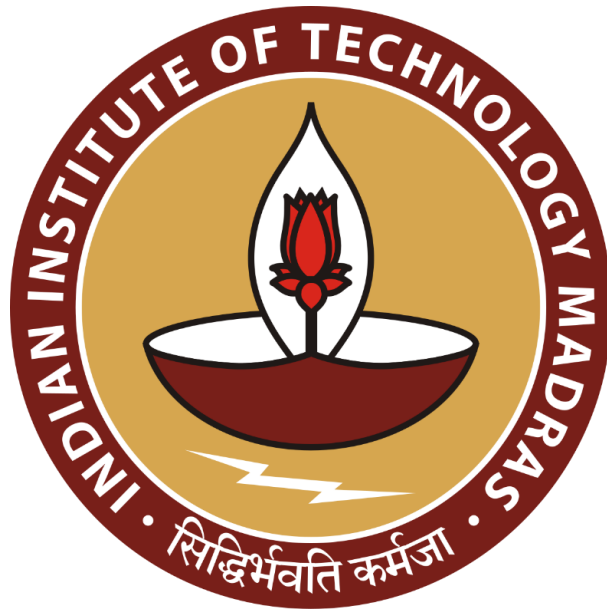


Enhancing Profitability and Inventory Management



BUSINESS DATA MANAGEMENT

FINAL REPORT

BANOTH PAVAN

21f1002144

21f1002144@ds.study.iitm.ac.in

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Executive Summary

Sri Manikanta electricals, situated in Thimmarao peta, is dedicated to delivering high-quality products at competitive prices while ensuring customer satisfaction and maximizing profitability. The analysis, spanning six months of sales data, focuses on key objectives aimed at optimizing revenue and addressing stock management challenges. Strategies are proposed to boost sales, improve inventory management by identifying top and bottom-performing product categories, and mitigate waste resulting from excessive investments in low-revenue products.

The collected data spans over 6 months and will be examined from multiple angles to identify which electrical products contribute most significantly to the revenue. Additionally, the study will explore the impact of price fluctuations on the quantity sold, pricing dynamics, and the duration of the products' sales periods.

Utilizing pivot tables and visual representations such as charts and tables, the analysis identifies top-selling items and provides a clear understanding of sales trends and patterns. The insights gained from the data-driven approach aim to optimize profits by identifying high-margin products and allocating resources effectively.

In conclusion, the analysis equips Sri Manikanta electricals with valuable strategic insights, empowering the shop owner to navigate challenges, enhance customer satisfaction, and foster long-term growth in the competitive retail industry.

Detailed Explanation of Analysis Process

Firstly, I have collected data of and stock and sales of 20 electrical items over 6 months. Then, I cleaned the data collected and formatted the data types and named the columns and arranged the data that is easy to understand and interpret. Few changes had to be made in the process to proceed for further step without any issue with data elements.

There was some unimportant data which were not useful for analyzing objectives like address, customer name, customer contact number, GSTIN/UIN etc. so I eliminated them to focus only on the main objective data.

The subsequent phase of the analysis involved categorizing the data into Cost Details and Sales Details to facilitate a more insightful exploration of the dataset.

Creating a new sheet dedicated to Cost Details, I computed the expenses associated with each type of electrical product for each month. By aggregating the weekly expenditures on different products, I then

calculated the average expenditure per product using a pivot table. Subsequently, I visualized this information by generating a bar chart, providing a clear overview of average expenditures across different product categories. And done the possible analysis.

Objective 1: A Comparative Analysis of Stock and Sales.

The objective is to conduct a thorough comparative analysis between stock levels and sales performance for different electrical products. The key steps for achieving this objective are

- Examining monthly stock data to identify inventory levels for each product category.
- Removed sensitive data and unnecessary information other than stock and sales transactions from the data.
- To identify patterns and trends based on month, categorised the daily data further into months.
- Comparing stock levels with the corresponding monthly sales data to understand the relationship between inventory and sales performance.
- Utilizing data visualizations to present a clear and concise overview of the comparative analysis between stock and sales.
- After analysing, it has been identified that a major contribution to the shop's revenue is done by Cash. This is largely influenced by the significant population of elderly customers in the neighbourhood who still prefer using cash over UPI for their transactions.
- A significant part of the revenue also comes from UPI transactions, which cannot be ignored.

Objective 2: Identification of high-performing and low-performing goods.

In order to optimize product offerings and maximize profitability, a detailed analysis of sales data for the electrical shop was conducted. The primary focus is on identifying the categories that significantly contribute to sales and those that may require strategic adjustments. The following steps were taken to achieve this objective:

- The sales data for the specified period was gathered, categorizing items based on their product categories.

- High and low-performing categories were determined by analysing the total sales for each category over the designated timeframe.
- Patterns and trends were identified by categorizing the monthly sales data, providing a granular view of sales dynamics.
- Monthly sales for each category were aggregated, enabling a comprehensive understanding of their individual contributions to the total revenue.
- The analysis revealed that certain product categories play a pivotal role in driving sales, while others may benefit from targeted strategies to enhance their performance

Objective 3: Identifying the best and worst performing category of products to optimise the sales.

Conducting a thorough evaluation of the monthly performance of electrical products, the focus has been on gaining valuable insights to strategically optimize sales within the business. This analysis encompasses a diverse range of electrical items, considering their individual performance patterns over time. The primary objective is to discern areas of strength and potential improvement, enabling the efficient allocation of resources and informed decision-making.

The product inventory has been observed across various dimensions, avoiding rigid categorization to maintain a holistic perspective. This approach allows for a nuanced understanding of how each product contributes to the overall sales dynamics. By identifying successful products and those that may be underperforming, the goal is to implement strategies that foster growth in high-performing areas and address challenges in others.

The systematic evaluation process considers monthly variations, sales trends, and customer preferences. This holistic analysis empowers the business to adapt to changing market conditions, respond to customer demands, and enhance overall sales performance. It serves as a roadmap for strategic decision-making, providing a foundation for resource optimization, inventory management, and the identification of growth opportunities.

