

# **NAVIGATING B2C EXPANSION AND OPTIMIZING WAREHOUSE EFFICIENCY AMID LABOUR SHORTAGE**

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# INTRODUCTION

1

- **SNP is a B2B manufacturing firm based in Maharashtra.**
- **The firm was established in 1983, currently operated by Mr. Jigar Panchal.**
- **The firm engages in the production on industrial equipment such as cable trays, APFC panel, MCC panel, etc.**
- **The major clientele of the company includes electrical firms, hotels, malls, factories and builders, etc.**



# PROBLEMS

2

## First Problem

Severe labour shortages have caused factory shutdowns, leading to unfulfilled orders and customer dissatisfaction.

## Second Problem

Failed attempts to expand into the B2C domain due to poor implementation.

## Third Problem

Currently profitable, the firm aims to boost growth and maximize profits.

# ANALYSIS PROCESS

## ● Data Collection

- Data from June 2022 to July 2024.
- Sales and Purchase data: Date, customer, product, quantity, rate, price.
- Labour Data: Date, labour-count.

## ● Statistical Analysis

- Descriptive statistics about the data such as mean, median, mode, standard deviation, etc.
- Visualization using bar-charts, line-charts, pie-charts, heatmaps, etc.

## ● Data Cleaning

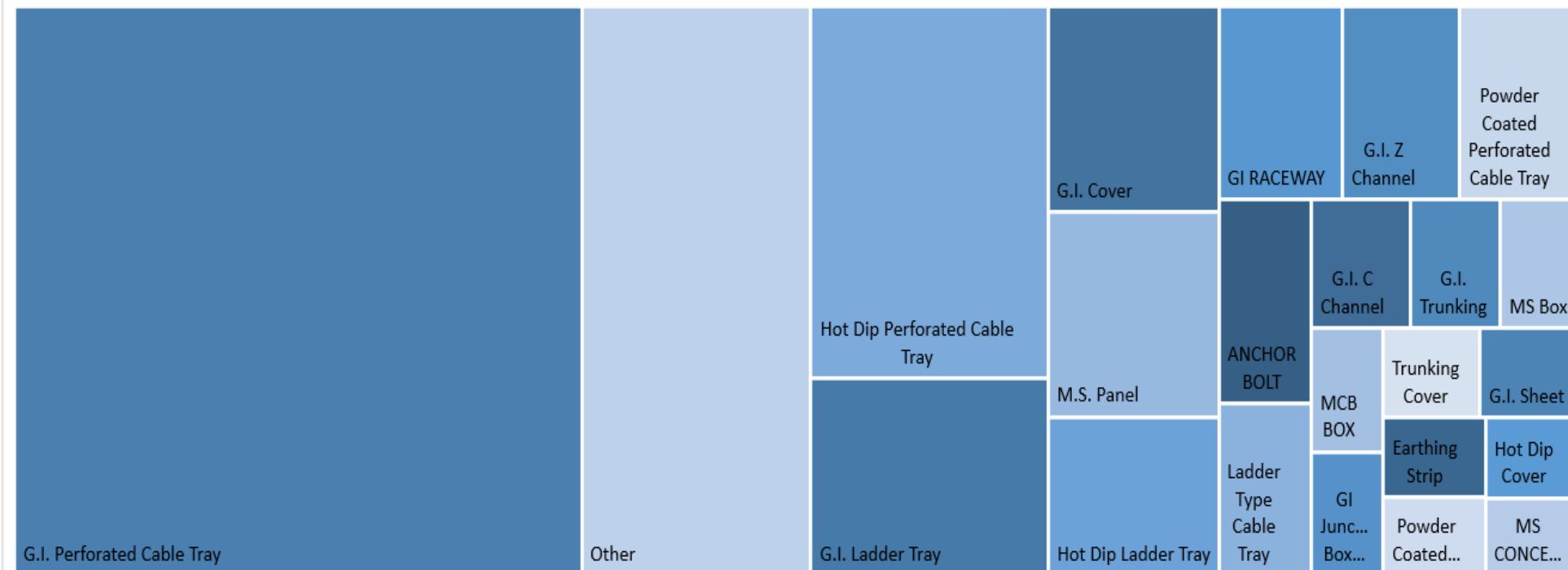
- Extracting data from PDF files using excel.
- Manual entry of Purchase and Labour Data.
- Formatting in CSVs and cleaning using Pandas and OpenRefine.

