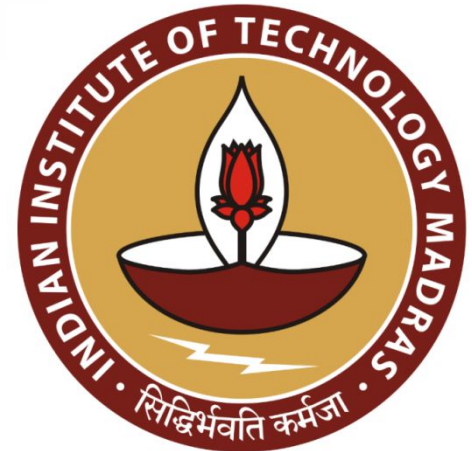


# **Profit Optimization through Data-Driven Analysis for Business Development and Understand Cycle shop trend Shop : Usman Cycle Works**

BDM CAPSTONE PROJECT

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# ORGANIZATION BACKGROUND

- Usman Cycle Works is a cycle shop located at Gandhi chowk, rani satti road, Jhunjhunu, Rajasthan.
- The business is B2C(directly sell product to customer) and deals in the segment of bicycles(adult and child both cycles), tubes, tyers. The shop include variety of cycle brands like Avon, Hero, Aqua, Holland, and Honda.
- Founded by Mr. Usman, Now his son Mr. Mehboob Ali administrating the business.
- Business hours start at 8 a.m. and end at 8 p.m.
- 2 employees work on a regular basis



Picture 1,2 : Outside view of the shop



Picture-2 inside view of shop

# Business Challenges



Business expenses are considerable with minor variation but the profit is failing to meet the expectations. This, In turn affects the fund that can be allocated for for the business growth.



The business Struggles to monitor inventory resulting in either overstocking or understocking. Over stocking negatively affects the net profit and change in trends makes the dresses outdated

# DETAILS ABOUT DATA

- Collected data about sales and purchase for April'24, May'24, June'24, July'24.

## Sales and purchase data details:-

- Date
- Vch/Bill No.
- Particulars for sales/purchase: Name of the buyer for sales and for purchases, name of the supplier/vendor.
- Item Details: the item type (e.g., Cycle, Accessories, Tube, Bell, Lock, etc.).
- Qty
- Price (Per-unit price)
- Amount (calculated as  $\text{Qty} \times \text{Price}$ )

- Vendors/Companies Mentioned:- Hindustan Tyre Co., GURU RAM DASS CYCLE STORE, Hero Cycle L.M.T, Jaipur Cycle, Ridhi Shidhi Enterprises, M.K Cycle Industries, Avon Cycle L.M.T, Single Traders.
- Item Categories:- Includes a variety of bicycle-related products such as Cycle, Accessories, Tube, Bicycle Horn, Kid Toy Motorcycle, Bell, Lock, Pump, Tyre.



The shop mainly sells Cycles, Accessories (5% , 12% and 18% GST), Tubes, Bicycle Tube Repair Solution, Bicycle Horn, Pump, Lock, Belt, and Tyre.