In essence, this comprehensive examination of the monthly performance of electrical products serves as a proactive approach to steer the business towards sustained growth. It provides a basis for fine-tuning sales strategies, improving customer satisfaction, and ensuring the long-term success of the electrical shop in a dynamic market landscape.

Objective 4: Improving the Store's overall profitability.

To realize this objective, a thorough analysis of the electrical shop's performance was conducted, focusing on key factors influencing profitability. The examination encompassed a detailed review of left-over stock quantities, allowing for insights into inventory management and sales efficiency.

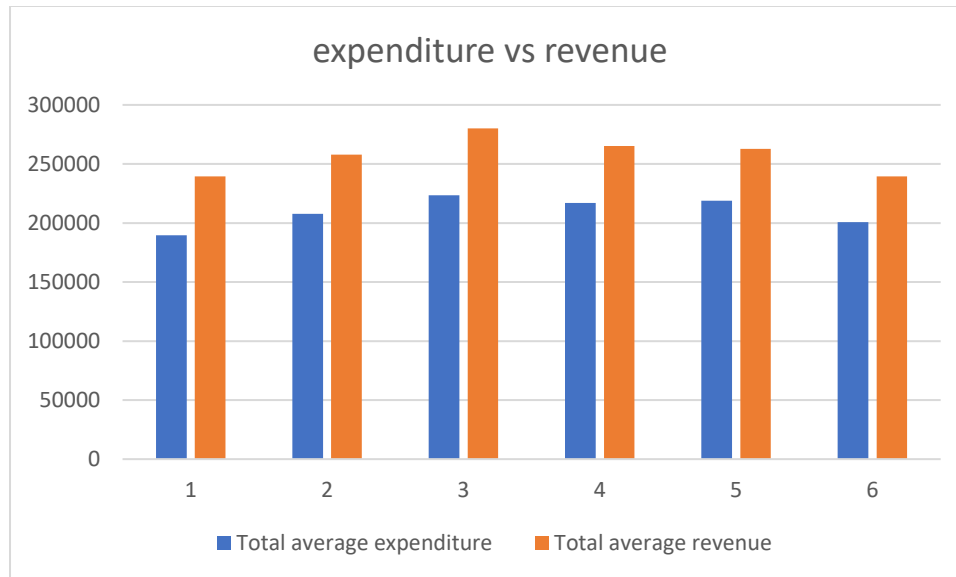
The analysis included a comprehensive study of various electrical items, considering their monthly performance, sales trends, and left-over stock quantities. By identifying patterns and trends within the left-over stock data, the objective was to strategically optimize inventory levels, reduce excess stock, and enhance overall profitability.

Concurrently, an analysis of payment methods highlighted UPI as the most utilized, followed by cash and bank transfers. This data underscores customer preferences and transaction trends, informing initiatives to streamline payment processes and potentially reduce costs.

Additionally, qualitative feedback from customers was carefully reviewed to gain insights into their experiences and expectations. This qualitative analysis provided valuable information for shaping strategies that address specific concerns and suggestions raised by customers. Aligning these insights with left-over stock data contributes to a holistic approach aimed at improving the overall customer experience and driving increased profitability.

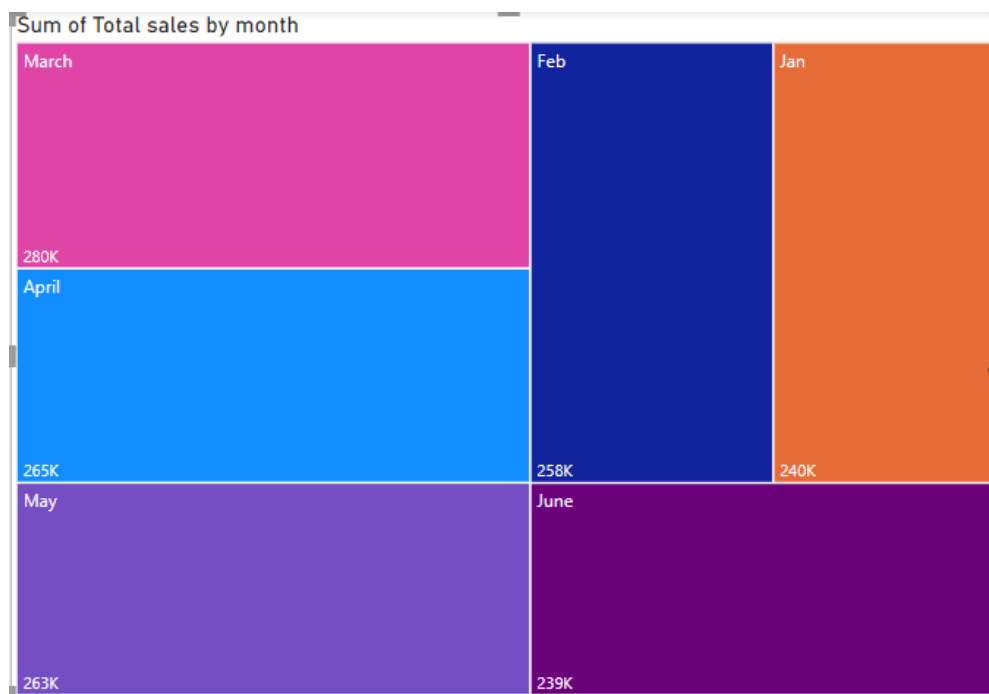
Results and Findings

Objective 1: A Comparative Analysis of Expenditure and Revenue



- The graph shows the average expenditure and average revenue of shop over a six-month period.
- Inconsistent Sales and Expenditure: Torch Lights- High variability in sales and consistent high expenditure might lead to periods of low profitability. Ceiling Fans- High sales variability with consistently high expenditures can cause issues in months with lower sales.
- Low Profit Margins: Items like Pipes, Socket Plugs, Regulators, and Junction Box have relatively low profit margins. The expenditure is high enough that the resulting profit is minimal.
- High Expenditure Relative to Revenue: Ceiling Fans: Although revenue is high, the expenditure is also significant, resulting in a lower profit margin. Electric Panels: High expenditure close to revenue, leaving a small margin for profit. Circuit Breakers and Power Strips- Similar issues where expenditure is high relative to revenue.
- Shop keeper should reduce costs for low-profit items like Pipes and Socket Plugs. This could include negotiating better terms with suppliers, improving production efficiency, or finding alternative materials.
- Business should enhance marketing efforts for items with low sales but potential for higher margins, such as Regulators and Power Strips.

