

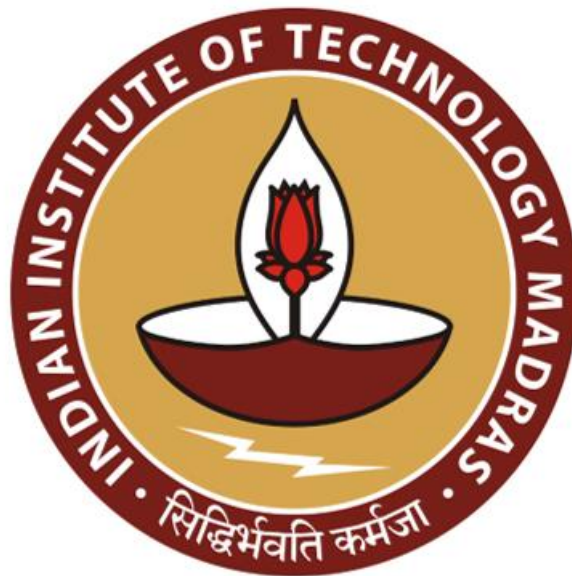
Analysis on Om Prakash and Sons Store

Mid-Term report for the BDM Capstone Project

Submitted by:

Name: Mehul Sharma

Roll Number: 23F2003946



IITM Online BS Degree Program

Indian Institute of Technology, Madras

Chennai Tamil Nadu, India, 600036

Title: **Analysis on Om Prakash and Sons Store**

1) Executive Summary

Organisational Details:

Om Prakash and Sons, a medium-sized kirana store located at Shop Number- 3B/12, Near Post Office, Ramesh Nagar, New Delhi, 110015, was established in 2010. It is owned by Om Prakash Arora. The store has been serving the community from last 14 years. Known for their excellent credit system, they have built a loyal customer base by providing convenient and reliable service.

Business Problem:

After having constant interactions with the proprietor, I found that despite of having a very strong customer relation, they face problems like:

- Inability to manage stock. They find it difficult to manage supply and demand while optimising inventory turnover.
- Difficulty in choosing the right product assortment
- The store finds it difficult to meet its projections in terms of net profit.

Approach:

I will be using excel to process the data. Tools that will be used for the analysis are as follows:

- ❖ Pivot tables for identifying various trends within the data.
- ❖ For data visualisation, we will be using pie charts, histograms, scatter plots, pivot charts etc.
- ❖ Various Excel functions like VLOOKUP, COUNTIF, COUNTIFS, Boolean operators etc.

Expected Outcome:

- Finding ways to optimise the store's inventory.
- Better understanding on how to increase the net profit by analysing their sales.


- Finding which products have a high return percentage by analysing their cost price, selling price and many more things.


2) Proof of originality of the data

(2.1) Letter from the organisation

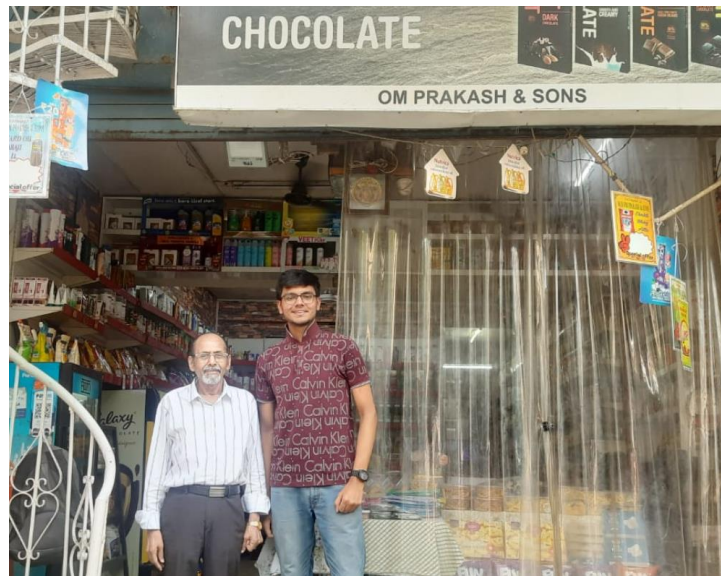
Consent for the Project of Business Data Management

I, Om Prakash Arora, owner of Om Prakash and Sons, located at Shop Number-3B/12, Near Post Office, Ramesh Nagar, Delhi, 110015, hereby give my consent to Mehul Sharma for the analysis of my business data for his academic project at IIT Madras. I understand that the data will be used solely for academic purposes and that the findings will be shared with me to help improve business performance.


