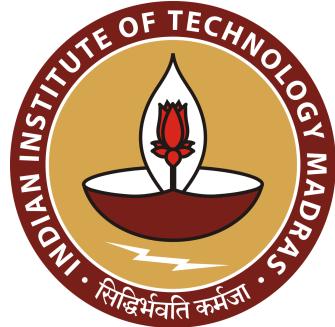




Business Data Management
Mid-Term Submission



Case Study of Bansal Kirana Store

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1) Executive Summary :

Grocery shopping is not only a fundamental part of our daily lives but also a vital factor in maintaining our well-being and nutrition. From a business perspective, it is crucial to engage in proactive planning , strong customer-relation building and maintain a strategic mindset in order to establish a strong market position in the Grocery Sector.

As stated earlier in the proposal Bansal Store, a medium-sized kirana store, is currently encountering challenges in terms of profit and inventory management which is having an indirect impact on the store's net profit and sales. Also the emergence of online purchasing has brought about significant changes in the modern world, but it has also posed challenges for local stores like Bansal Store, leading to a decline in their profits. This project is dedicated to addressing the unique business challenges faced by Bansal grocery store. Our main objective is to understand the complexities of managing cash flow and controlling inventory. And Through data analysis, we aim to provide practical solutions to overcome these issues and improve the store's overall performance.

Goal for mid term :

- To find Which SKU (or goods) contributes more to the net profit and is suitable for continuing in longer run sales
- To find Which SKU has higher profit margin
- To examine Pareto Principle for SKUs
- To examine and determine the revenue and purchase price trend in the market

2) Proof of originality of the Data :

Details :

Shop Name : Bansal Store

Owner : Mr. Raj Bansal

Address : H-1/4 , Sector -11 , Rohini , Delhi - 110085

About :

Bansal Store stands as a premier kirana shop, catering to both B2C and B2B clientele with a diverse range of everyday essentials. From essential commodities like Dal, Sugar, Salt, Oils, Ghee, and Dry Fruits, this establishment has garnered a reputation for providing top-notch products. Since its establishment in early 2018, Bansal Store has become the go-to destination for local shops, including food corners, seeking quality goods at competitive prices. Moreover, the shop has also carved a niche in handling bulk orders for groceries, serving parties and functions with utmost efficiency and customer satisfaction.

Images:

To substantiate my claims, I have included a visual documentation comprising images showcasing the establishment itself, along with the sample bills and informal receipts employed by the shop to meticulously record each sale.



