

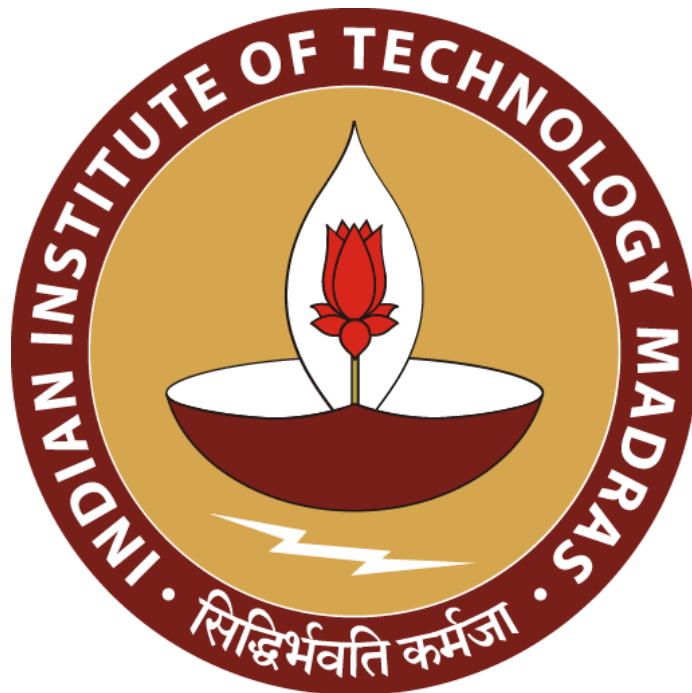
Optimization of Inventory Management for Ronak Super Market.

BDM CAPSTONE PROJECT MID-TERM SUBMISSION

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Executive Summary

Grocery shopping plays an essential role in daily life, impacting our well-being and nutrition. From a business perspective, proactive planning, robust customer relations, and strategic thinking are crucial for establishing a strong market position in the grocery sector.

Ronak Super Market, a medium-sized kirana store, currently faces challenges in profit and inventory management, indirectly affecting its net profit and sales. The rise of online shopping has introduced significant changes, posing additional hurdles for local stores like Ronak Super Market, resulting in declining profits. This project aims to tackle these unique challenges by focusing on understanding cash flow dynamics and optimizing inventory control. Through rigorous data analysis, our goal is to provide practical solutions that enhance Ronak Super Market 's overall performance.

The project will utilize tools like Microsoft Excel for data analysis and visualization. The data types involved include historical sales data, inventory levels, and purchase orders. Data collection will span the past one month to ensure a comprehensive analysis.

Goals for the Mid-Term Include:

- Identifying high-contributing SKUs(**Stock-Keeping Units**) for sustained sales.
- Determining SKUs with the highest profit margins.
- Applying the Pareto Principle to prioritize SKU management.
- Analyzing market trends in revenue and purchase prices.

Proof of Originality

Details :

Name : Ronak Super Market

Owner : Mr. Ramesh Choudhary

Address : Kakade Park , Keshav Nagar, Chinchwad, Pune. 411033

About :

Ronak Super Market has established itself as a leading kirana shop, serving a diverse clientele. Since its inception in 2015, Ronak Super Market has built a strong reputation for offering high-quality everyday essentials such as Dal, Sugar, Salt, Oils, Ghee, and Dry Fruits. Its commitment to quality and competitive pricing has made it a preferred choice among local shops and food establishments in the community. Ronak Super Market is also recognized for its proficiency in handling bulk orders, ensuring seamless service and customer satisfaction for parties and functions. This reputation underscores Ronak Super Market's role as a dependable supplier of essential goods, catering to both retail and wholesale needs with excellence.

To establish the authenticity of the data, the supporting evidence as listed below:

1. **Letter from the Organization :** Access to the letter can be obtained through the G-Drive link:

[https://drive.google.com/drive/folders/1VtS5SCye5gHFtp4_WmP8w-XdZKJtvd4F?usp=sharing]

2. **Images of Organisation :** These visuals are enclosed within Appendix , located on page 9.

They can also be accessed through the G-Drive link:

[https://drive.google.com/drive/folders/1VtS5SCye5gHFtp4_WmP8w-XdZKJtvd4F?usp=sharing]

Metadata and Descriptive Statistics

METADATA:

I have diligently collected a detailed dataset spanning 31 days, starting from June 1st to July 1st, 2024. My approach involved daily visits to the shop, supplemented by strategically timed alternate-day visits. This method enabled me to compile a comprehensive and cumulative dataset covering the entire period.