Signature
(Mr. Om Prakash Arora)


Stamp
(Official stamp of Om Prakash And Sons)

(2.2) Image with the owner (Mr. Om Prakash Arora)



(Shop)

38/12 RAMESH NAGAR NEW DELHI 110015

PARTICULARS	RECEIPT	PAYMENT	BALANCE
Opening	65915993.00		Upto : 01/02/2024
Apr., 2023	786649.00		66702642.00 Dr
May., 2023	878593.00		67581235.00 Dr
Jun., 2023	821573.00		68402808.00 Dr
Jul., 2023	940803.00		69343611.00 Dr
Aug., 2023	1083094.00		70426705.00 Dr
Sep., 2023	924684.00		71351589.00 Dr
Oct., 2023	1144371.00		72495960.00 Dr
Nov., 2023	965505.00		73461465.00 Dr
Dec., 2023	1005859.00		74467324.00 Dr
Jan., 2024	1008860.00		75476184.00 Dr
Feb., 2024	28101.00		75504285.00 Dr
Mar., 2024			
TOTAL	75504285.00	0.00	

OM PRAKASH AND SONS
Regd. Office: ATULAKH NAGAR, NEW DELHI
Regd. No.: 10344001
38/12 RAMESH NAGAR, NEW DELHI
DELHI-110015

(Their Financials)

2.3 Recorded video with the founder (Link)

https://drive.google.com/file/d/15WSta6j8xsb5UFSUVNpPzmXkkAcaylYe/view?usp=s_haring

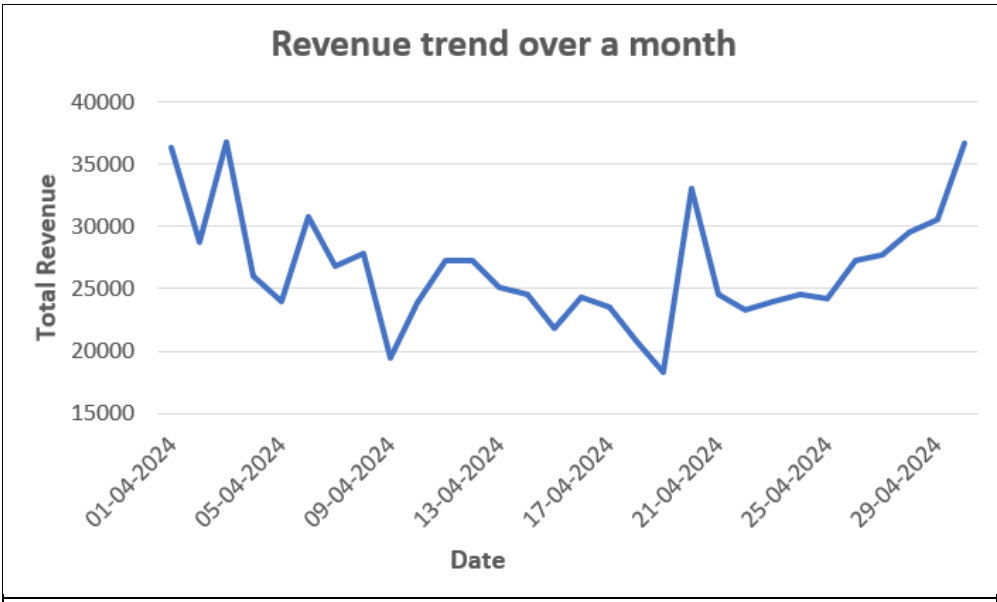
3) Metadata and Descriptive Statistics

I have meticulously gathered an extensive 30 days dataset, commencing from the 1st April 2024 and extending until the 30th April 2024. Throughout this period, my data collection approach involved a combination of daily visits to the shop and strategically timed alternate-day visits, allowing me to compile a comprehensive set of cumulative data encompassing the entire time span.

