

BUSINESS DATA MANAGEMENT

MID – TERM SUBMISSION

Grocery Business Management Through Data Analysis

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❖ **EXECUTIVE SUMMARY:**

NCD Suppliers is a grocery supplying medium scale organisation operating in central Kolkata, West Bengal. It buys its products directly from farmers and its main customers constitute of mobile vendors, supermarket shops and also delivers for catering services who in turn arrange social gatherings like weddings, birthday parties and any such relevant occasions.

Its prime areas of business include Gariahat, Salt Lake, and Newtown. The company also has a retail store in Jadavpur area contributing a fair amount to the revenue.

It deals in almost all kinds of groceries both seasonal and daily needed ones. It stores its supplies at two strategically located positions in the city from where transportation is fairly easy. During the summer months it's quite difficult to perform the required tasks while the colder months are relatively easier for the organisation to coordinate its resources.

Daily need groceries like Potato, Onion, Garlic, Ginger, Tomato, Carrot, Brinjal, Chilli and seasonal items like Cauliflower, Peas, Cabbage, Pointed Gourd, Radish, Mango, Pumpkin, Okra, Ridge Gourd are the bestsellers while other items have relatively lower sales.

The company aspires to “Deliver fresh and healthy grocery to its customers thus facilitating a fruitful return on the initial investment while building a trustworthy relationship.”

❖ DATA COLLECTION:

Sales data for the year 2021 was entered manually in an excel sheet from the organisation register. During this process I came to realise about some basic problems that the organisation is facing that is hindering their potential to function more efficiently.

- **Primary Problem:**

Lack of specialised workers in the organisation. The labourers do all the physical work while there are few people to do all the other tasks like stock checking, accounting, managing and etc. Due to this multitasking the efficiency as well as accuracy is lesser than expected. No one specialise in any single department, most of them seem to be 'jack of all trades, master of none'. Since the storage facilities are also poorly managed thus a lot of vegetables get wasted all over the year especially during the rainy seasons. Products also get wasted sometimes due to pests and during transportation in the summer months due to the extreme heat.

- **Competition:**

The organisation has been facing a fair bit of competition from other local suppliers while recently online grocery delivery services have only made the situation worse.

- **Storage:**

The organisation doesn't invest enough in advertisements thus having a very limited reach which hinders its potential to serve newer customers.

❖ PROOF OF ORIGINALITY:

M/s NCD SUPPLIERS
Anandapur, Kolkata - 700107

Mr. Bijoy Dutta
Proprietor of M/s NCD Suppliers
Anandapur, Kolkata – 700107
West Bengal

Date: 17.02.2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **SHREYAN NASKAR**, a bona fide student of the B.S. degree program, IIT Madras, has collected sales data from my organisation for the months of March to December of FY 2021 and has been in regular contact with me through phone calls, WhatsApp etc. for insights required for his project as stated in the reference letter from the institution.

I wish him great success.

Thank You.



Bijoy Dutta

The letter from the Organisation.

❖ METADATA:

Variable	Data Type	Description
Month	String	Month for particular data
Expenditure	Float	Money spent by the Org
Selling Price	Float	B2B selling price
Buying Cost	Float	Cost Price
Revenue	Float	Total sales of the Org in a given period of time
Profit	Float	Total Profit earned by the Org
Quantity	Float	Amount of item sold/bought

❖ DESCRIPTIVE STATISTICS:

STATS	N	RANGE	MIN	MAX	MEAN	STD. DEV.	VARIANCE
Revenue	10	₹ 5,37,825.00	₹6,04,670.00	₹11,42,495.00	₹7,92,063.40	146227.45	21382466571
Expenditure	10	₹ 4,27,058.00	₹5,35,526.00	₹9,62,584.00	₹6,87,501.20	116324.81	13531461216
Profit	10	₹ 1,10,767.00	₹ 69,144.00	₹1,79,911.00	₹1,04,562.20	30634.701	938484880.6
Quantity	10	7,318.00	10,746.00	18,064.00	12,437.70	1989.4889	3958066.01

❖ DATA CLEANING:

Raw data was recorded in the company register and it was entered manually into an excel sheet. Missing values and other such discrepancies were removed manually during the process of entering the data.