## ● Analysis Techniques

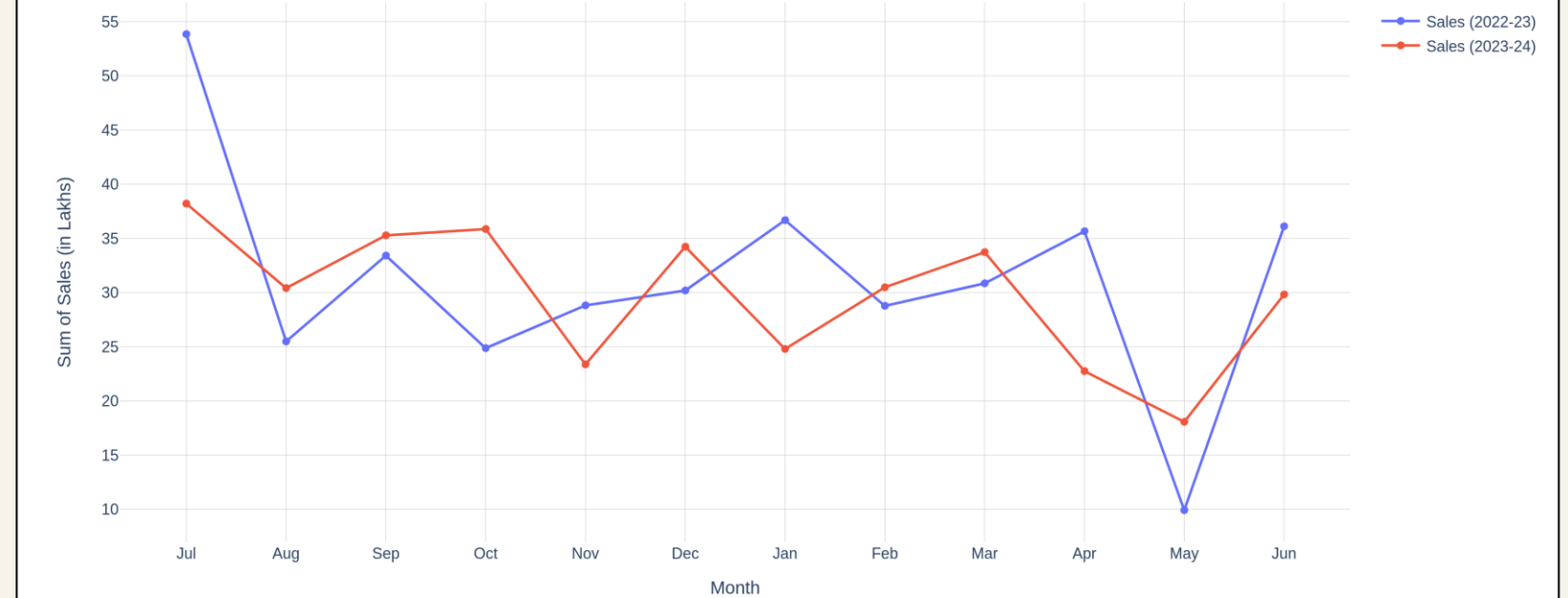
- Cost benefit analysis
- Time-series forecasting
- Regression analysis