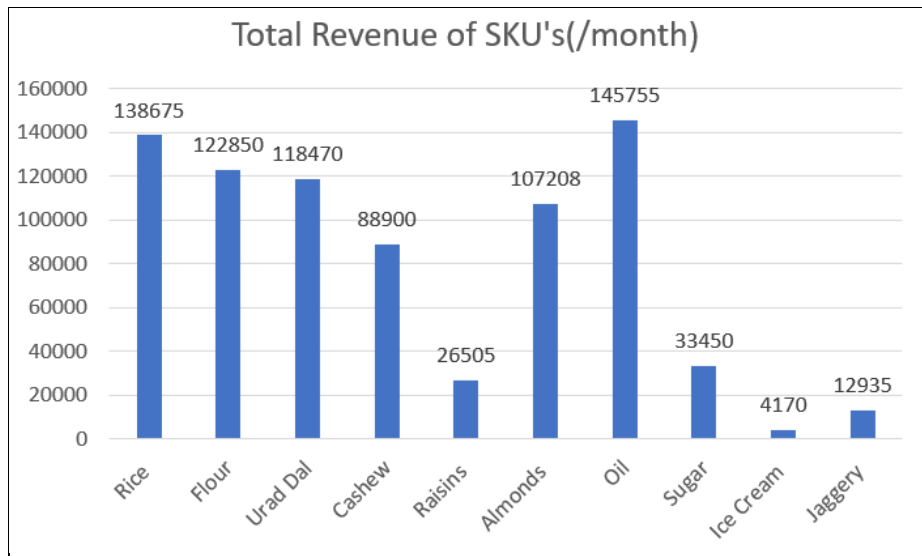
Date	Rice	Flour	Sales										Selling Price										Revenue									
			Urud Dal	Cashew	Raisins	Almonds	Oil	Sugar	Ice cream	Jaggery	Rice	Flour	Urud Dal	Cashew	Raisins	Almonds	Oil	Sugar	Ice cream	Jaggery	Rice	Flour	Urud Dal	Cashew	Raisins	Almonds	Oil	Sugar	Ice cream	Jaggery		
01-04-2024	145	135	40	5	4	7	16	26	5	7	43	42	110	1000	450	720	395	50	30	65	6375	5670	4400	5000	1800	5040	6330	1300	150	455		
02-04-2024	110	100	44	4	3	6	10	20	2	4	43	42	110	1000	450	720	395	50	30	65	4730	4200	4840	4000	1550	4320	3950	1000	60	260		
03-04-2024	115	105	45	5	4	7	21	31	7	9	43	42	110	1000	450	720	395	50	30	65	4945	4410	4950	5000	1800	5040	8295	1550	210	585		
04-04-2024	90	80	35	3	2	5	14	24	6	8	43	42	110	1000	450	720	395	50	30	65	3870	3360	3850	3000	900	3600	5530	1200	180	520		
05-04-2024	95	85	31	2	1	4	15	25	3	5	43	42	110	1000	450	720	395	50	30	65	4085	3570	3410	2000	450	2880	5925	1250	90	325		
06-04-2024	120	110	40	3	3	5	17	27	9	11	43	42	110	1000	450	720	395	50	30	65	5160	4630	4400	3000	900	3600	6715	1350	270	715		
07-04-2024	95	85	30	2	1	4	20	30	11	13	43	42	110	1000	450	720	395	50	30	65	4085	3570	3300	2000	450	2880	7900	1500	330	845		
08-04-2024	85	75	28	4	3	6	16	26	5	7	43	42	110	1000	450	720	395	50	30	65	3655	3150	3080	4000	1350	4320	6320	1300	150	455		
09-04-2024	80	70	31	2	1	4	8	18	2	4	43	42	110	1000	450	720	395	50	30	65	3440	2940	3410	2000	450	2880	3180	800	60	260		
10-04-2024	115	105	36	2	1	4	9	19	6	8	43	42	110	1000	450	720	395	50	30	65	4945	4410	3860	2000	450	2880	3555	950	180	520		
11-04-2024	130	120	40	1.5	0.5	3.5	15	25	7	9	43	42	110	1000	450	720	395	50	30	65	5590	5040	4400	1500	225	2520	5925	1250	210	585		
12-04-2024	120	110	37	4	3	6	16	5	7	43	42	110	1000	450	720	395	50	30	65	5160	4630	4070	4000	1350	4320	2370	800	150	455			
13-04-2024	110	100	35	2	1	4	13	23	6	8	43	42	110	1000	450	720	395	50	30	65	4730	4200	3850	2000	450	2880	5135	1150	180	520		
14-04-2024	115	105	34	2	1	4	13	22	2	4	43	42	110	1000	450	720	395	50	30	65	4945	4410	3740	2000	450	2880	4740	1100	90	325		