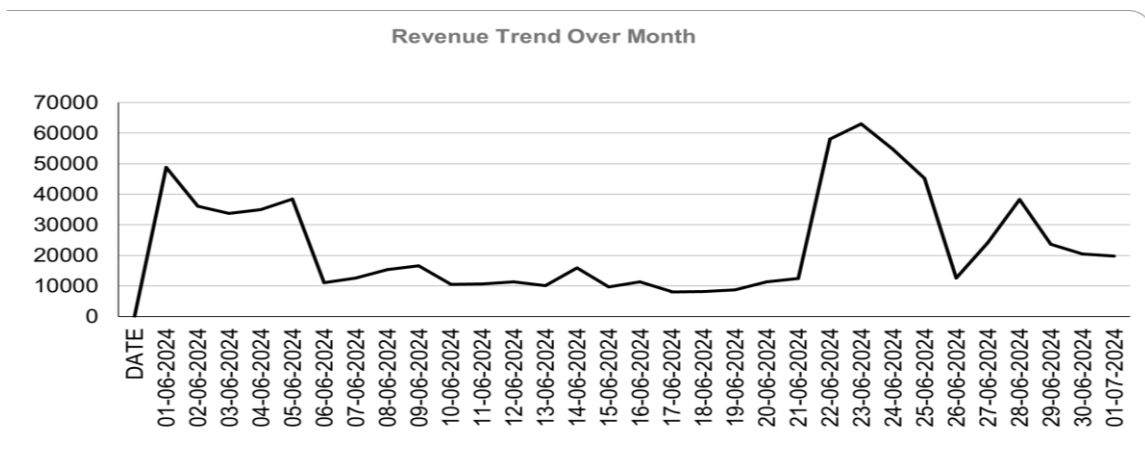
Data Can be access by following link :

[https://drive.google.com/drive/folders/1VtS5SCye5gHFtp4_WmP8w-XdZKJtvd4F?usp=sharing]