# TRENDS IN SALES

Product-wise contribution to Revenue

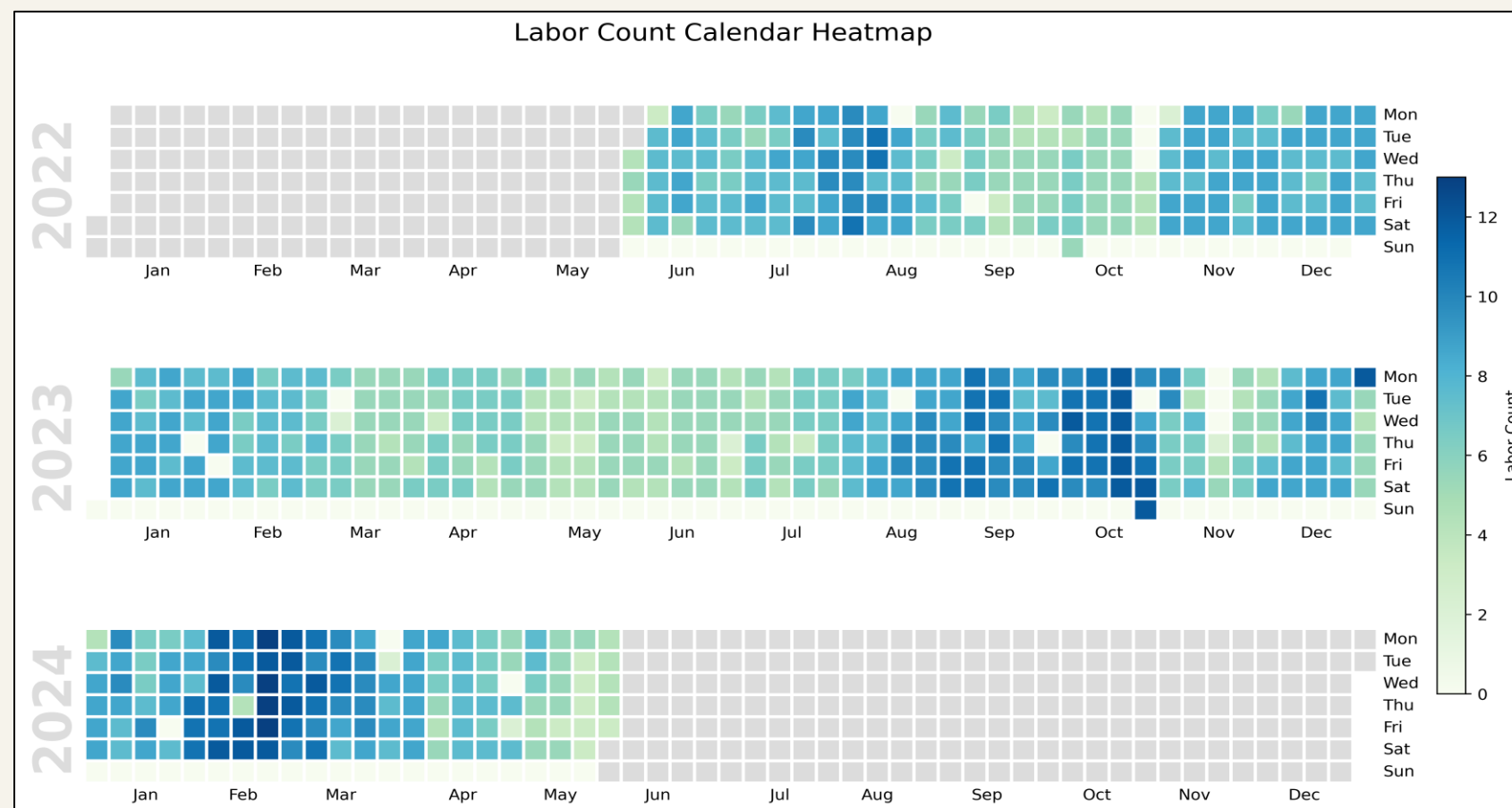


Sales Trend (2022-23 vs 2023-24)