- Owner should adjust pricing for items where expenditure is close to revenue to improve profit margins. For example, slight increases in the selling price of Electric Panels and Ceiling Fans might be necessary.
- Implement better inventory management practices to ensure that high-cost items like Ceiling Fans and LED Lights are not overstocked, thereby reducing holding costs.
- Overall, the graph suggests that the business is making a loss, but there are some positive signs that things may be improving. The business needs to continue to focus on reducing its costs and increasing its sales in order to become profitable.

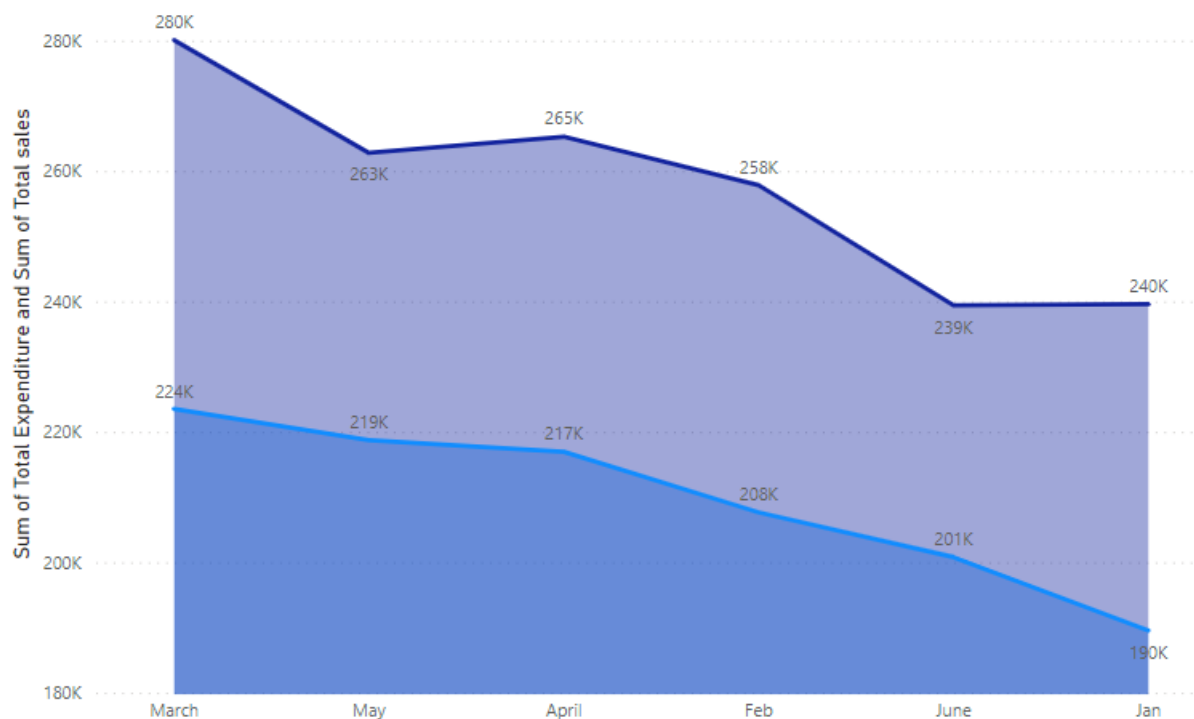


- The tree map provides an intuitive representation of the impact of each month on the overall sales landscape, helping in understanding the relative significance of each period
- The total sum of sales across all six months is 1,548,025.
- Overall decline in sales: There's a general downward trend in sales from March to June, with June recording the lowest sales at 239K.
- March stands out as the month with the highest sales, contributing 280,085 to the total. It suggests that, inventory and sales of march month can be used as ideal for other months. ,

- could be strategic focal points for optimizing marketing efforts, inventory management, and promotional activities.
- Shop keeper should perform a detailed cost-benefit analysis for each product to identify and eliminate any products that consistently fail to generate sufficient profit.
- Months with lower sales, like June, represent opportunities for improvement. Strategies can be developed to address challenges and enhance sales during these periods.