15-04-2024	100	90	32	1.5	0.5	3.5	10	20	9	11	43	42	110	1000	450	720	395	50	30	65	4300	3780	3520	1500	225	2520	3950	1000	270	715		
16-04-2024	95	85	28	3	2	5	11	21	6	8	43	42	110	1000	450	720	395	50	30	65	4085	3570	3080	3000	900	3600	4345	1050	180	520		
17-04-2024	120	110	42	2	1	4	6	16	5	7	43	42	110	1000	450	720	395	50	30	65	5160	4630	4620	2000	450	2880	2370	800	150	455		
18-04-2024	85	75	35	3	2	5	4	14	3	5	43	42	110	1000	450	720	395	50	30	65	3655	3150	3850	3000	900	3600	1580	700	90	325		
19-04-2024	75	65	34	1.4	0.4	3.4	7	17	9	11	43	42	110	1000	450	720	395	50	30	65	3225	2730	3740	1400	180	2448	2765	850	270	715		
20-04-2024	120	110	50	5	4	7	11	21	4	6	43	42	110	1000	450	720	395	50	30	65	5160	4630	5500	5000	1800	5040	4345	1050	120	396		
21-04-2024	115	105	42	3	2	5	5	15	2	4	43	42	110	1000	450	720	395	50	30	65	4945	4410	4620	3000	900	3600	1875	750	60	260		
22-04-2024	100	90	34	2	1	4	13	22	2	4	43	42	110	1000	450	720	395	50	30	65	4300	3780	3740	2000	450	2880	4740	1100	60	260		
23-04-2024	95	85	30	2	1	4	16	26	0	2	43	42	110	1000	450	720	395	50	30	65	4085	3570	3300	2000	450	2880	6320	1300	0	130		
24-04-2024	110	100	34	1.5	0.5	3.5	15	25	4	6	43	42	110	1000	450	720	395	50	30	65	4730	4200	3740	1500	225	2520	5925	1250	120	396		
25-04-2024	85	75	38	3	2	5	11	21	2	4	43	42	110	1000	450	720	395	50	30	65	3655	3150	4180	3000	900	3600	4345	1050	60	260		
26-04-2024	80	70	25	5	4	7	13	22	3	5	43	42	110	1000	450	720	395	50	30	65	3440	2940	2750	5000	1800	5040	4740	1100	90	325		
27-04-2024	110	100	31	4	3	6	10	20	6	8	43	42	110	1000	450	720	395	50	30	65	4730	4200	3410	4000	1350	4320	3950	1000	180	520		
28-04-2024	130	120	36	5	4	7	3	15	2	4	43	42	110	1000	450	720	395	50	30	65	5590	5040	3860	5000	1800	5040	1975	750	60	260		
29-04-2024	140	130	35	2	1	4	20	30	4	6	43	42	110	1000	450	720	395	50	30	65	6020	5460	3850	2000	450	2880	7800	1300	120	390		
30-04-2024	140	130	45	4	3	6	22	32	2	4	43	42	110	1000	450	720	395	50	30	65	6020	5460	4950	4000	1350	4320	8690	1600	60	260		
Total		3225	2925	1077	88.9	58.9	148.9	369	669	139	199										138675	122850	118470	88900	26505	107208	145755	33450	4170	12935		