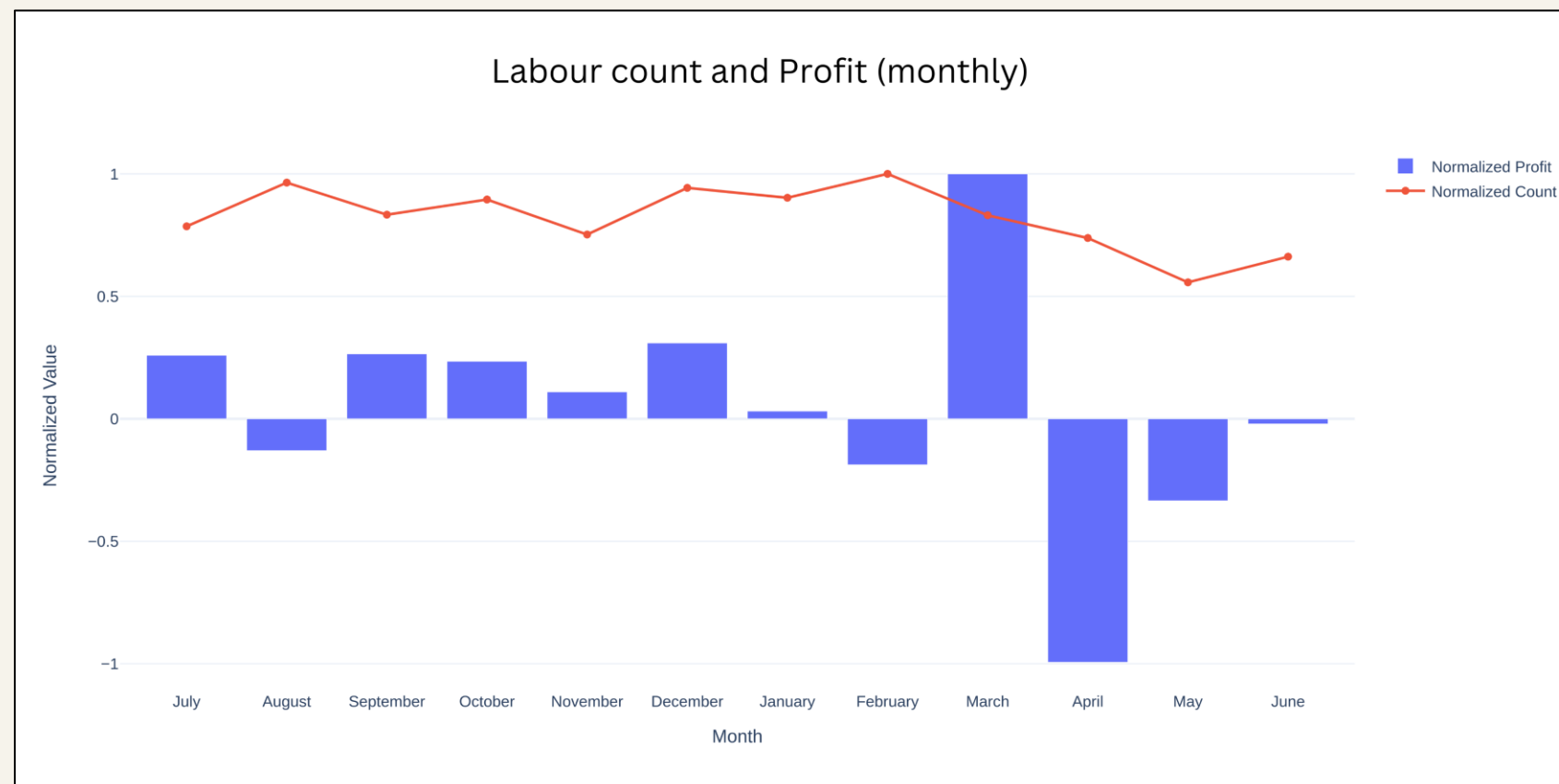


- Among numerous products sold, G.I. Perforated Cable Tray has the highest sales value.
- A variety of trays can be seen to be the top selling products.
- There is a decent variation in sales throughout the year. It drops to its lowest in the month of May for both the years.
- A decline can also be seen in the months of August and October for the year 2022-23. Similarly, the month of November in 2023-24 also saw a decline

