000000

- Sev (0.8039): This item has the lowest sales-to-stock ratio, suggesting a poor turnover. It could be underperforming due to competition from other snacks, changes in consumer preferences, or lack of promotion. A closer look at regional consumption habits and possible taste shifts may help in understanding why it's not moving quickly.

- Mustard (0.8053): Similar to sev, mustard may not be seeing enough demand. It could also be tied to seasonal consumption or limited consumer interest. It may benefit from repositioning in marketing or being offered in combination with complementary products (e.g., pickles or sauces).
- Tobacco (0.8197): Despite being a product with high potential due to its steady consumer base, tobacco may be facing regulation, competition, or other barriers that reduce its turnover. A better understanding of pricing strategies, consumer preferences, and potential legal constraints will be essential to increase sales.
- Jam (0.8278): Jam could be suffering from oversupply or the increasing popularity of alternative spreads (like peanut butter or honey). Reviewing packaging sizes, promotional offers, and expanding the flavor range may help increase its sales.
- Biscuits Bakery (0.8318): Biscuits are generally a staple, but Biscuits Bakery may be struggling to differentiate itself from other brands. It could be suffering from either overpricing, insufficient distribution, or not enough consumer recognition. A strategic rebranding or promotional push could improve its market standing.

4. Interpretation of Results and Recommendations:

Interpretation of Results:

1. Revenue and Expenditure Trends:

- **Revenue:** The steady revenue fluctuations, with minor peaks in Weeks 1 and 3, reflect that demand for products remains relatively stable. Although Week 7 had a slight dip, overall, the business is able to generate consistent revenue. The fluctuation within the range of ₹34,000 to ₹42,000 suggests a market that is maintaining a steady demand for the products.
- **Expenditure:** A significant reduction in expenditure by Week 12 indicates improvements in cost control and operational efficiency. The highest expenditure in Week 1 (₹56,655) is gradually reduced to ₹25,457 by Week 12. This suggests a positive trend in managing costs, whether through better negotiation with suppliers or more efficient inventory management.
- **Profit:** The loss during the initial weeks (Week 1 and Week 2) indicates that the business faced some initial challenges, but the business gradually

turned profitable from Week 3 onwards. By Week 12, the business has achieved a notable profit (₹16,343), indicating a steady increase in operational effectiveness and revenue generation. The profit margin improvement is likely a result of better cost management and the optimization of high-margin products.

2. Product Performance:

- **Top Performers:** Sugar, Tea, and Milk stand out as key revenue and profit drivers. These products not only generate substantial revenue but also contribute to profitability due to their relatively high margins.
- **Low-Volume, High-Cost Products:** Products like Honey, Daal, and Pickles, while having fewer units sold, contribute significantly to revenue. However, their profitability is more reliant on their higher cost, which could signal an opportunity to optimize pricing strategies or reduce procurement costs.
- **Low-Profit Margin Products:** Items such as Coffee, Chocolates, and Tobacco have low profit margins, which may be attributed to either high procurement costs or aggressive pricing. These products could benefit from price adjustments or cost optimization strategies.

3. Profit Distribution (Pareto Analysis):

- The Pareto principle holds true to some extent, with the top 20% of products (Sugar, Tea, Daal, Detergent, Milk, and Rice) driving a significant portion (67.77%) of the profit. This highlights that focusing on these key products can generate a large share of the total profits.
- The remaining 22 products contribute 32.23% of the total profit, indicating they still play a role but could be optimized in terms of profitability and stock management.

4. Profit Margins Distribution:

- **Low Margin (0-5%):** Products like Juice, Chocolates, and Soft Drinks contribute to sales volume but are not highly profitable. These items could benefit from a reassessment of their pricing structure, cost negotiations with suppliers, or reconsideration of their place in the product mix.
- **Moderate Margin (5-10%):** Products in this category (like Biscuits, Sugar, Oil, Tea, Daal) show steady demand but could benefit from slight price increases or cost-saving measures.
- **Good Margin (10-15%) and High Margin (15%+):** Products like Flour, Sev, Milk, and Poha have good profit margins and should be highlighted as key contributors to profitability. Ensuring these products remain competitively priced and stocked will be crucial to sustaining their performance.

5. Sales-to-Stock Ratio:

- High-performing items such as **Rice, Sugar, and Tea** exhibit strong sales-to-stock ratios, reflecting that these items are moving quickly and meeting consumer demand. Inventory for these items should be carefully managed to avoid shortages.
- **Low Turnover Products** like **Sev, Mustard, and Jam** show weak sales performance. This suggests that either these items are not in high demand or face stiff competition. Reassessing their positioning, promotional strategies, and pricing could help improve their sales performance.

Recommendations:

1. Focus on High-Margin Products:

- Prioritize products like **Milk, Tea, Sugar, Poha, and Detergent**, as they contribute significantly to profitability. Consider enhancing their visibility in-store and promoting them through targeted marketing campaigns, loyalty programs, or bundle offers with complementary low-margin products.

2. Optimize Low-Margin Products:

- Products like **Coffee, Chocolates, and Tobacco**, which have low profit margins, should be assessed for potential price increases or cost-reduction strategies. In the case of **Tobacco**, understanding market constraints and optimizing stock levels could help improve profitability without alienating customers. Consider streamlining the range of such products and removing those that contribute the least to the bottom line.

3. Reevaluate Pricing and Cost Structures for Low-Performing Items:

- Products like **Honey** and **Jam** have low profit contributions despite higher revenues. These items could benefit from a thorough review of pricing or procurement strategies. There may be opportunities to negotiate better supplier terms or improve stock turnover to boost profitability.

4. Inventory Management Optimization:

- The **Sales-to-Stock Ratio** for items like **Sev, Mustard, and Jam** is low, indicating poor stock turnover. A review of demand patterns and potential regional variations in product preferences could help reallocate inventory more effectively. These products might benefit from stronger promotional strategies, rebranding, or bundling with more popular items to boost sales.

5. Stock Monitoring and Procurement Adjustments:

- Continue to monitor the **sales-to-stock ratio** for all products, especially high-performing items like **Rice** and **Sugar**. Maintaining optimal stock levels for these fast-moving products is essential to meet demand while avoiding excess inventory. For slow-moving items, reduce procurement

and explore bundling with other products to move inventory more effectively.

6. Enhance Profitability via Promotions and Upselling:

- Consider bundling low-margin, high-volume products (like **Juice**, **Biscuits**) with high-margin, high-demand items to increase the overall value of each sale. Promotions, discounts, and loyalty rewards on core products like **Milk** and **Rice** could also encourage repeat purchases, driving both sales and profitability.

7. Adjust Product Offering Based on Regional Preferences:

- Given the varying sales patterns, there may be regional differences in product preferences. Products like **Sev** and **Mustard** could be adjusted based on local consumer tastes. Conducting a market survey or analyzing local buying patterns might help tailor the product mix to consumer preferences and seasonal demand.

By implementing these strategies, Jain's Kirana Store can further optimize its product offerings, improve cost control, and boost profitability.

5. Presentation and Legibility of the Report:

This report is structured for clarity and ease of understanding, featuring:

- Clear Headings: Distinct sections with bold titles for easy navigation.
- Bullet Points and Numbered Lists: To highlight key points and findings succinctly.
- Visual Aids: Graphs and charts that are clearly labeled and interpreted, ensuring that insights are accessible to a diverse audience.
- Consistent Formatting: Uniform font and spacing enhance readability, making the report engaging and professional.

Dataset link - [Dataset](#)

Folder Link For Presentation and Images - [Folder](#)