Shop storage area

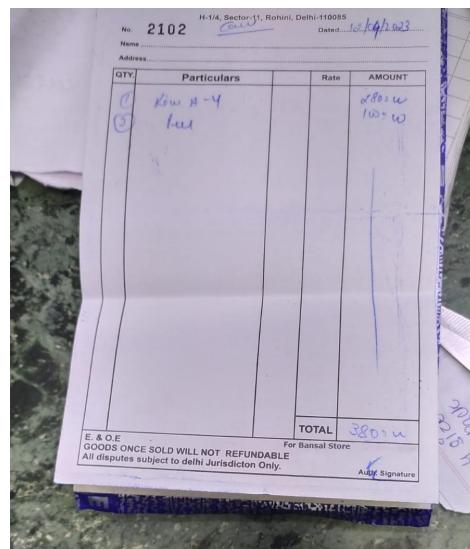


Main shop area where all the transactions are done

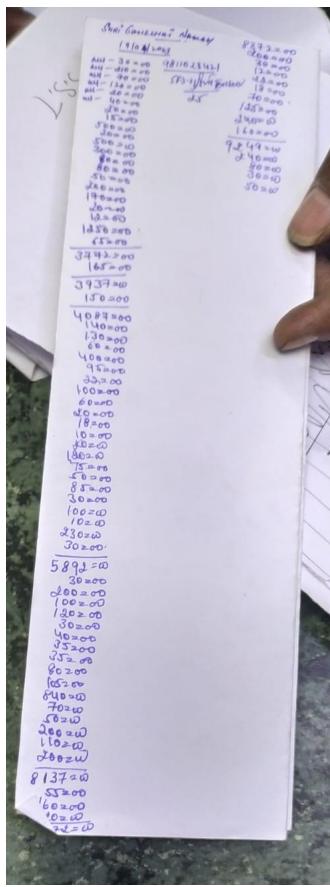


Pic for reference of name and location

Since the shop primarily operates at a local level, it does not adhere to any formal data storage or collection methods that can be readily presented or obtained. Consequently, in order to capture a glimpse of the shop's sales records, snapshots of the informal bills have been collected. While the absence of official data storage may limit the availability of documentation, these captured snapshots provide valuable insights into the shop's transactional activities and contribute to the overall understanding of its operational practices.



Pic of official bill



One of Many Picture of sales record (informal)

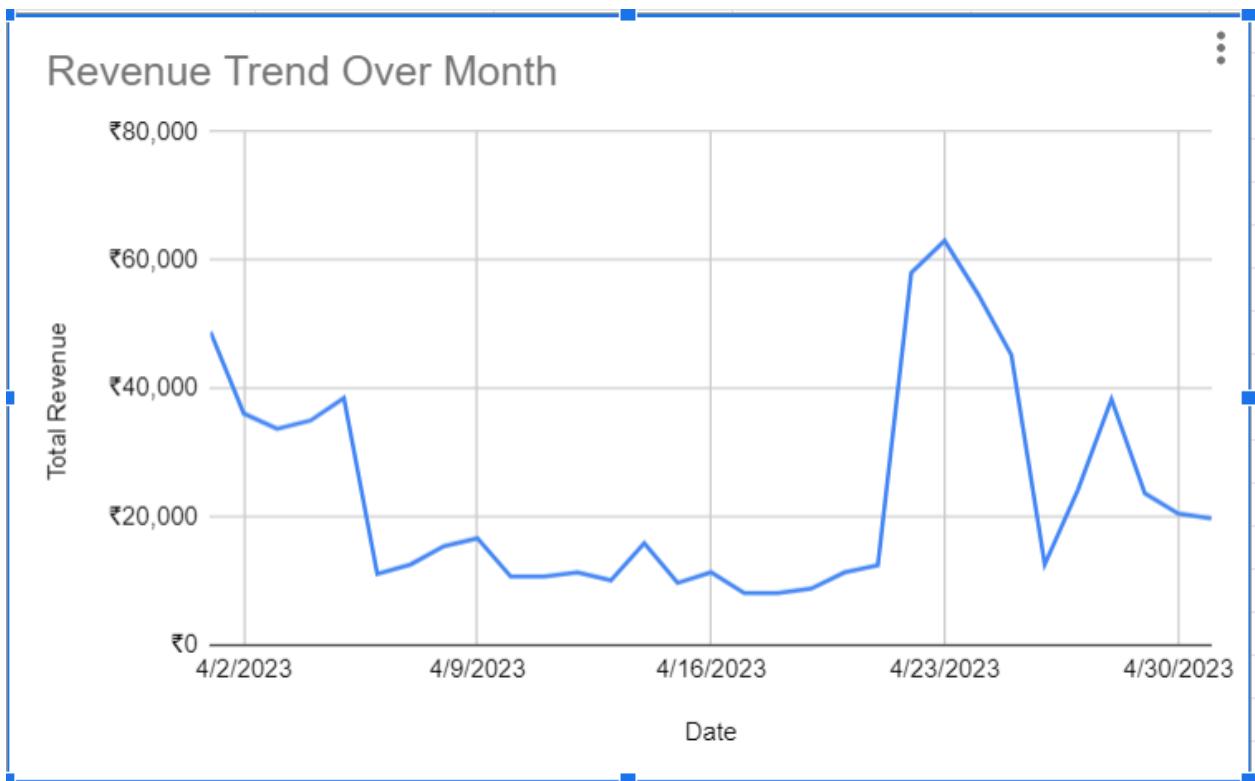
3) Metadata and Descriptive Statistics :

I have meticulously gathered an extensive 31 day dataset, commencing from the 1st of April and extending until the 1st of May 2023. 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.