❖ DETAILED EXPLANATION OF ANALYSIS PROCESS AND METHODS:

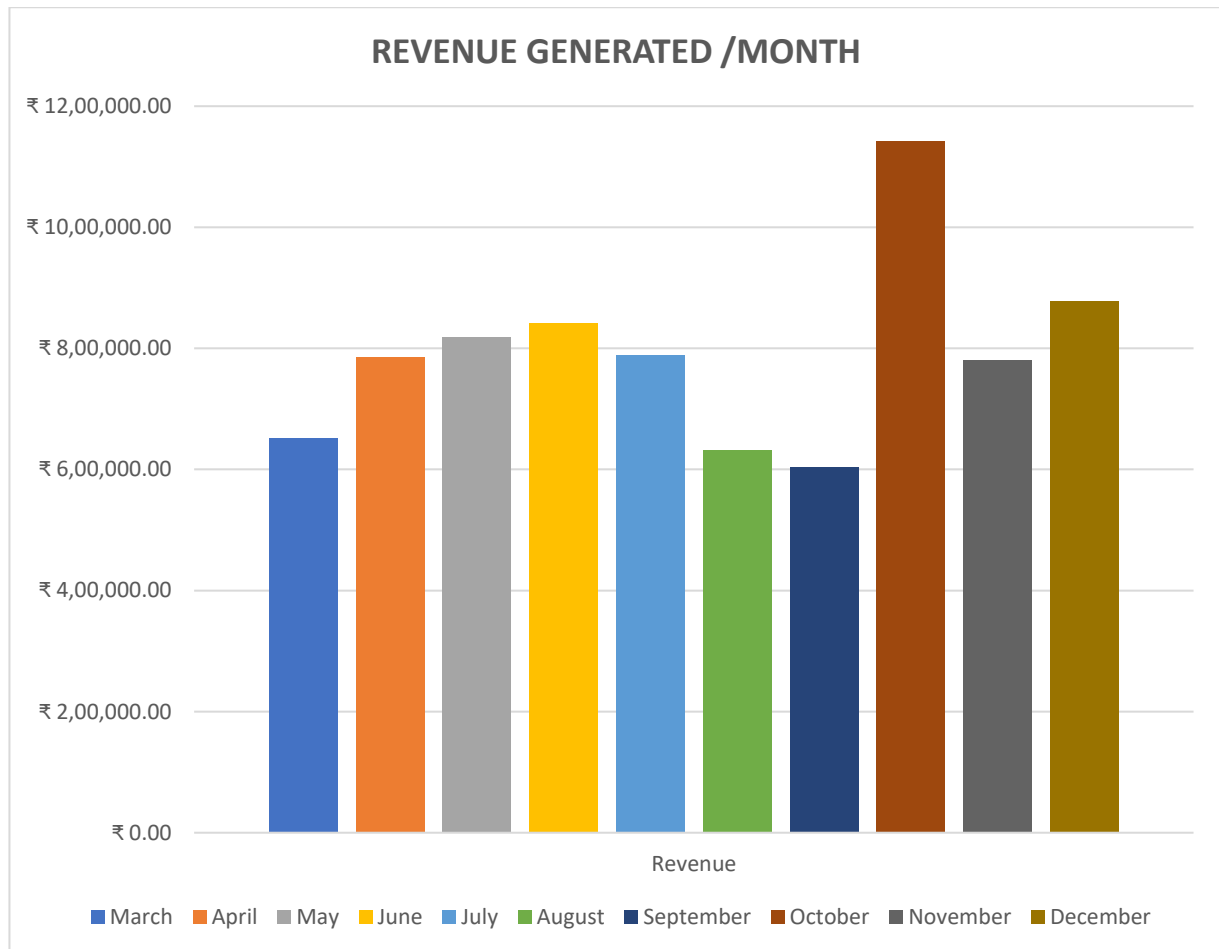
The recorded data contained :

- Daily revenue collected for March-December of FY2021.
- Amount(Kg) of items sold every month.
- The approximate average selling and cost prices(per Kg) of required items as the price keeps changing frequently.
- The other expenditures of each recorded month like Electricity Bill, Store Rent, Labour charges, and others.