DATE	SALES								SELLING PRICE																REVENUE			
	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE	MILK & DAIRY DRY FRUITS	PRICE	ATTA	TOOR DAL	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE	MILK & DAIRY DRY FRUITS	PRICE	ATTA	TOOR DAL	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE	PRICE	ATTA	TOOR DAL	MOONG DAL	URAD DAL
01-06-2024	16	45	70	36	10	50	6	845	841	832	810	812	845	835	840	850	855	82300	8450	82480	81500	84300	82300	85900	85300	84500	84500	84500
02-06-2024	14	44	68	30	10	50	6	845	841	832	810	812	845	835	840	850	855	84000	82300	82480	81500	84300	82300	85900	85300	84500	84500	84500
03-06-2024	20	50	40	40	8	58	4	845	841	832	810	812	845	835	840	850	855	83800	82300	82480	81500	84300	82300	85900	85300	84500	84500	84500
04-06-2024	16	44	62	40	10	54	6	844	841	832	810	812	845	835	840	850	855	82800	81800	82244	81700	84300	81800	85800	84500	84500	84500	84500
05-06-2024	14	40	48	38	11	75	10	844	841	832	810	812	845	835	840	850	855	82904	81475	81835	81540	84400	82904	86270	84705	84705	84705	84705
06-06-2024	8	4	10	8	4	60	0	844	841	832	810	812	845	835	840	850	855	8800	8984	898	8800	8440	8400	81320	81740	81740	81740	81740
07-06-2024	9	9	9	9	2	60	2	846	841	834	810	812	843	832	845	850	855	81800	8920	8922	8900	8996	8944	8972	8970	8970	8970	8970
08-06-2024	6	6	10	8	4	59	4	844	842	834	810	812	843	832	845	850	855	81700	81008	8922	8900	8972	8430	81296	81740	81740	81740	81740
09-06-2024	4	4	6	6	4	80	4	844	842	834	810	812	843	832	845	850	855	82840	81200	8924	8440	8440	8250	8972	81740	81740	81740	81740
10-06-2024	6	4	8	8	0	55	0	844	842	834	810	812	843	832	845	850	855	82404	81344	8922	8900	8440	8344	81296	81740	81740	81740	81740
11-06-2024	8	6	8	6	2	56	0	842	842	834	810	810	843	830	845	850	855	82096	81000	8924	8900	8940	8344	8940	8970	8970	8970	8970
12-06-2024	8	8	6	6	2	58	0	842	842	834	810	810	843	830	845	850	855	82096	81075	8922	8900	8944	8250	8940	8970	8970	8970	8970
13-06-2024	8	6	10	4	0	60	0	842	842	834	810	810	843	830	845	850	855	82800	81075	8924	8900	8940	8430	8920	8970	8970	8970	8970
14-06-2024	9	10	12	8	2	65	0	844	842	834	810	812	843	830	845	850	855	84844	81244	81296	8900	8196	8956	81244	8970	8970	8970	8970
15-06-2024	10	8	4	4	0	57	0	844	841	830	810	811	843	830	845	850	855	81848	8984	8940	81900	8980	8972	8920	8970	8970	8970	8970
16-06-2024	10	10	4	6	0	54	1	844	841	830	810	811	843	830	845	850	855	81700	81066	81080	81900	81900	8972	8940	8970	8970	8970	8970
17-06-2024	2	6	4	2	0	53	0	845	841	830	810	811	843	830	845	850	855	82340	8920	8922	8900	8986	8972	8936	8970	8970	8970	8970
18-06-2024	2	2	2	0	2	55	0	845	841	830	810	811	844	830	845	850	855	81800	81220	8922	8920	8922	898	8970	8970	8970	8970	8970
19-06-2024	2	6	4	4	2	54	0	843	841	830	810	811	847	830	845	850	855	81548	8920	8948	8920	8966	898	8920	8970	8970	8970	8970
20-06-2024	6	9	6	4	2	55	2	845	841	834	810	812	845	830	845	850	855	81780	8730	848	8970	8976	8970	8920	8970	8970	8970	8970
21-06-2024	2	2	8	6	4	50	2	845	841	834	810	812	845	830	845	850	855	82800	81220	8922	8920	8944	8980	8982	81740	81740	81740	81740
22-06-2024	26	20	94	69	10	90	6	845	841	834	810	812	845	830	845	850	855	86700	83890	83744	82308	84386	84230	89056	87800	87800	87800	87800
23-06-2024	20	36	100	60	20	90	10	845	841	834	810	812	845	830	845	850	855	810900	84796	83320	82304	82320	84300	84600	89600	89600	89600	89600
24-06-2024	18	24	54	36	22	95	10	845	841	834	810	812	845	830	845	850	855	810200	83336	83320	82304	82320	84300	84600	89600	89600	89600	89600
25-06-2024	10	16	40	22	20	100	12	845	841	834	810	812	845	830	845	850	855	817300	82460	82320	81500	81982	81800	82860	89800	89800	89800	89800
26-06-2024	8	8	12	6	2	57	0	845	841	834	810	812	845	830	845	850	855	81800	8956	81940	894	8976	8940	8970	8970	8970	8970	8970
27-06-2024	10	16	12	20	4	55	0	845	841	834	810	812	845	830	845	850	855	818400	81840	81972	81500	81982	8940	82600	81760	81760	81760	81760
28-06-2024	24	24	10	20	0	85	4	845	841	834	810	812	845	830	845	850	855	810700	82460	81500	82712	82320	898	83440	83440	83440	83440	83440
29-06-2024	16	10	10	20	4	52	2	847	841	834	810	812	845	830	845	850	855	817520	8964	81460	81800	82900	8400	82600	81760	81760	81760	81760
30-06-2024	10	12	14	22	2	54	0	847	841	834	810	812	845	830	845	850	855	817320	81066	81604	81500	81464	8920	83302	8980	8980	8980	8980
01-07-2024	12	14	8	16	2	55	2	847	841	835	810	812	845	830	845	850	855	818100	8920	81500	81556	81502	8920	82256	8980	8980	8980	8980
	11	17	23	18	6	62	3	845	841	834	810	812	845	830	845	850	855	8148182	892462	84636	816706	893208	813240	893244	892405	892405	892405	892405
	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE	MILK & DAIRY DRY FRUITS										PRICE	ATTA	TOOR DAL	MOONG DAL	URAD DAL	SUGAR	COOKING OIL	GHEE					
	230	512	720	568	191	1947	36																					