(3.1) Snapshot of Data

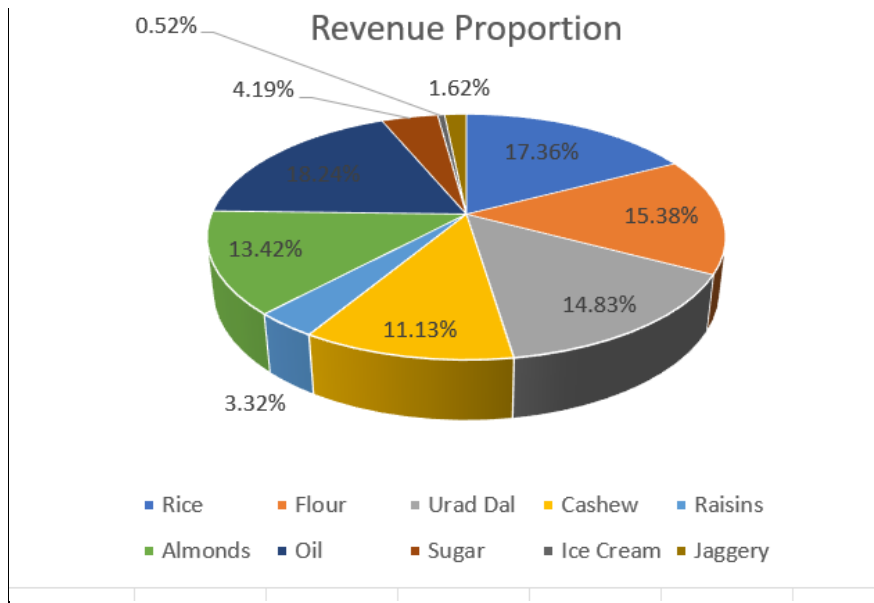
Here is the descriptive statistics analysis conducted based on the collected data



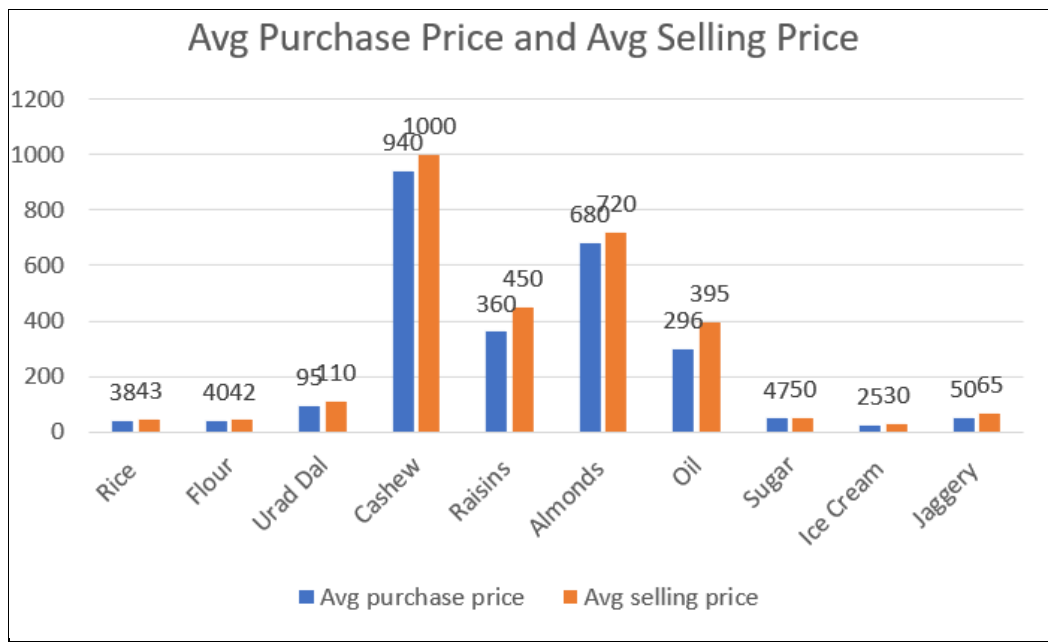
(3.2) Total Revenue trend observed over a month