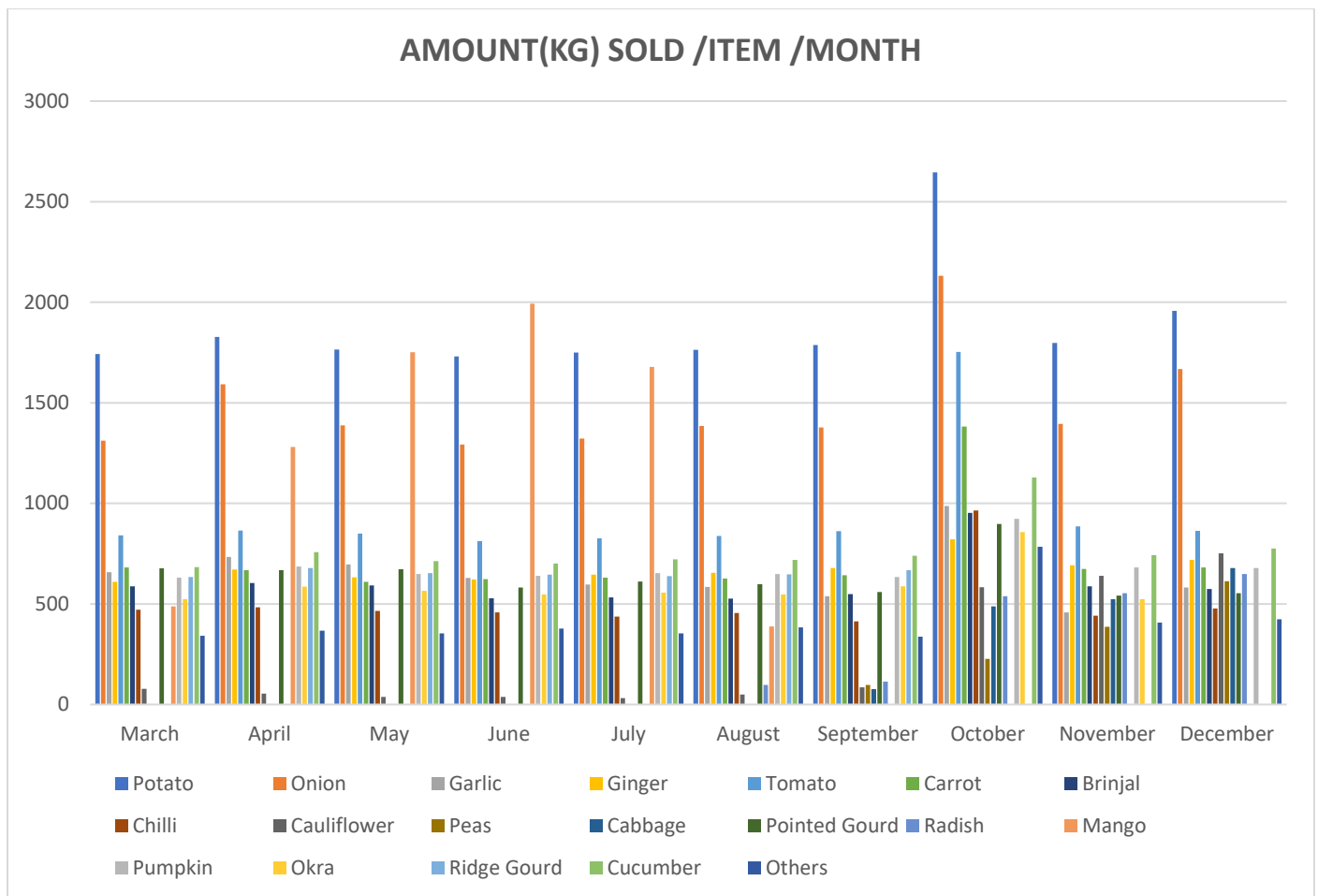
These given data was used to derive deeper structured and inferable data.