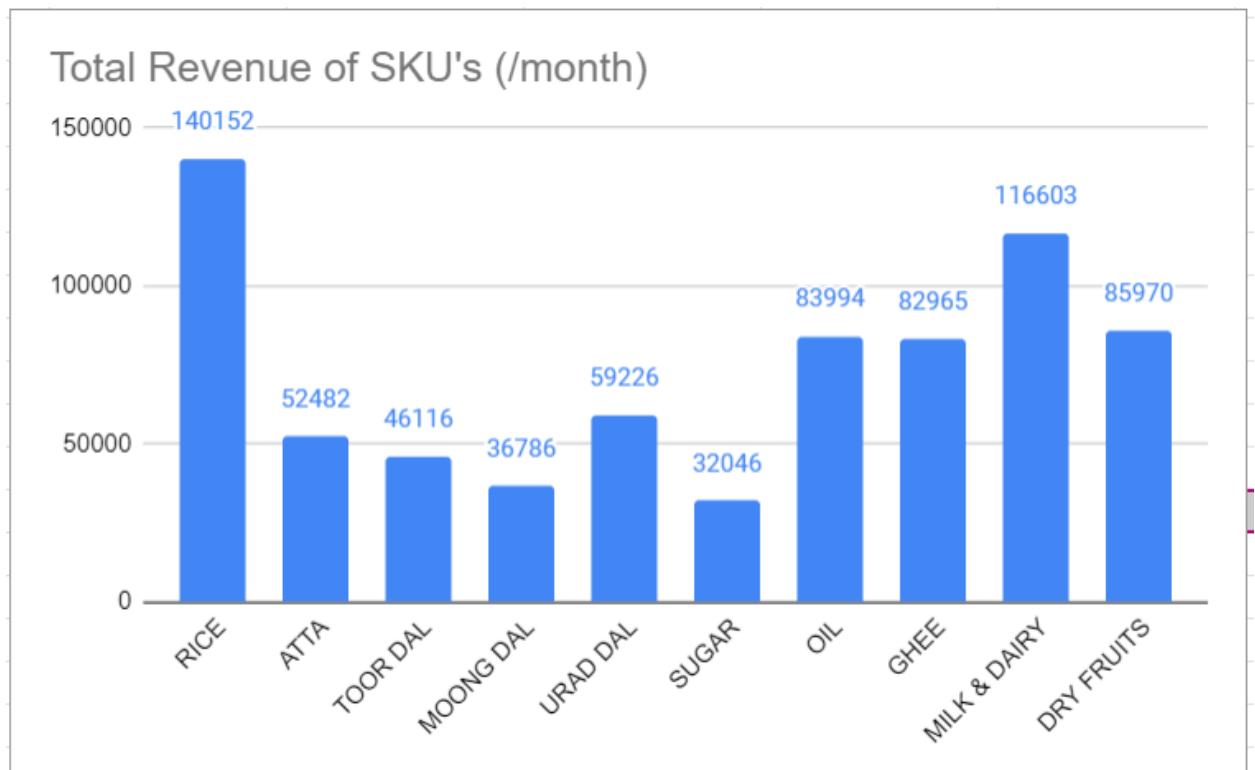
DATE	URAD DAL	SUGAR	OIL	GHEE	MILK & CURRY	DRY FRUITS	RICE	ATTAL	TOOR DAL	MOONG DAL	BELLING PRICE	URAD DAL	SUGAR	OIL	GHEE	MILK & CURRY	DRY FRUITS	RICE	ATTAL	TOOR DAL	MOONG DAL	URAD DAL	SUGAR	OIL	GHEE	MILK & CURRY	REVENUE
4/1/2023	50	20	50	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$1.00
4/2/2023	44	30	50	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/3/2023	49	40	50	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/4/2023	44	42	40	64	6	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/5/2023	40	48	50	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/6/2023	40	50	50	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/7/2023	8	10	50	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/8/2023	8	6	2	60	2	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/9/2023	8	10	50	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/10/2023	4	6	4	4	4	4	4	4	4	4	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/11/2023	4	8	6	80	4	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/12/2023	4	8	6	8	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/13/2023	8	6	2	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/14/2023	8	10	4	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/15/2023	10	12	50	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/16/2023	8	4	0	57	0	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/17/2023	10	4	0	50	0	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/18/2023	6	4	2	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/19/2023	2	2	0	50	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/20/2023	8	6	4	2	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/21/2023	28	94	68	18	90	6	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/22/2023	36	100	60	20	90	60	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/23/2023	24	54	50	20	100	11	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/24/2023	16	40	22	20	100	12	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/25/2023	8	12	2	57	5	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/26/2023	10	12	20	4	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/27/2023	24	18	28	8	60	4	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/28/2023	10	18	2	4	2	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/29/2023	12	14	22	2	54	0	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00
4/30/2023	14	8	18	2	50	50	50	50	50	50	\$1.00	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	\$4.00