# TRENDS IN LABOUR & PROFIT



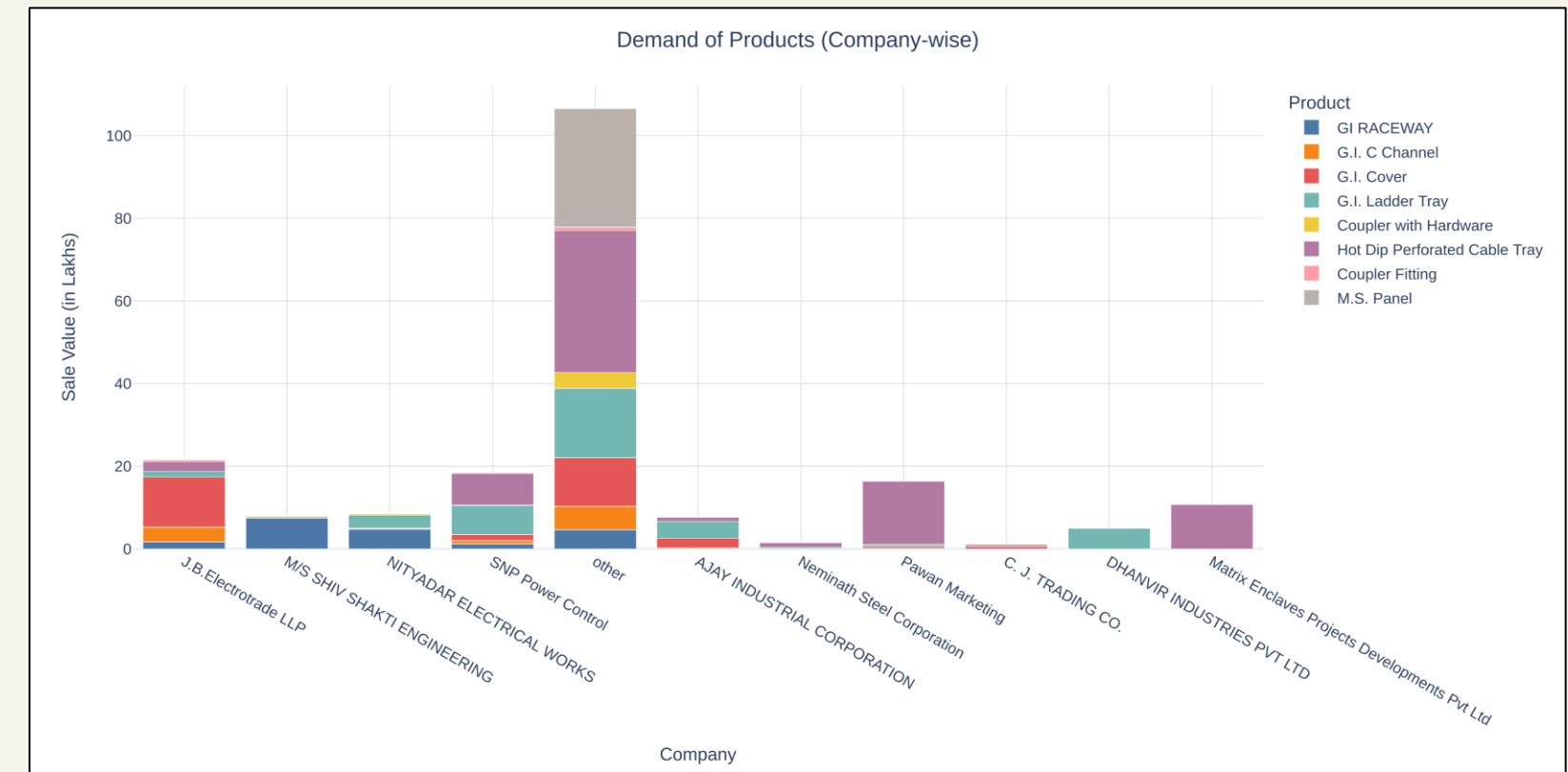
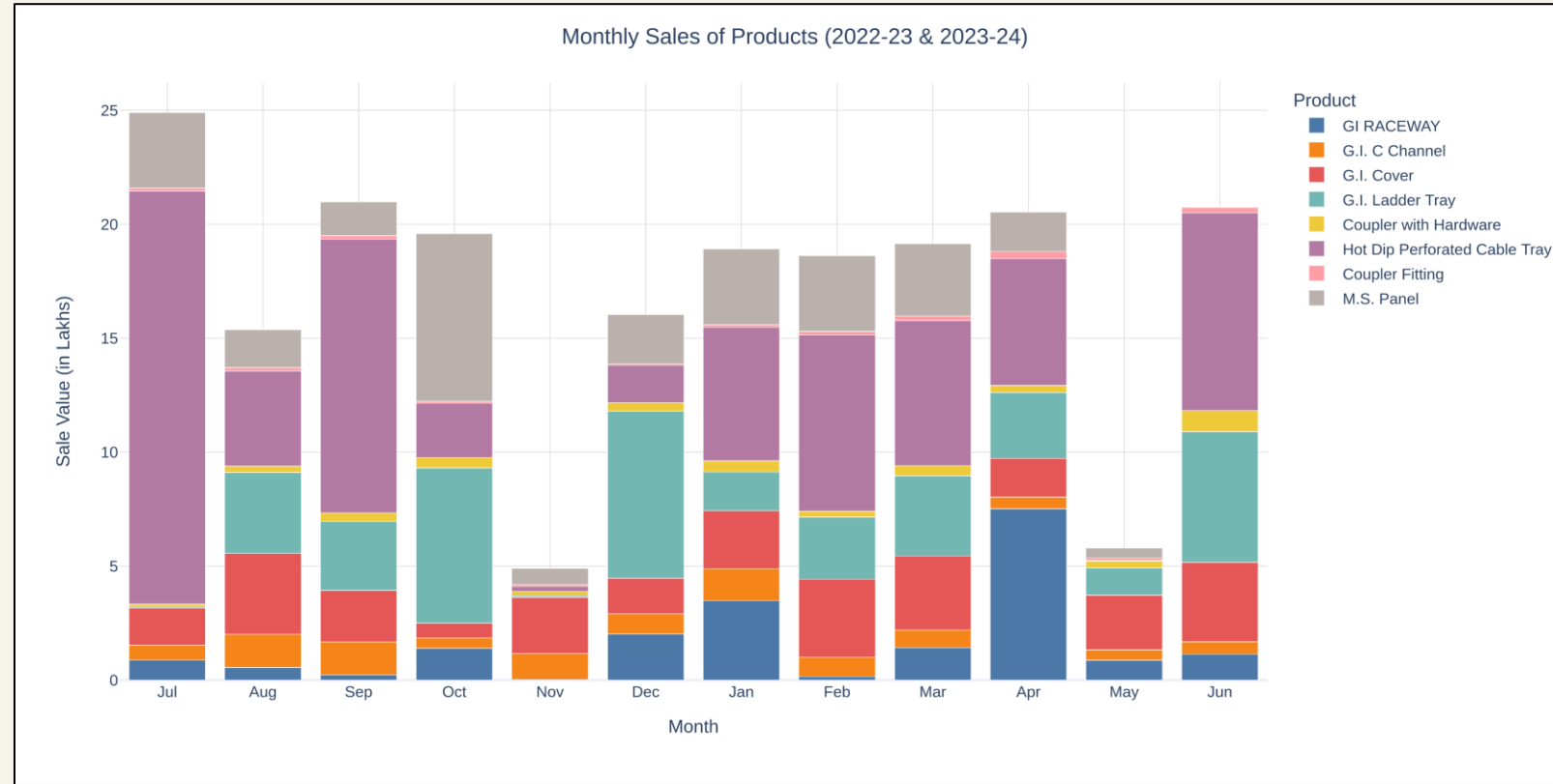
- The labour availability fluctuates throughout the year.
- The months of April-May suffer with labour unavailability in both the years.
- The labour strength is reduced in the third quarter of the year, particularly in October-November.