1. Revenue generated per item per month was calculated using the, each month item sale and average item selling price data.
2. The expenditure to buy the materials from various dealers using the, each month item sale and average item cost price data.
3. Using the above tables, Profit earned per item per month was calculated.
4. The total Expenditure, Revenue and Profit per month has also been calculated using the Daily sales list, Revenue generated and Profit earned tables.
5. Subsequently graphs were drawn using these derived data.

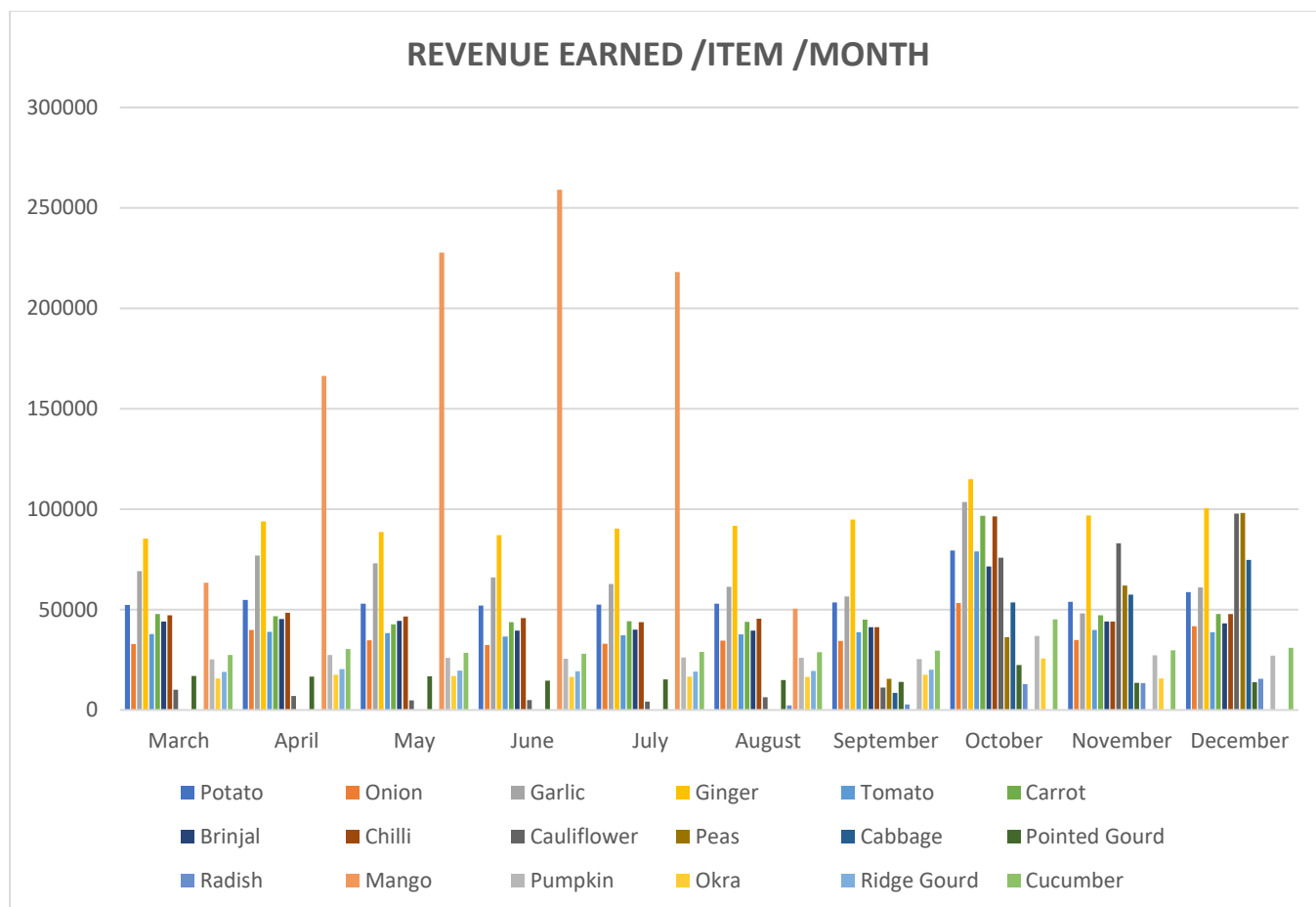
❖ RESULTS AND FINDINGS:



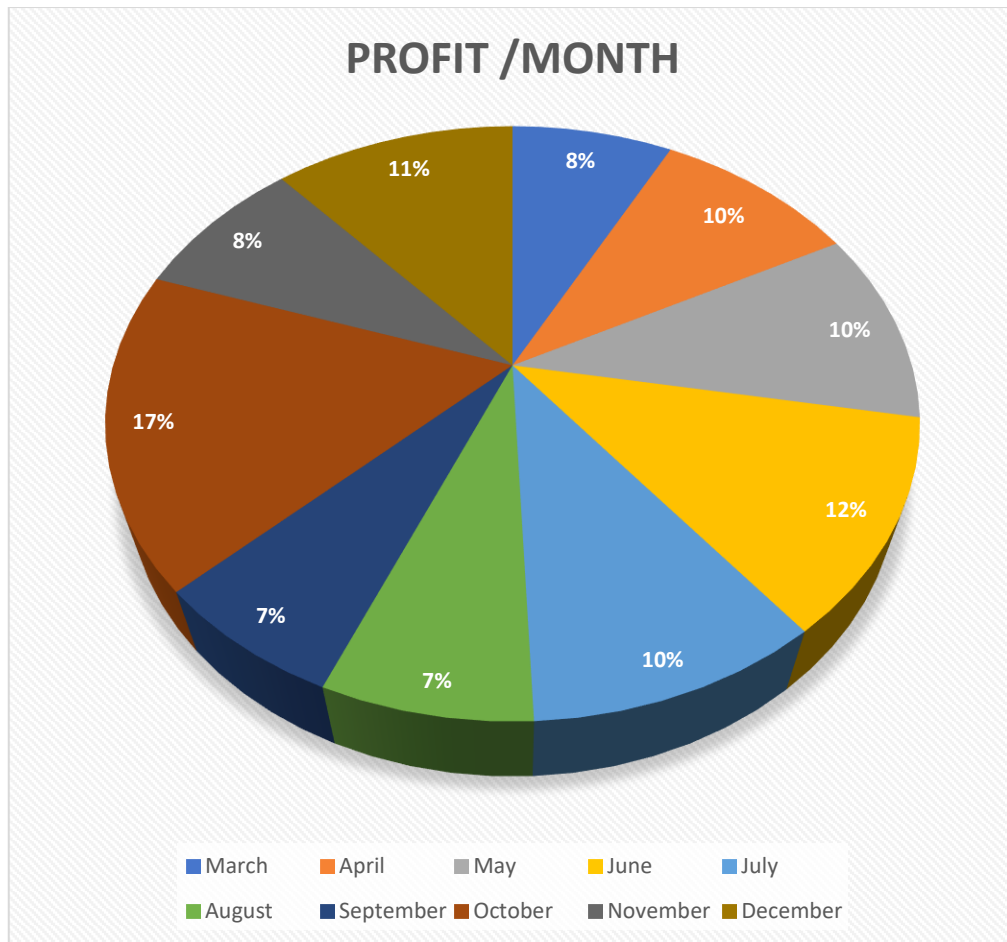
Revenue generated per month was plotted in a clustered column chart. We can easily conclude that maximum revenue is generated in October while September suffers the minimum revenue generated. Moreover, during the months March to August an average revenue is generated



Amount(Kg) of each required item was recorded and plotted in a bar chart. We can observe that Potato and Onion easily are the first and second highest in terms of amount sold each month. While Mango shows high sales during the summer month of May, June and July.



Revenue generated by each item each month has been plotted in a bar chart. It can be observed that Potato, garlic and ginger procure an above average revenue almost throughout the year. Mango stands out during the summer months as an exceptional revenue generator.



A pie chart has been plotted using the profit earned in each of the recorded months. October comes with the highest profit followed by June and December. August and September are the worst months in this regard.

END