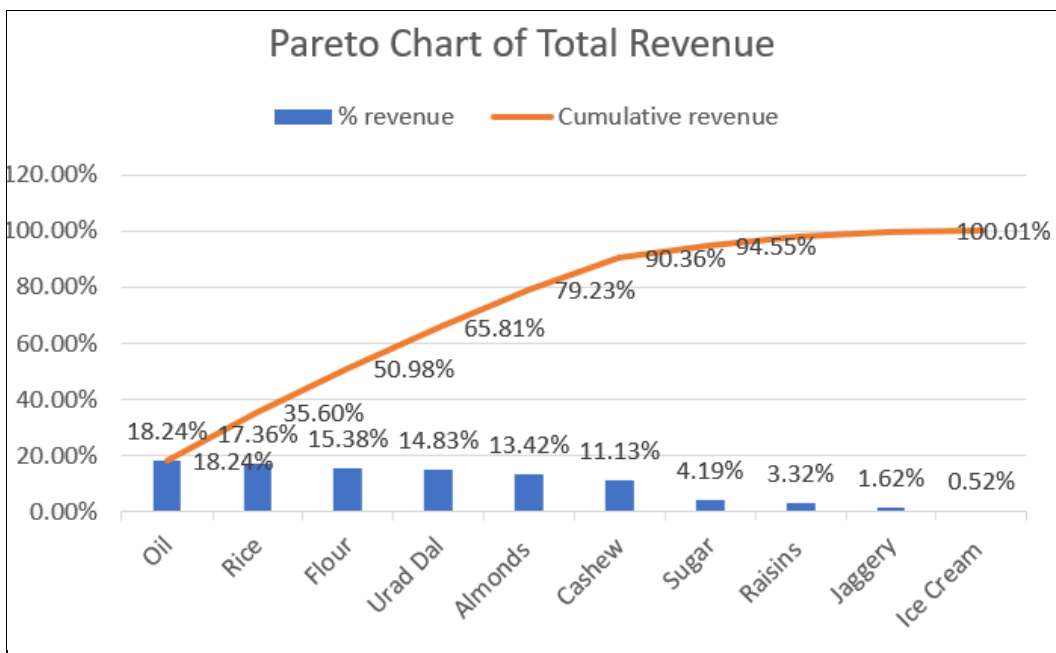
(3.3) Total Revenue of all the SKU's over a month