- The firm's profit remained negative for almost half of the year.
- Highest profit was seen in the month of March and it drops down to its lowest in April.
- The labour count is higher in all the month except March when compared to profit.



# PRODUCT-WISE SALES ANALYSIS



- G.I. Perforated Cable Tray is the highest selling product of the firm. Apart from it, the firm has a constant demand for products like Hot Dip Perforated Cable Tray, G.I. Ladder Tray and M.S. Panel throughout the year.
- The frequent customers of the firm such as J.B. Electrotrade and Pawan Marketing has higher demand for products like G.I. C Channel and Hot Dip Perforated Cable Tray respectively.
- The customers from the 'Other' category, though insignificant individually, contribute highest to the sales when combined.

# WAREHOUSING (COST-BENEFIT ANALYSIS)

- The company offers a wide variety of products, among which products like G.I. Perforated Cable Tray, Hot Dip Perforated Cable Tray, M.S. Panel, etc, are frequently demanded.
- Surplus production and warehousing of such products can prove to be beneficial for the firm but it is important to consider the warehousing cost for the same.
- The expected cost that the firm may incur to warehouse its products is approximately ₹62,500 including the cost of renting a warehouse, packaging and security of the products.
- Conducting a cost-benefit analysis by taking into account these costs, reveals that the firm can make a profit of approximately ₹3.9 lakhs in the months where labour is unavailable.