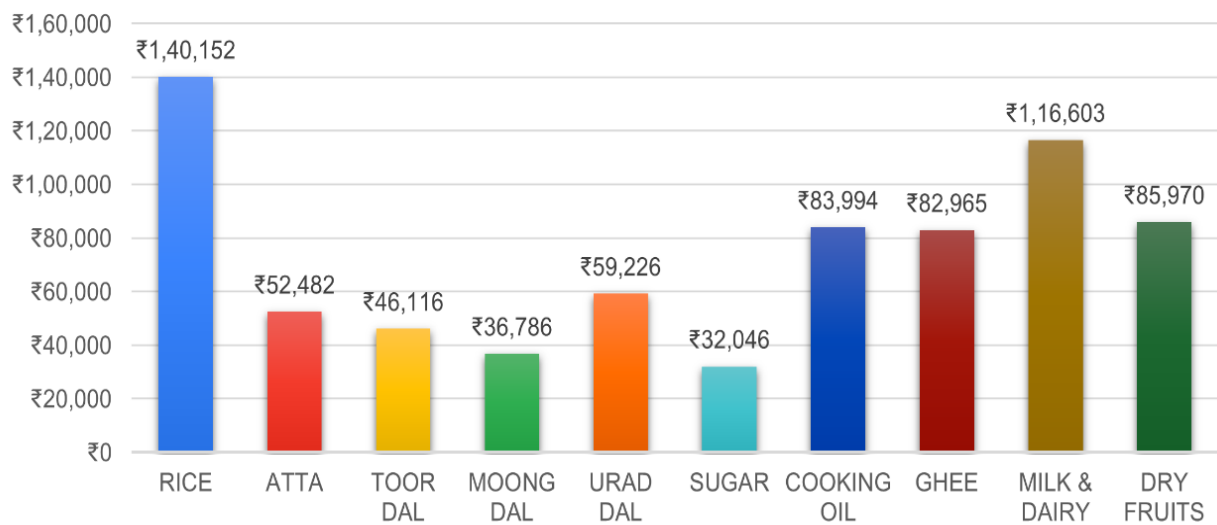
3.1) Preview of Collected Data

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



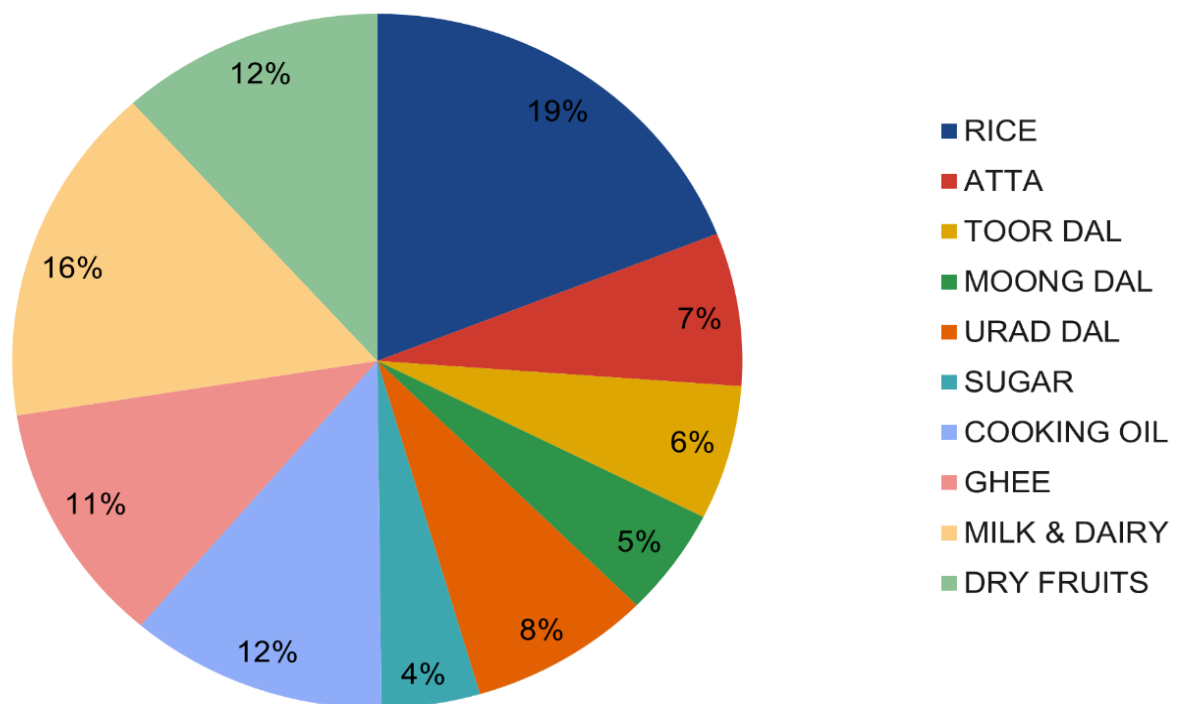
3.2) Total Revenue Trend observed over a month