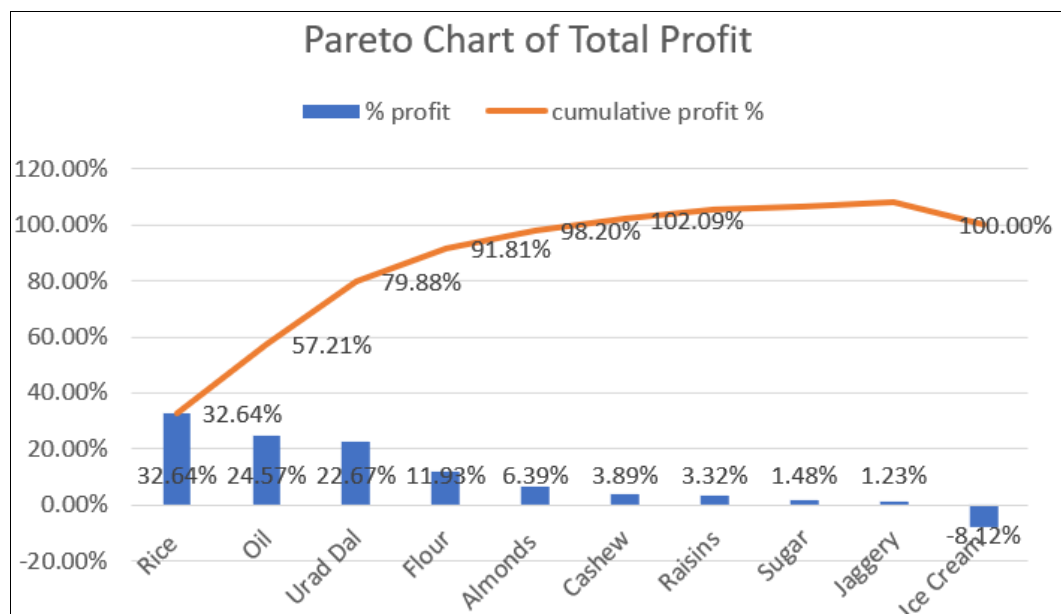
(3.4) SKU's proportion to Total Revenue



(3.5) Average Purchase Price vs Average Selling Price



(3.6) Pareto Chart of Total Revenue



(3.7) Pareto Chart of Total Profit

4) Detailed Explanation of Analysis Process/Method

I collected data for 30 days in Google Sheets, which was then cleaned, organised and analysed.

First, the data was meticulously reviewed to confirm its structure and formats were orderly and suitable for thorough analysis. This step involved scrutinizing the data for inconsistencies, filling in any missing values, and identifying outliers that could affect the results. Subsequently, a range of descriptive statistical techniques were applied to summarize and explore the data, including calculating key metrics like mean, profit and inventory levels to gain a deeper understanding of the shop's overall performance. Various types of charts, including column, bar, line, and pie charts, were employed to visually display revenue, profit by SKU's, purchase price, and their respective proportions. These visualizations provided a clear and straightforward way to grasp the performance and distribution of different metrics within the business. They helped identify trends, patterns, and key areas for decision-making focus. By leveraging these descriptive statistics and visual tools, we gained a comprehensive insight into the data and its implications for the business, enabling us to make well-informed decisions and enhance business strategies for better performance and stability.

To illustrate the Pareto chart of revenue or profit for all SKUs, a combined line and bar chart is used. This hybrid chart offers a clear and effective way to represent the cumulative contribution of each SKU to the overall revenue or profit. The bar chart component shows the individual revenue or profit values for each SKU, arranged in descending order from highest to lowest. Overlaying this, the line chart component presents the cumulative percentage of revenue or profit on the same graph. By integrating the line and bar charts, the Pareto chart provides a visual tool to highlight the significant contributors to the total revenue or profit.

To depict the proportions of revenue for different SKUs, a pie chart is employed. A pie chart effectively displays the relative contribution of each SKU to the total revenue by dividing a circular graph into sectors or slices. Each slice corresponds to a specific SKU, and its size is proportional to the revenue generated by that SKU. The larger the slice, the greater the revenue contribution.

Similarly, a line chart is used to illustrate trends in revenue, as it provides a visual representation of how each variable changes over time.

Additionally, a clustered column chart is used to compare the average selling price and average purchasing price throughout the month. This chart allows for easy comparison of these two metrics side by side for each SKU or category, highlighting any disparities or trends in pricing.

5) Results and Findings

Based on the analysis conducted using the graphs and charts, several key findings have emerged:

Focus on High-Performing Products:

- **Rice** and **Oil** are consistent top performers in both revenue and profit, making them crucial for business success.
- Products with high revenue and profit contributions should be the focus of marketing and sales efforts to maximize gains.

Strategic Price Adjustments:

- Evaluate pricing strategies for **Almonds** and **Oil** to increase their profit margins.
- Consider promotional efforts or price adjustments for low-margin items like **Rice** and **Flour** to boost their profitability.

Address Underperforming Items:

- Investigate the reasons for the loss in **Ice Cream** and take corrective actions such as revising pricing, reducing costs, or discontinuing the product if necessary.
- Reassess the value of maintaining low-contributing items like **Jaggery** and **Ice Cream** if they do not justify the resources invested in them.

Optimize Inventory and Sales Efforts:

- Use insights from the charts to optimize inventory management for top-performing items to avoid stockouts and minimize holding costs.
- Concentrate sales efforts on high-revenue and high-profit items to ensure steady growth and profitability.

These steps will help streamline operations, improve profitability, and ensure a strategic focus on the products that drive the most value for the business.

-----END-----