# LABOUR FORECASTING

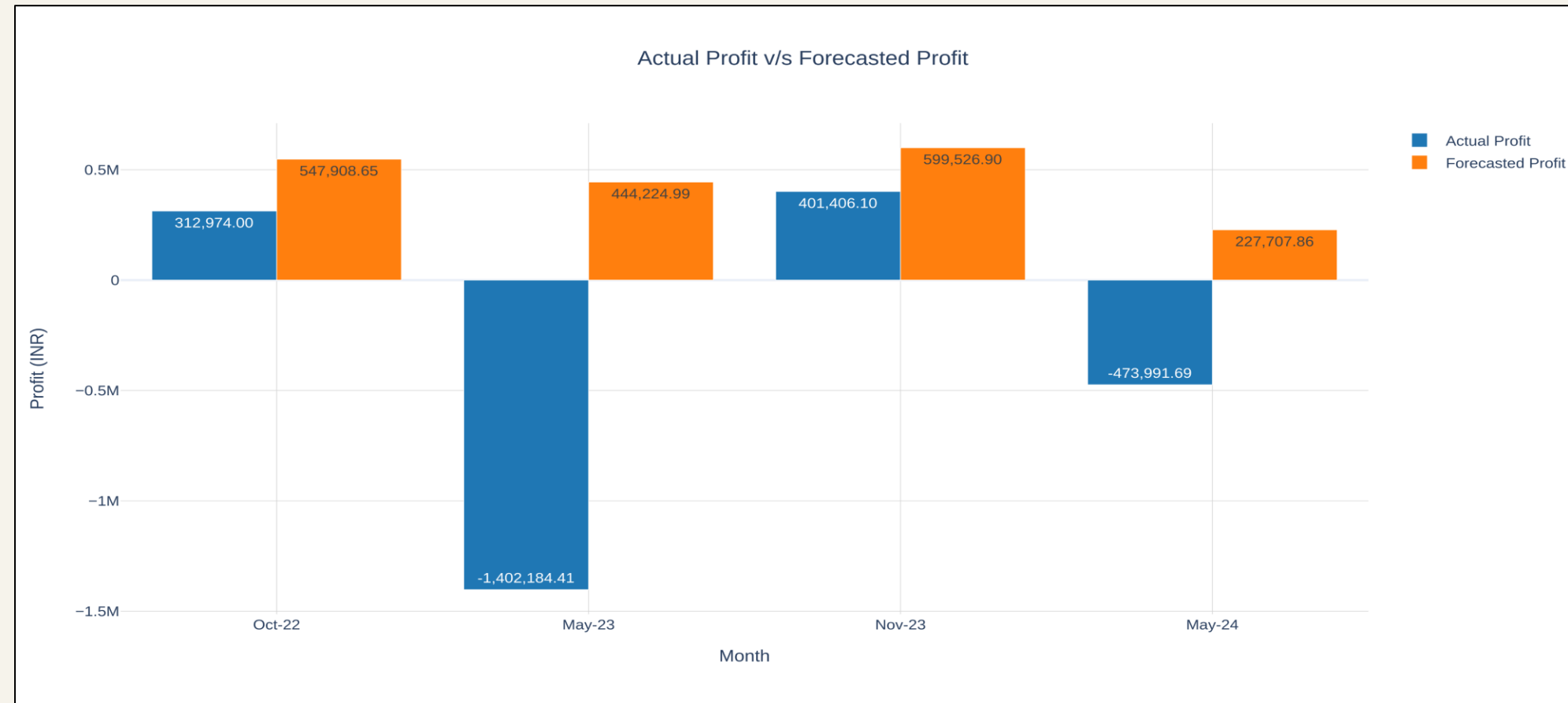
- To determine if hiring labour at higher wages during shortages is beneficial, a labour forecast and cost-benefit analysis were conducted.

Actual Values				
Month	Labour	Salary (in ₹)	Purchase (in ₹)	Sales (in ₹)
Oct-22	117	64350	2110479	2487803
May-23	117	64350	2330241.41	992407
Nov-23	120	66000	1870531.9	2337938
May-24	117	64350	2217391.25	1807749.56

Forecasted Values				
Month	Forecasted Labour	Forecasted Salary (in ₹)	Forecasted Purchase (in ₹)	Forecasted Sales (in ₹)
Oct-22	149	96850	2211118.2	2855856.5
May-23	168	109200	2249081.5	2802224.8
Nov-23	207	134550	2143901	2877724
May-24	136	88400	2259433.5	2575827.5

- The expected labour requirements for the above months were forecasted to estimate labour counts which would have existed had labour been independent of the external factors.
- Since the labour availability will affect the sales, the resultant increase in sales and purchases were accounted for using a regression model.

# LABOUR FORECASTING



- Using the forecasted values for sales and purchase, the profit for the given months was calculated.
- The actual profit remained low and even negative for few months.
- The forecasted profit suggests that the increase in labour due to the increase in wage rate results in higher profits.

# RECOMMENDATIONS

**1**

The analysis suggests warehousing frequently demanded products during times of high labour availability to help manage shortages and meet market demand. Producing surplus products when labour is available allows the company to better handle demand fluctuations.

**2**

During May, low labour availability causes the firm to miss demand and incur losses. Increasing wages by 20%-25% could attract more workers, helping to meet labour needs and potentially turn losses into profits.

**3**

The analysis shows labour is significantly under-utilized in most months. To improve productivity and reduce costs, the firm should monitor employee performance closely, identify inefficiencies, and implement targeted strategies to optimize labour use and increase profits.

**4**

In today's technology-driven world, an online presence is essential. Shree Pareva Industries could gain more customers by creating a website to advertise products and offer e-commerce services and hence expand its business into the B2C sector.

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**THANK YOU**