Total Revenue of SKU's (/month)



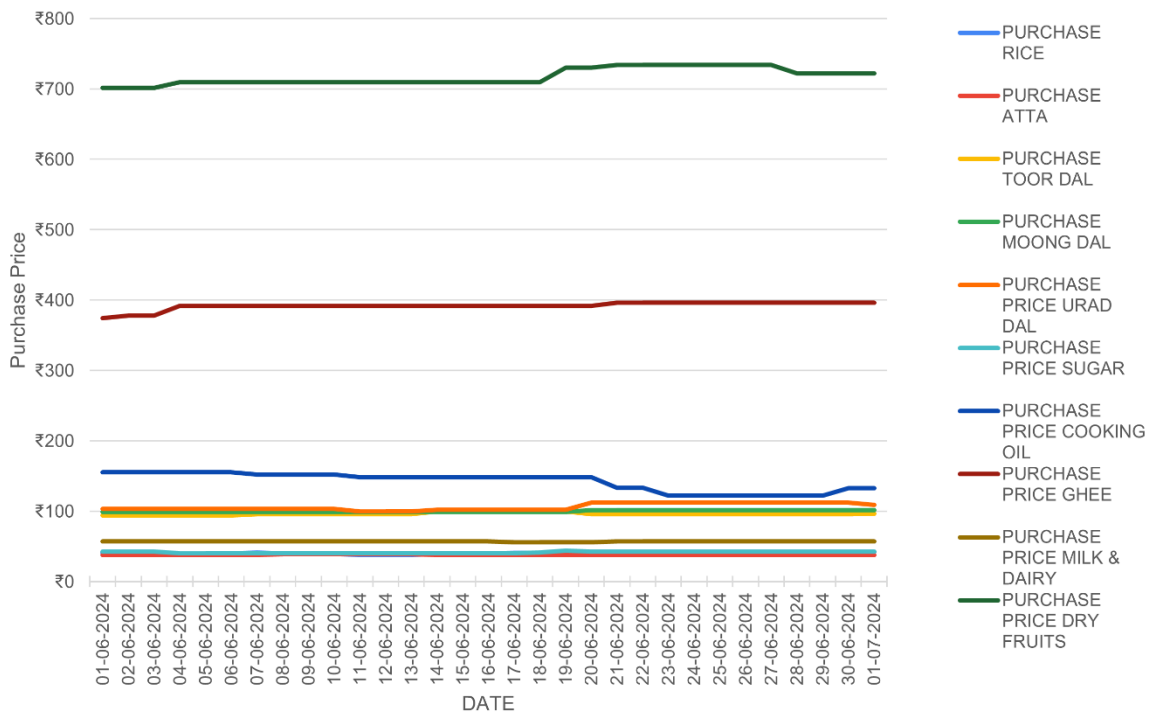
3.3) Total Revenue of all the SKU's over a month