Sum of Total Expenditure and Sum of Total sales by month

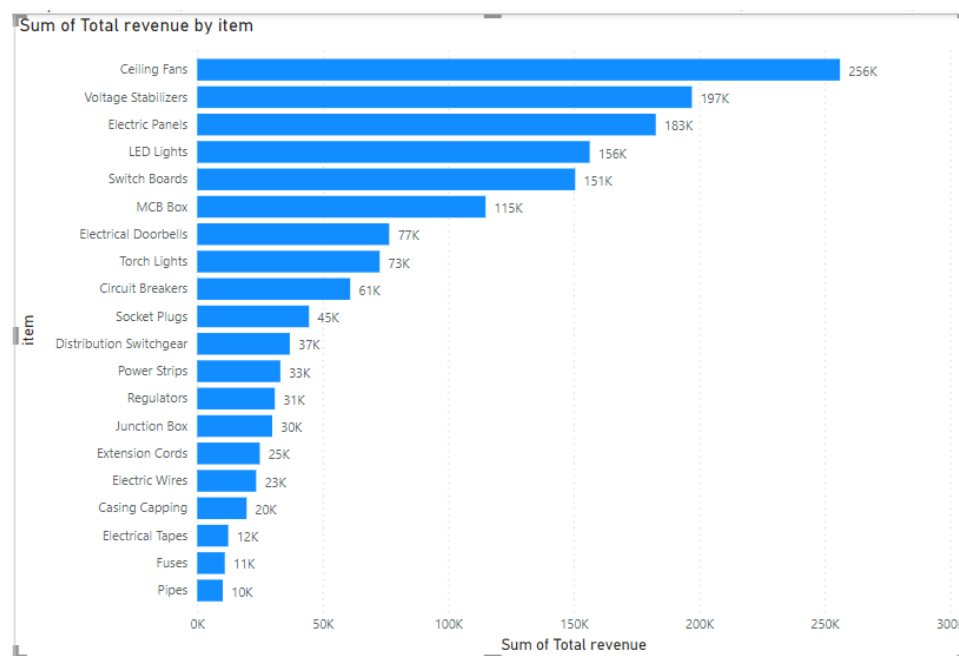
● Sum of Total Expenditure ● Sum of Total sales



- Revenue consistently exceeds expenditure. This is a positive sign, indicating that the business is generating a profit each month. The gap between the two bars appears to be constant, suggesting stable profitability.
- Jan, Feb, and March appear to be the highest-revenue months. The bars for these months are noticeably taller than the others, suggesting strong performance during this period.
- April, May and June appear to be the lowest-revenue months. Conversely, the bars for these months are shorter, indicating a dip in income.

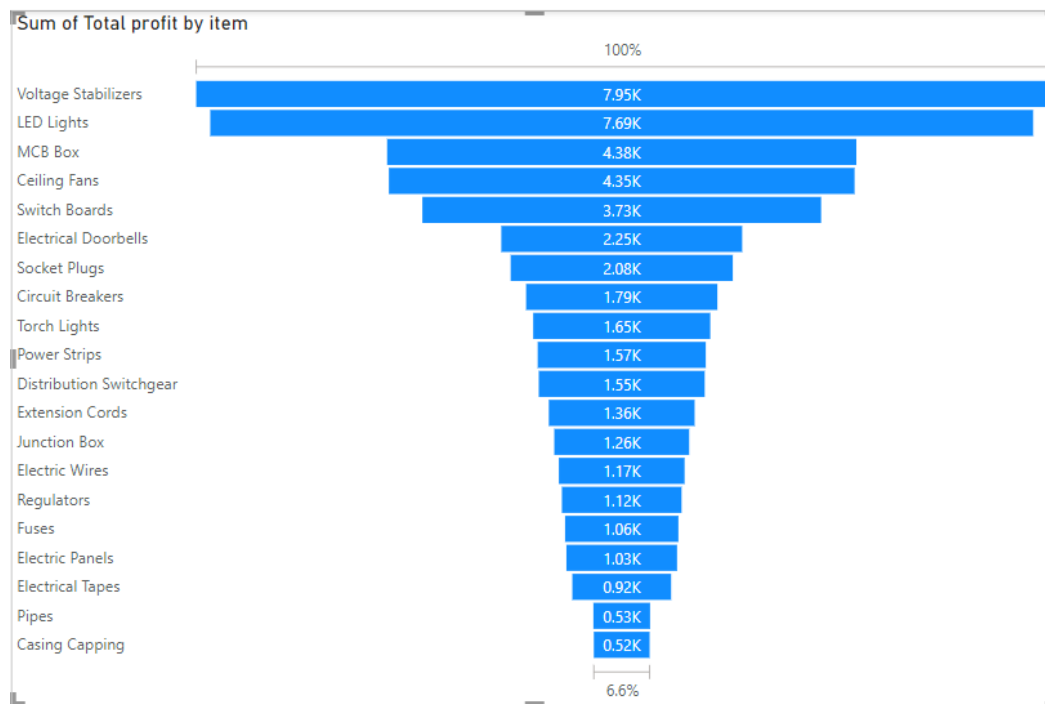
- Seasonality: The data reveals a significant peak in March for both sales and expenditure, followed by a consistent decline. This suggests that the business might be heavily reliant on seasonal factors, which can make it vulnerable to fluctuations in demand.
- If the business is heavily dependent on seasonal factors, it's important to explore ways to diversify revenue streams. This could involve introducing new products or services, targeting different customer segments, or expanding into new markets.

Objective 2: Identification of high-performing and low-performing goods.



- From above graph it's clear that Ceiling Fans are generating more revenue than any other item with a revenue of 256k rupees.
- It is also clear that Pipes are generating least revenue than any other item with a revenue of 10k rupees.

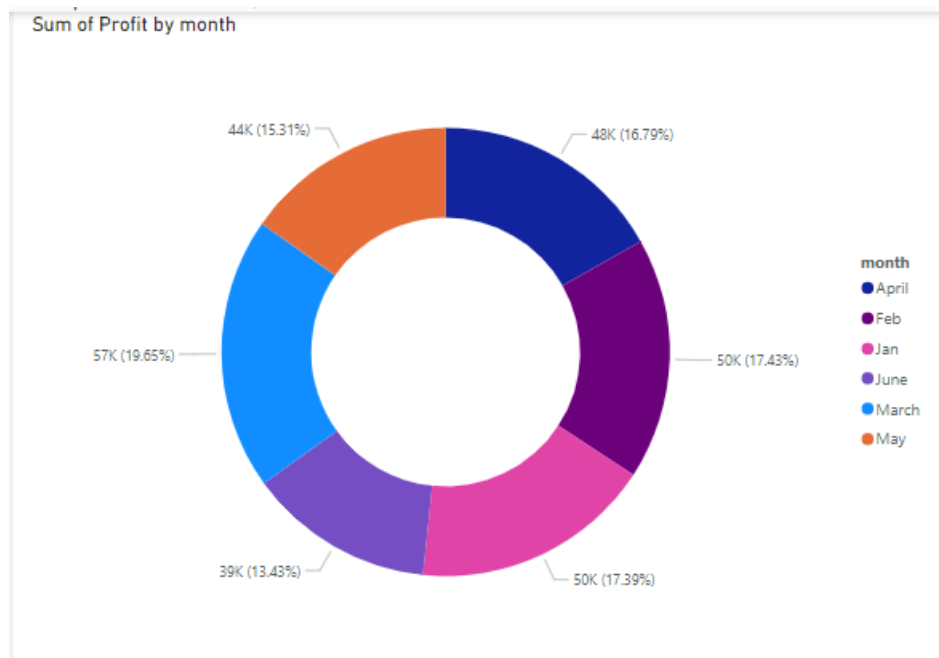
- To label items as best performing, we should look into profits generated by each item.
- Product review: Shop keeper should focus on high-margin products and consider discontinuing or revamping low-performing ones. He should regularly review product performance metrics to identify trends and take corrective actions.
- Shop keeper should always consider the demand of the items and manage accordingly.
- Price is also an important aspect in sales fluctuations. User friendly cost items will generate higher revenues.