(3.1) Snapshot of Data

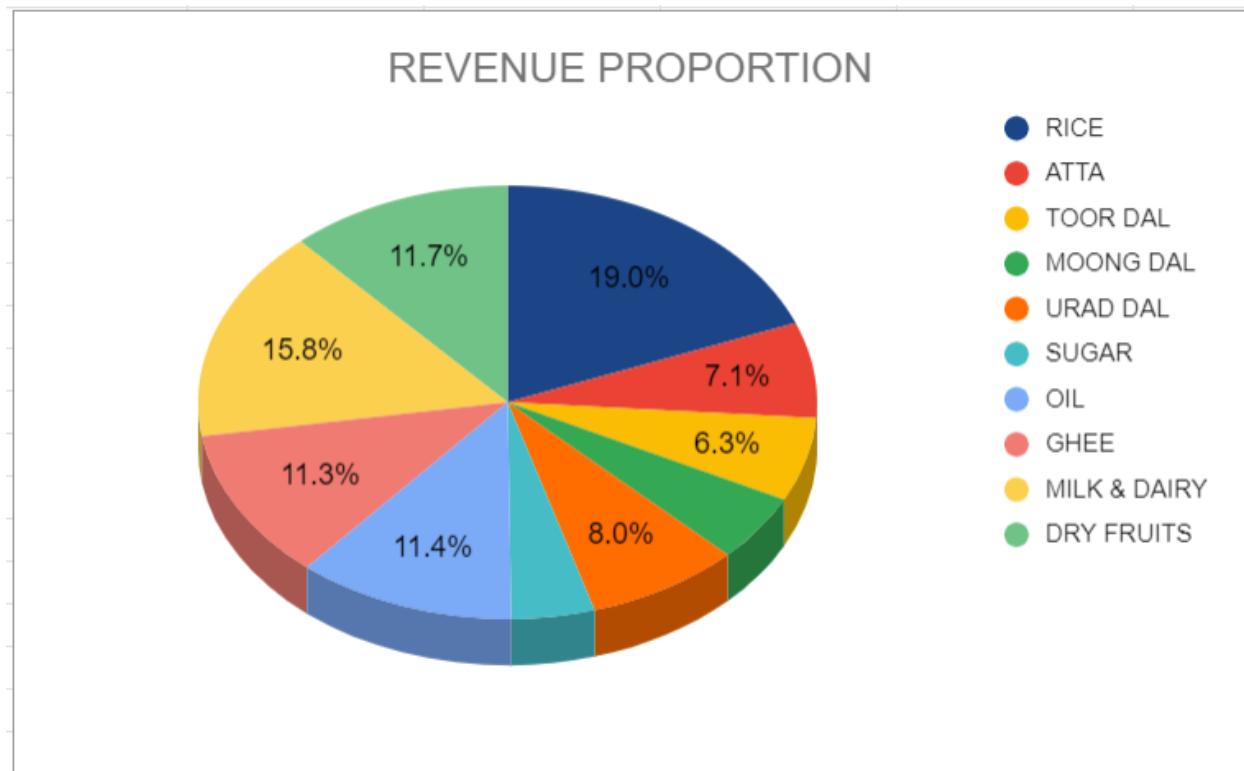
Here is the descriptive statistics analysis conducted based on the collected data.