REVENUE PROPORTION



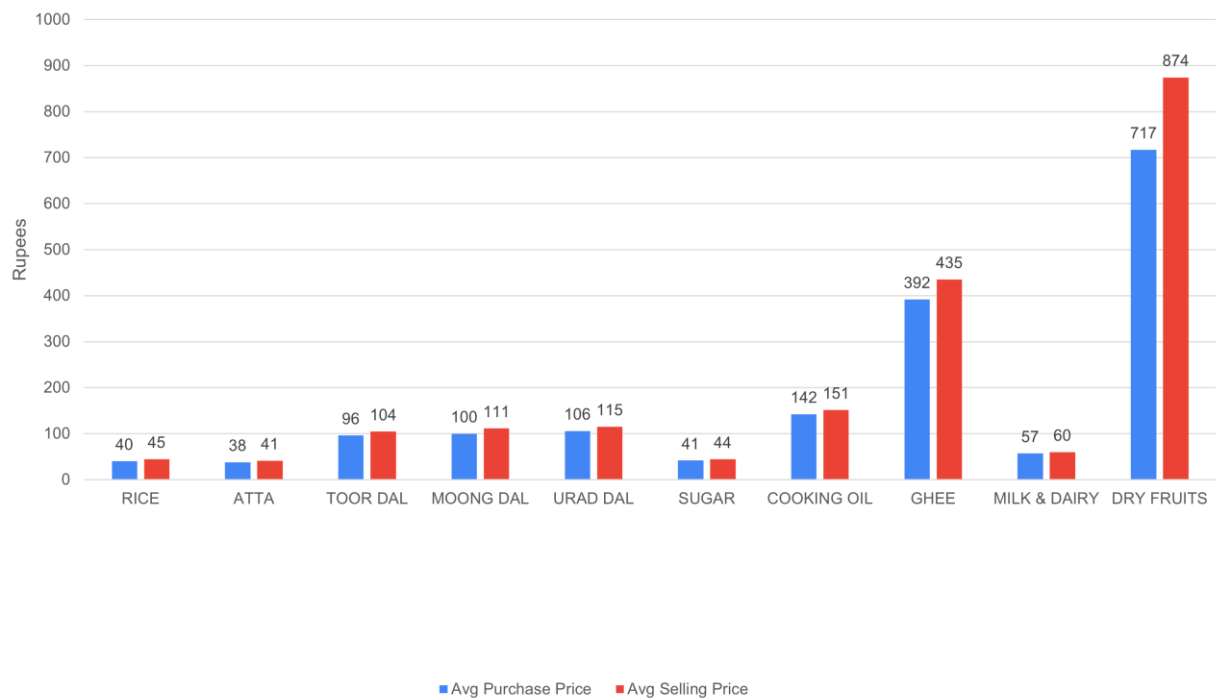
3.4) SKU's proportion to Total Revenue

Purchase Price Trend (SKU)



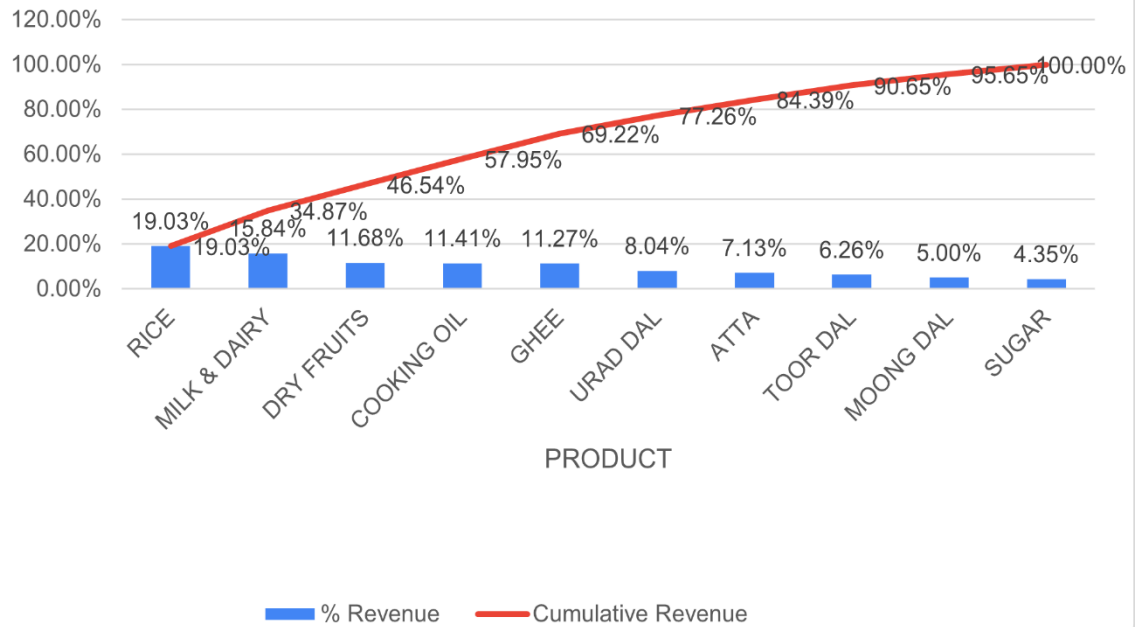
3.5) Purchase Price of all the SKU's over a period of month (for shop owner)