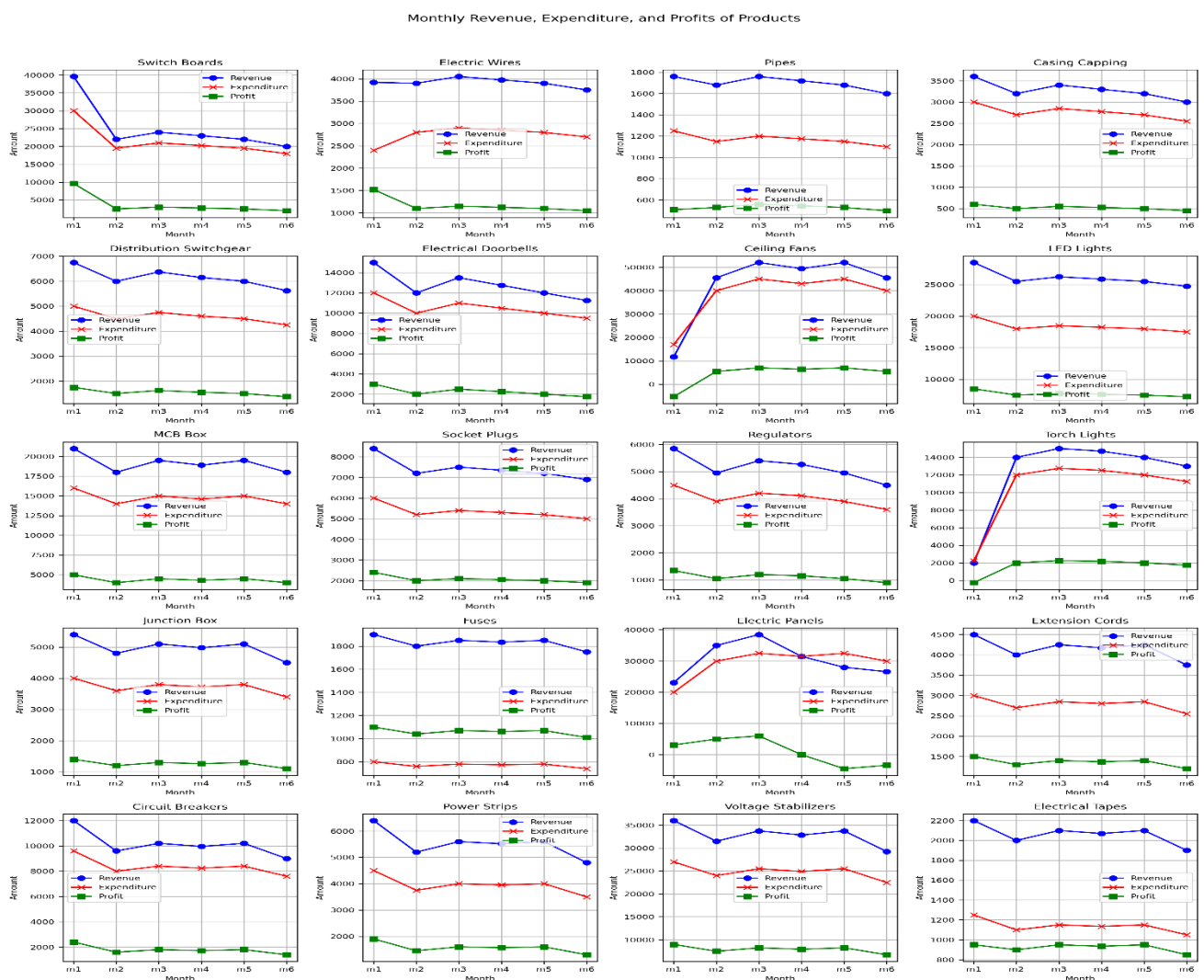
- From this graph, we can clearly say that Voltage stabilizers and LED lights are contributing most of the profit with an amount of 7.95k rupees.
- With this information, we can say Voltage stabilizers and LED lights are best products, owner should focus more on these items like making sure there is no shortage of these items.

- MCB Boxes and Ceiling Fans follow as the next best performers, with profits exceeding 4K.
- The top 5 items account for almost 50% of the total profit.
- Low performers: Items like Pipes and Casing Capping have the lowest profit margins, less than 1K
- The mid-range performers offer potential for growth. Strategies could include bundling these items with top sellers, offering discounts, or increasing marketing efforts.
- Owner should try to improve sales of Electrical tapes, Pipes and Casing capping by adopting strategies and focus on more items.
- Shop keeper should focus on product Diversification, pricing Strategy and marketing and Sales Focus

Objective 3: Analysing monthly performance of products to optimise the sales.