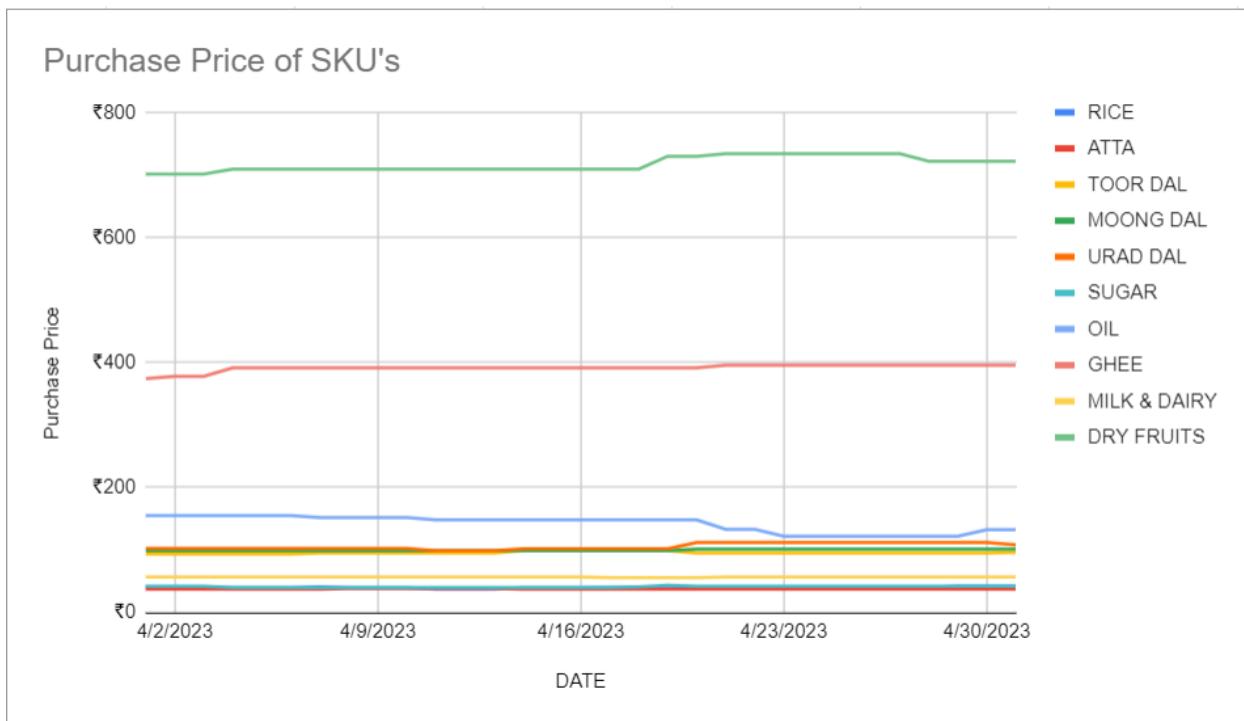
(3.2) Total Revenue Trend observed over a month