Avg Purchase Price VS Avg Selling Price



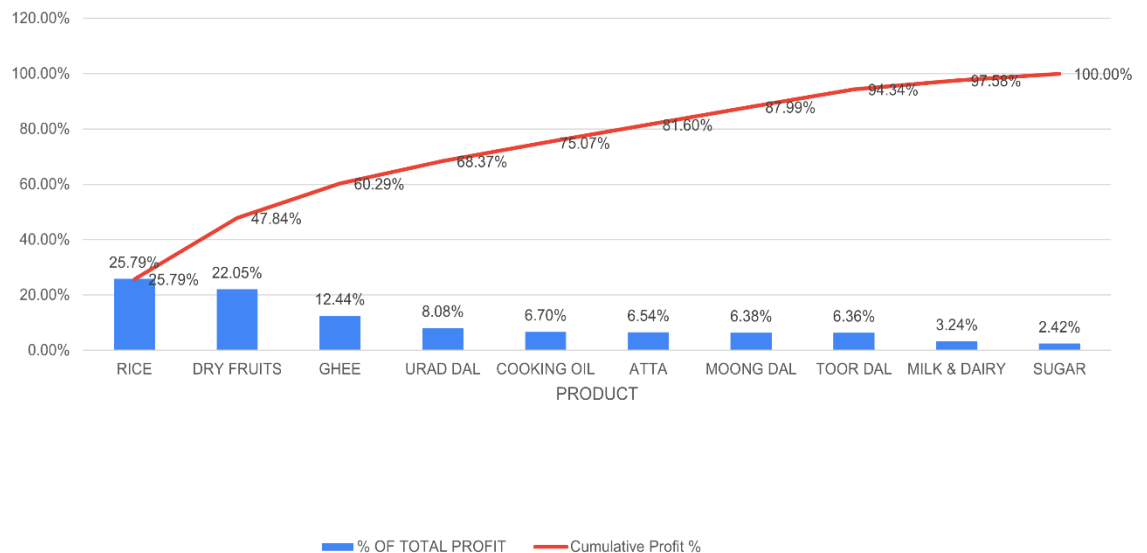
3.6) Avg. Purchase Price vs Avg. Selling Price

Pareto Chart of Total REVENUE



3.7) Pareto Chart of Total Revenue

Pareto Chart of Total Profit



3.8) Pareto Chart of Total Profit

Analysis processes and methods

Over a span of 30 days, I meticulously gathered and organized data in Google Sheets, ensuring its cleanliness and structure were optimal for analysis. This involved thorough checks for inconsistencies, missing values, and outliers that could influence results. Once prepared, I applied various descriptive statistical techniques such as calculating mean, average, profit margins, and inventory stocks to provide a comprehensive overview of the shop's operations.

To visually represent the data, I utilized a range of charts including column, bar, line, and pie charts. These charts effectively summarized metrics such as revenue, SKU profits, purchase prices, and their respective distributions. They not only provided clarity on performance but also identified trends and patterns critical for decision-making and strategic planning.

One of the key tools used was the Pareto Chart, which combined both bar and line chart elements. This chart methodically showcased the cumulative contribution of each SKU to overall revenue or profit. By sorting SKUs in descending order of their individual contributions and overlaying a line chart depicting cumulative percentage, the Pareto Chart highlighted significant contributors and strategic focal points.

For analyzing profit proportions across SKUs, I employed pie charts. These charts visually depicted the relative contribution of each SKU to total profit by dividing a circular graph into slices, with each slice proportional to the profit generated by a specific SKU. This clear visual representation facilitated quick understanding of profit distribution and key contributors.

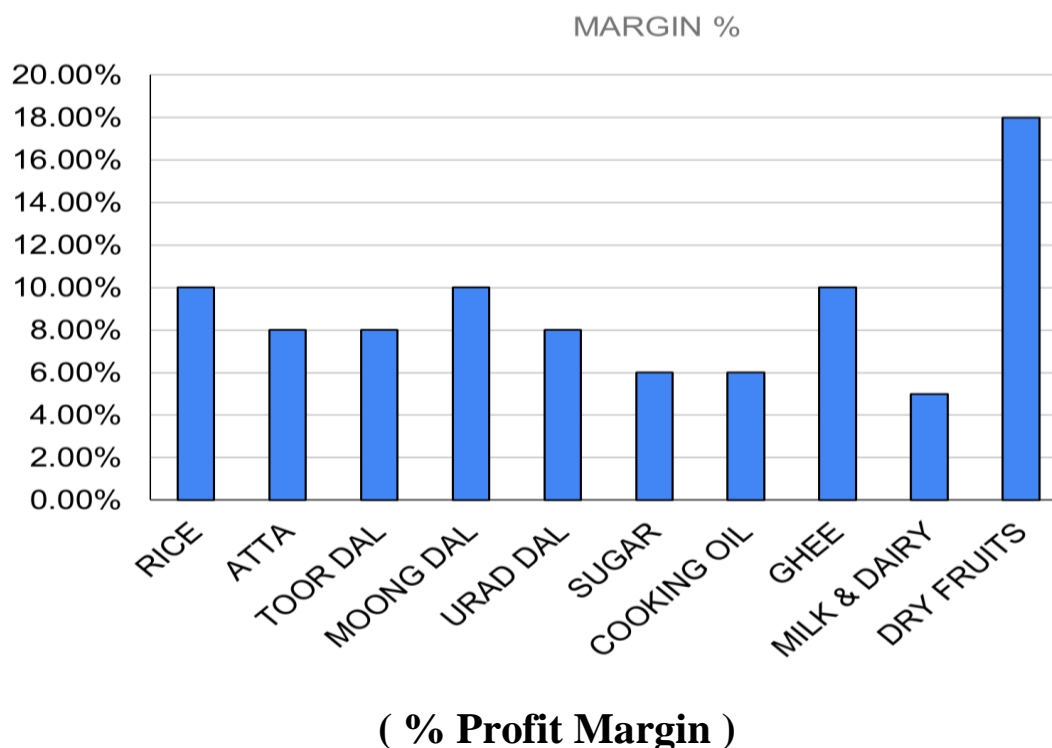
Furthermore, trends over time in revenue and purchase prices were effectively displayed using line charts. This graphical representation provided a clear visual insight into how these variables fluctuated over the 30-day period, aiding in understanding seasonal variations or emerging patterns that could impact business strategies.