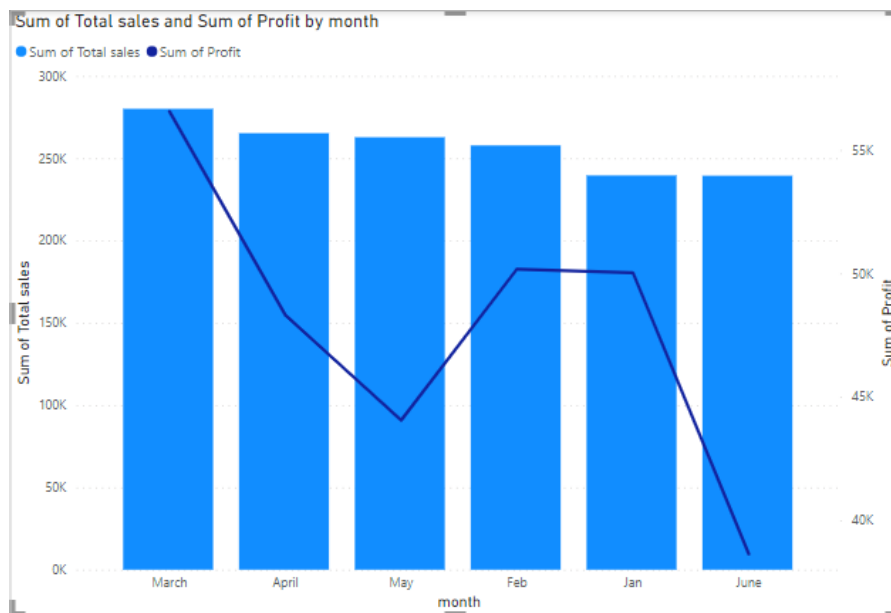


- Profit Distribution: The pie chart shows that the majority of the profit (19.65%) comes from "March." This is significantly higher than any other month, indicating a strong focus on performance during that period.
- March stands out as the month with the highest profit contribution, suggesting successful strategies or increased demand during that period.
- Low-profit months, as indicated by smaller slices, represent potential focus areas for improvement. Strategies can be devised to address challenges and enhance profitability during these periods.



- This graph explains expenditure, revenue and profit of each item over 6 months for better understanding product performance.

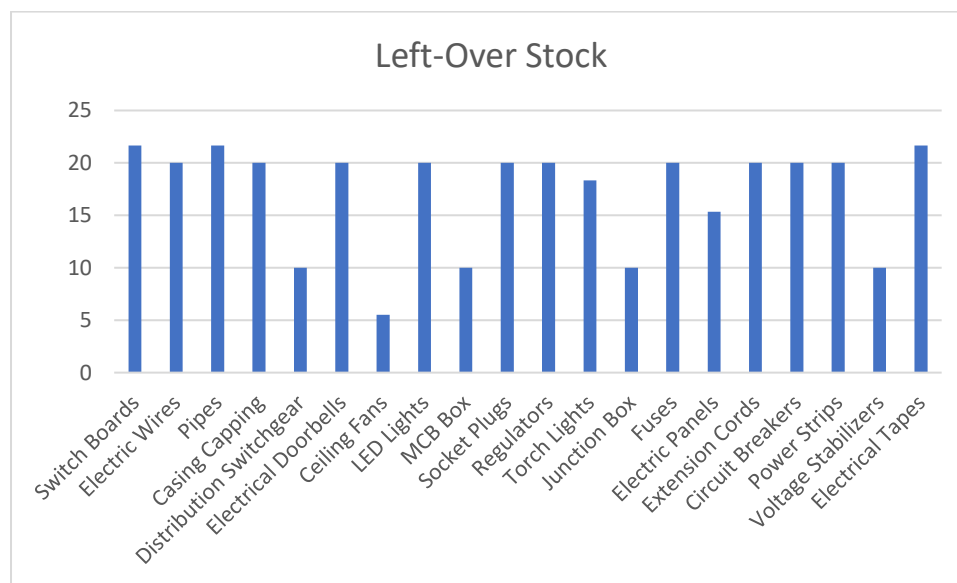
- High Revenue Products: Ceiling Fans, Voltage Stabilizers, Electric Panels.
- Consistently Low Revenue Products: Pipes, Fuses, Junction Box.
- High Expenditure Products: Ceiling Fans, LED Lights, Electric Panels.
- Products with Fluctuating Performance: Torch Lights, Electrical Doorbells.
- High Expenditure with Variable Profit Margins: Ceiling Fans have high sales but also high costs, leading to lower profit margins in some months.
- Low Revenue Products: Products like Pipes, Fuses, and Junction Boxes consistently underperform in terms of revenue.
- Fluctuating Performance: Products such as Torch Lights and Electrical Doorbells show significant fluctuations in monthly performance, indicating possible market or seasonal influences.
- Underutilized Potential: Some products with high-profit margins, like Voltage Stabilizers, are not being maximized to their full potential.
- Reduce Expenditure on High-Cost Items: Ceiling Fans- Negotiate better supplier terms, optimize inventory, and streamline production to reduce costs without compromising quality



- From the graph, we can say that in the month march, both sales and profits are maximum means people are buying more items in march month, so owner should focus on customer preferences in different time periods.