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



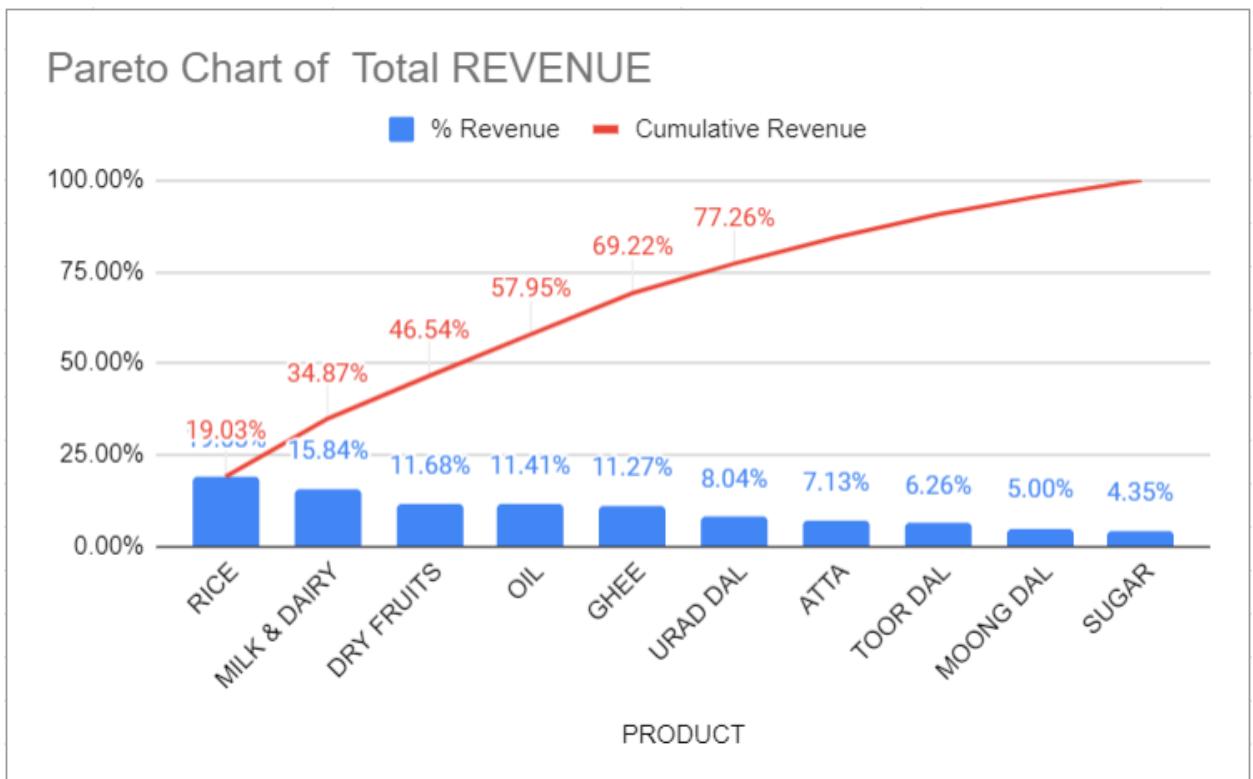
(3.4) SKU's proportion to Total Revenue



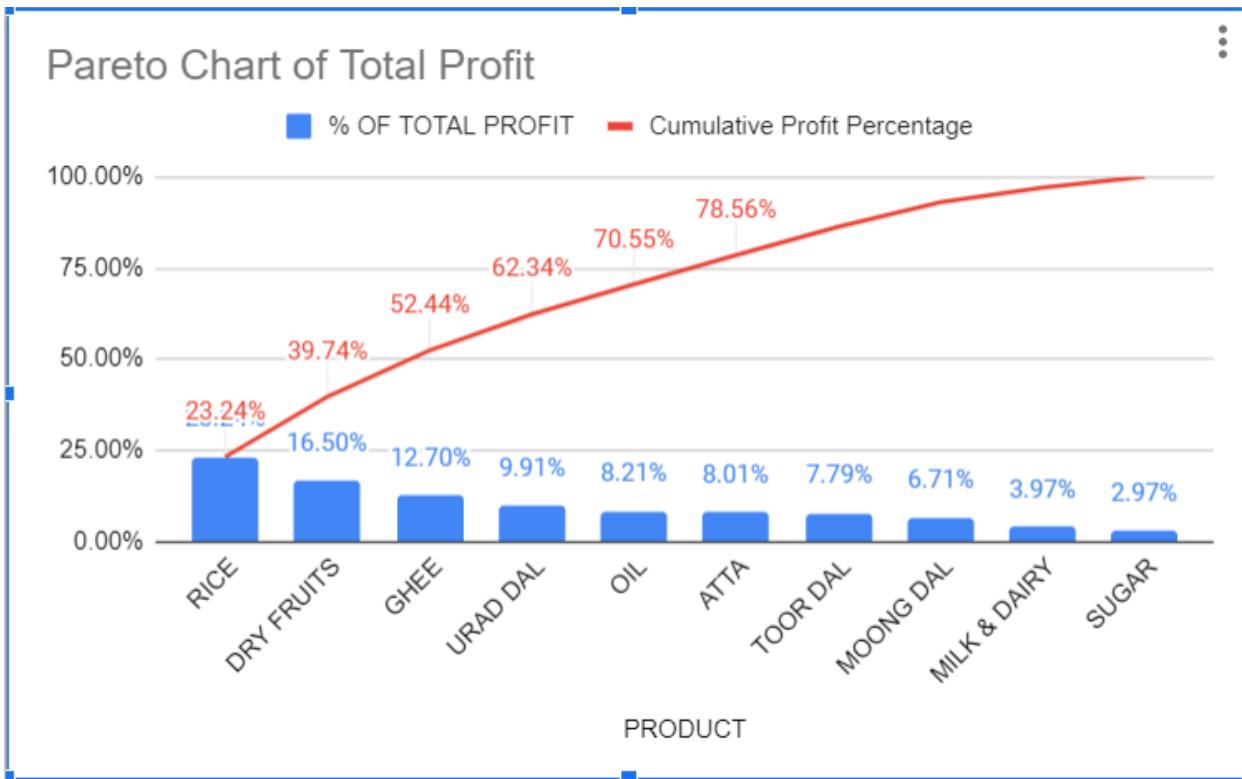
(3.5) Purchase Price of all the SKU's over a period of month (for shop owner)