In conclusion, through rigorous data cleaning, descriptive analysis, and effective visualization techniques, I gained valuable insights into the dynamics of the business. These insights will guide informed decision-making and enable optimization of strategies to enhance overall business performance and profitability.

Results and Findings

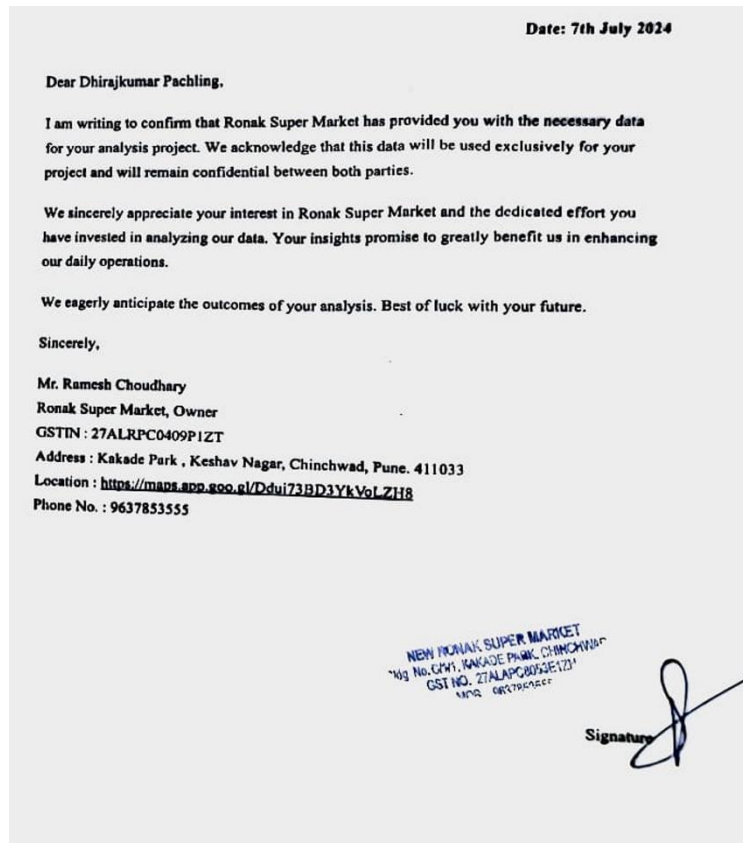
Based on the analysis of the graphs and charts, several key insights have surfaced:

1. **RICE Dominance in Profitability:** RICE emerges as the primary profit driver for Ronak Super Market. Its consistent contribution is underscored by a stable purchase price throughout the observed month, solidifying its essential role in the inventory despite challenges in cost reduction.
2. **DRY FRUIT's Profit Margin Leadership:** Among all SKUs, GHEE stands out with the highest profit margin. This indicates that while RICE leads in overall profit generation, DRY FRUIT offers substantial profitability relative to its cost.
3. **Pareto Analysis of Profit Contribution:** Applying the Pareto Principle reveals that a select few SKUs—specifically RICE, DRY FRUIT, GHEE, URAD DAL, OIL, and ATTA—contribute significantly, accounting for approximately 80% of the total profit. This highlights the concentration of profitability among key products.



Appendix A: Proof of Originality

Letter from the Organization :-



Images related to organization :