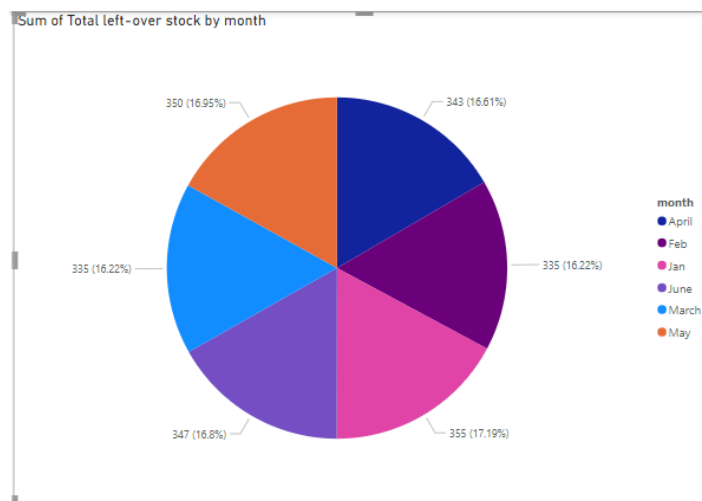
- In the month June, both sales and profits are minimum. We can clearly see the falling pf profits. Even though there is a slight change is slight, profits have decreased a lot , This could changes in prices and customer choices.
- The notable peak in March suggests potential factors, such as seasonal demand, promotions, or specific product sales contributing to higher profits. Identifying the drivers behind this peak can inform strategies for replicating success in other months.
- The decline in profitability in June raises questions about potential challenges or shifts in customer behaviour. Exploring the reasons behind this dip is essential for implementing corrective measures and preventing similar downturns in the future.

Objective 4: Improving the Store's overall profitability.



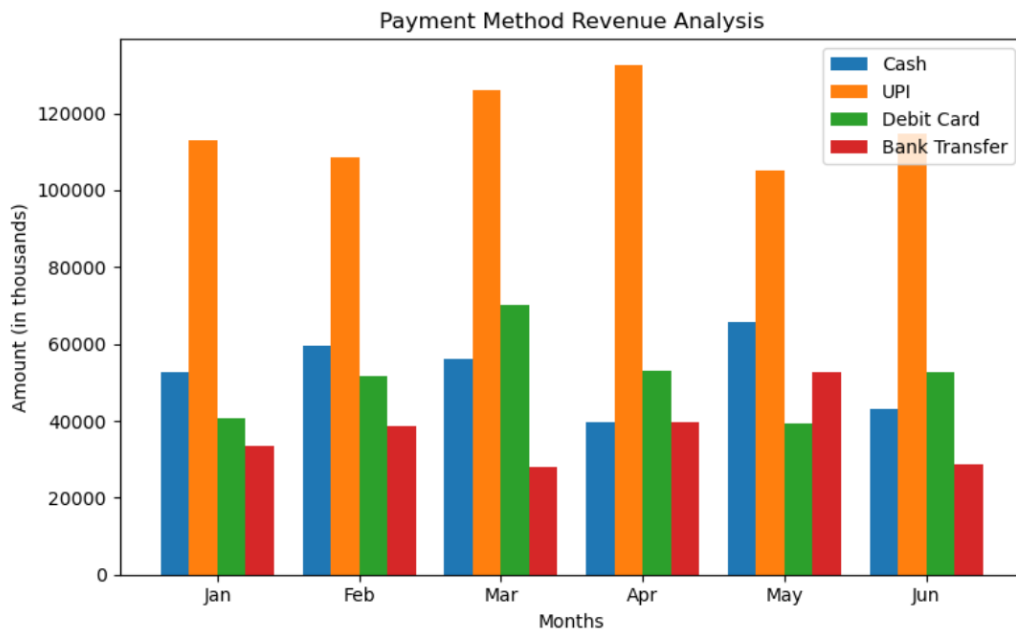
- The above bar graph represents the average leftover quantity of each item over sex months.
- High Leftover Stock: Several items, including Switch Boards, Electric Wires, Pipes, and Voltage Stabilizers, have notably high leftover stock levels (around 20 units). This indicates potential overstocking, tying up capital and storage space.
- Inconsistent Stock Levels: Leftover stock levels vary significantly across different items. This suggests a lack of optimized inventory management, possibly leading to stockouts for some items and excess stock for others.

- Implement advanced inventory forecasting methods that consider historical sales data, seasonal trends, and market demand fluctuations. This proactive approach helps in aligning stock levels with anticipated demand.
- Develop targeted promotional campaigns to clear excess stock. Consider offering discounts, bundling promotions, or exclusive deals on items with higher left-over quantities. Promotions can incentivize customers to purchase and reduce excess inventory.
- Demand Forecasting and Planning: Analyse historical sales data, market trends, and seasonality to forecast demand more accurately. This will help in ordering appropriate quantities and avoid overstocking.
- Periodically conduct clearance sales to quickly sell off items with high left-over quantities. Communicate these sales effectively to customers through various channels to create a sense of urgency.



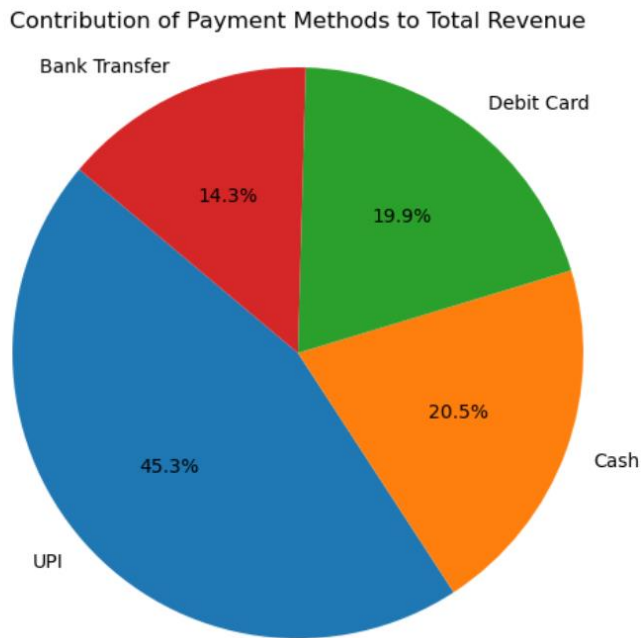
- The total sum of leftover stocks across all six months is 1770.
- January stands out as the month with the highest leftover stock, contributing 355 units to the total.
- months with consistently higher leftover stocks, such as January, which may indicate overstocking.
- Owner should Implement a more proactive approach to inventory management, adjusting stock levels based on historical sales data and demand patterns. Consider adopting just-in-time inventory practices to minimize excess stocks.