(3.6) Avg. Purchase Price vs Avg. Selling Price



(3.7) Pareto Chart of Total Revenue



(3.8) Pareto Chart of Total Profit

Detailed Explanation of Analysis Process/Method :

I collected 30 days' worth of data in Google Sheets, which was then cleaned, organized, and analyzed.

Firstly, the data was carefully examined to ensure its structure and format were clean and organized for effective analysis. This step involved checking for inconsistencies, missing values, and outliers that could impact the results. Next, a variety of descriptive statistical techniques were applied to summarize and explore the data. This included calculating measures such as mean, average, profit, and inventory stocks to gain insights into the overall dynamics of the shop. Column, bar, line, and pie charts were used to visually represent revenue, profit of SKUs, purchase price, and their respective proportions. These charts provide a clear and concise way to understand the performance and distribution of various metrics within the business. They help identify trends, patterns, and areas of focus for decision-making. By utilizing these descriptive statistics and visualizations, we gain a comprehensive understanding of the data and its implications for the business. This analysis will enable us to make informed decisions and optimize business strategies for improved performance and profitability.

To show the Pareto Chart of revenue or profit for all SKUs, a combined line and bar chart is utilized. This combination allows for a clear and effective representation of the cumulative contribution of each SKU to the overall revenue or profit. The bar chart component displays the individual revenue or profit values for each SKU, sorted in descending order from the highest to the lowest. The line chart component overlays the cumulative percentage of revenue or profit on

the same graph. By combining the line and bar charts, the Pareto Chart provides a visual tool to identify the significant contributors to the overall revenue or profit.

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

Similarly, a line chart is used to display trends in revenue and purchasing price over time, as a line chart provides a visual representation of how every variable changes with respect to time.

Results and Findings :

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

1. RICE stands out as the primary source of profit for Bansal Kirana Shop. Additionally, the purchase price of RICE remains stable throughout the month, making it an essential component of the inventory and difficult to reduce expenditure on.
2. Despite RICE being the main contributor to net profit, GHEE exhibits the highest profit margin among all the SKUs.
3. Applying the Pareto Principle to the data reveals that RICE, DRY FRUIT, GHEE, URAD DAL, OIL, and ATTA contribute to approximately 80% of the total profit.
4. When analyzing the revenue trend, the available data does not exhibit a clear pattern due to the limited amount of data collected thus far. However, it is evident that there are no significant fluctuations in the purchasing price of the SKUs over the course of the month.

In summary, the analysis highlights the importance of RICE as a profitable product, the high profit margin of GHEE, and the significant contributions of select SKUs to the overall profit. It also indicates the need for further data to identify revenue trends and the stability of SKU purchasing prices.

END