- Shop keeper should tailor inventory planning to seasonal demand fluctuations. Plan promotions or discounts for seasonal items in advance to prevent excess stock at the end of the season.
- Shop keeper should Implement dynamic pricing strategies to adjust prices based on demand and inventory levels. Automated pricing tools can help optimize prices in real-time, encouraging sales and reducing left-over stocks.
- Shop keeper should Create bundle offers that combine slow-moving items with popular ones. This strategy not only clears excess stock but also promotes the sale of other items, potentially increasing overall revenue



- UPI (Unified Payments Interface) consistently contributes a substantial portion of total revenue each month.
- Revenue from bank transfers shows significant variability, indicating potential issues with transaction reliability, customer trust, or operational efficiency.
- Fluctuations in revenue from cash and debit card transactions suggest varying costs related to cash management and transaction processing fees.
- While UPI shows consistent usage, there may be challenges in encouraging broader adoption of digital payment methods among customers accustomed to cash transactions.
- Owner should collaborate with banking partners or payment processors to enhance transaction processing reliability and speed. Implement rigorous security measures to build customer trust in bank transfers.
- He should promote digital payment methods like UPI through incentives and convenience. This reduces costs associated with cash handling and debit card processing fees.

- He should educate customers about the benefits of digital payments and provide incentives such as discounts or loyalty rewards for using UPI or other digital wallets.



- UPI is the most common payment method, contributing 43.3% to total revenue.
- Customers prefer UPI for its convenience, speed, and security features, leading to its significant share in total revenue.
- Despite the rise of digital payments, cash remains a prominent payment method, indicating customer preference or possibly operational factors like customer demographics or local market conditions.
- There is limited adoption of card payments, potentially due to transaction fees, security concerns, or customer preference for other methods.
- Owner should offer discounts, cashback, or loyalty rewards for customers using UPI as most people are preferring it.
- He should partner with banking partners to improve transaction speed, reliability, and customer experience.
- He should consider introducing and promoting additional digital wallets alongside UPI to cater to diverse customer preferences.

Interpretation of Results and Recommendation

Recommendation - 1: Enhancing UPI Adoption and Customer Education.

Recognizing the significance of both traditional and online payment methods in the electrical retail sector, there is a strategic opportunity to encourage a higher adoption of digital payment methods, particularly among customers who are accustomed to traditional modes. To achieve this, focus on engaging with customers who prefer traditional payment methods, offering guidance and support throughout the transition.

Given that a substantial portion of transactions in the electrical shop might still be conducted through traditional methods, it is important to initiate targeted efforts to Recommendations -2: Enhancing Product Performance and Profitability.

to Recommendations -2: Enhancing Product Performance and Profitability.

Based on the analysis of high-performing and low-performing goods, the store can consider implementing strategic pricing adjustments. For high-performing items, a slight increase in pricing might be feasible, given their popularity and demand. On the other hand, for low-performing items, create special promotions or bundle deals that include high-performing items. This approach can encourage customers to purchase these items along with more popular products and thereby increase in sales and profitability. Introducing special loyalty programs for those customers who prefer to buy all their monthly needs at once.

Recommendations -3: Inventory Management and Stock Rotation.

To improve customer satisfaction and streamline inventory management in the electrical shop, it is advised to conduct regular assessments, implement strategic stock rotation for slow-moving electrical items, and promptly address any issues in the storage facilities, especially those affecting product quality. Maintain optimal stock levels for popular electrical products while efficiently managing inventory for less-demanded categories to prevent overstock situations. Transparently communicate efforts to customers, offering special deals for items at risk of becoming obsolete,

and consistently evaluate and adjust inventory strategies for a proactive and customer-focused approach.

Recommendations-4: Expand Product Variety

Recommendation: Diversify electrical product offerings by introducing innovative items such as energy-efficient gadgets and smart home solutions. Explore additional accessories like cable organizers or extension cords based on customer preferences. Stay attentive to market demands and regularly assess the performance of new items to meet evolving customer expectations.

Recommendations-5: Prepaid Home Delivery Program

Acknowledging customer preferences for convenient services, consider implementing a Prepaid Home Delivery Program for electrical products. Engage with customers to understand their daily needs, including essentials like wiring, bulbs, and switches, and offer scheduled morning deliveries. This proactive approach not only enhances customer satisfaction but also fosters business loyalty. Introducing a prepaid program can contribute to sustained revenue, increased customer retention, and a strengthened position in the electrical retail sector.

Recommendation -6: Miscellaneous

Positive Customer Interaction:

Emphasize a positive and friendly approach in customer interactions to enhance overall shopping experiences. A welcoming atmosphere contributes to customer satisfaction and loyalty in the electrical shop.

Flexible Operating Hours: Consider adjusting lunch breaks at different timings to extend store hours during the afternoon. This flexibility accommodates more customers, potentially increasing revenue by capturing additional footfall during peak hours.

Credit Facility with Predefined Limit: To address past concerns related to offering credit, consider implementing a credit facility with a predefined limit for customers. This approach encourages customer visits while mitigating potential losses associated with past credit-related challenges. Clear terms and limits can help manage risks effectively.

Annexure

Link of the sales data and other proofs [BDM data.xlsx](#)

[https://drive.google.com/drive/folders/1YWsskVctJP1neAmBuwhFu2g6akwfuQT?usp=drive link](https://drive.google.com/drive/folders/1YWsskVctJP1neAmBuwhFu2g6akwfuQT?usp=drive_link)

Declaration statement [https://drive.google.com/file/d/15QrmVnuhr-1fVVVfXXOQM1plhdXFbd2S/view?usp=drive link](https://drive.google.com/file/d/15QrmVnuhr-1fVVVfXXOQM1plhdXFbd2S/view?usp=drive_link)