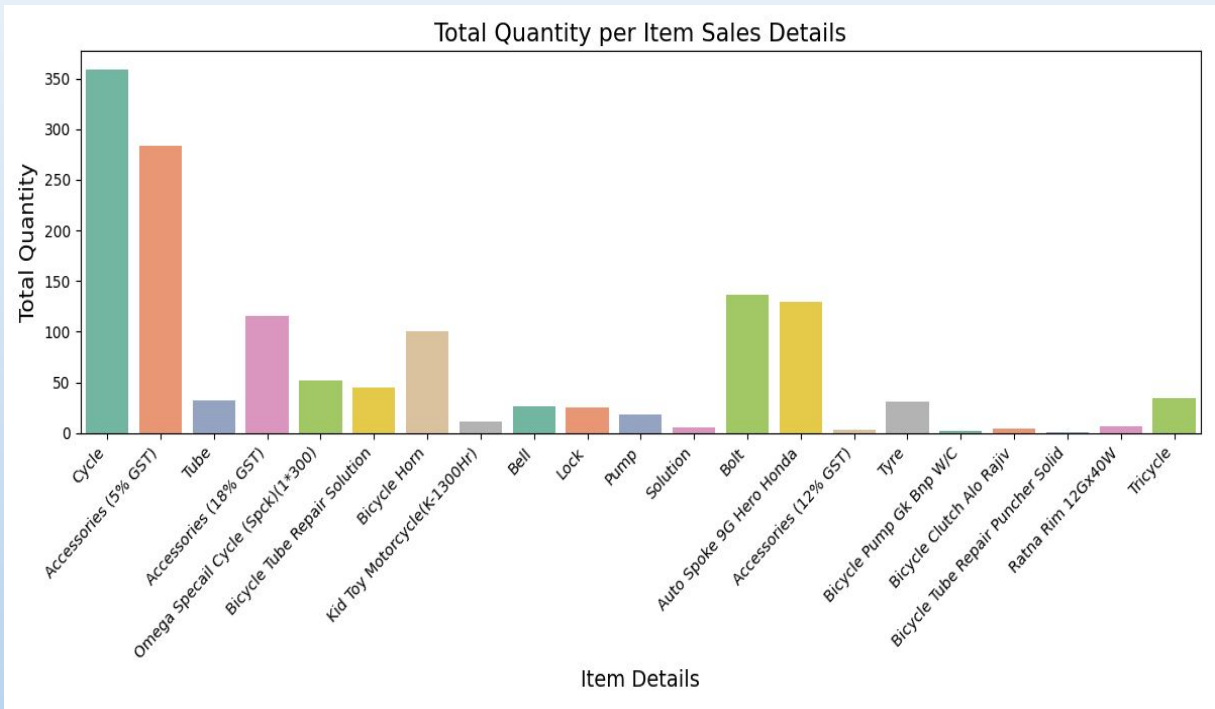


Chart 1 Sales quantity per Item



Chart 2 Purchase quantity per Item

Sales and purchase trends reveal the need for optimized inventory management, ensuring availability of high demand items like Cycles and Tubes while addressing overstocking of slow-moving products through targeted promotions and strategic forecasting.

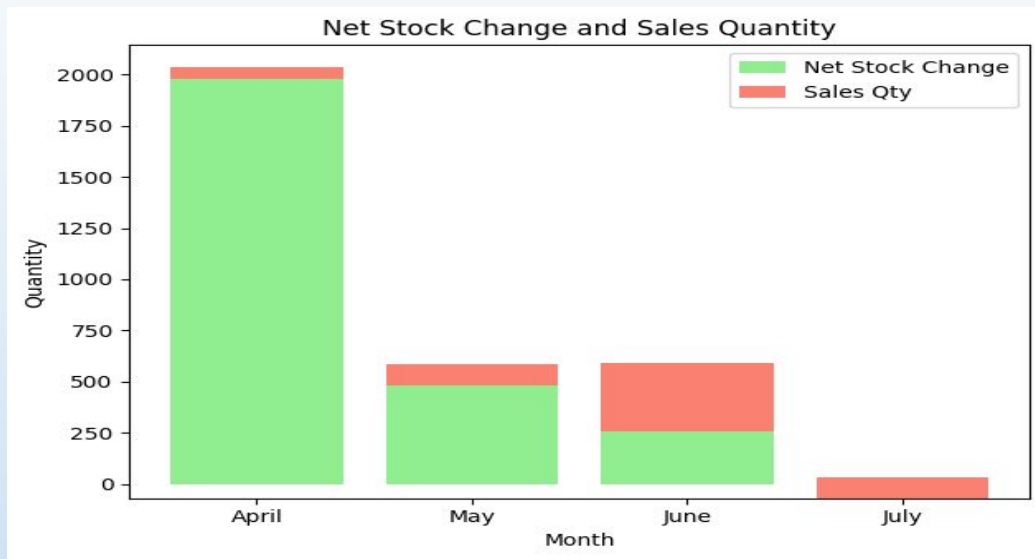


Chart 3 shows Net Stock change and sales quantity

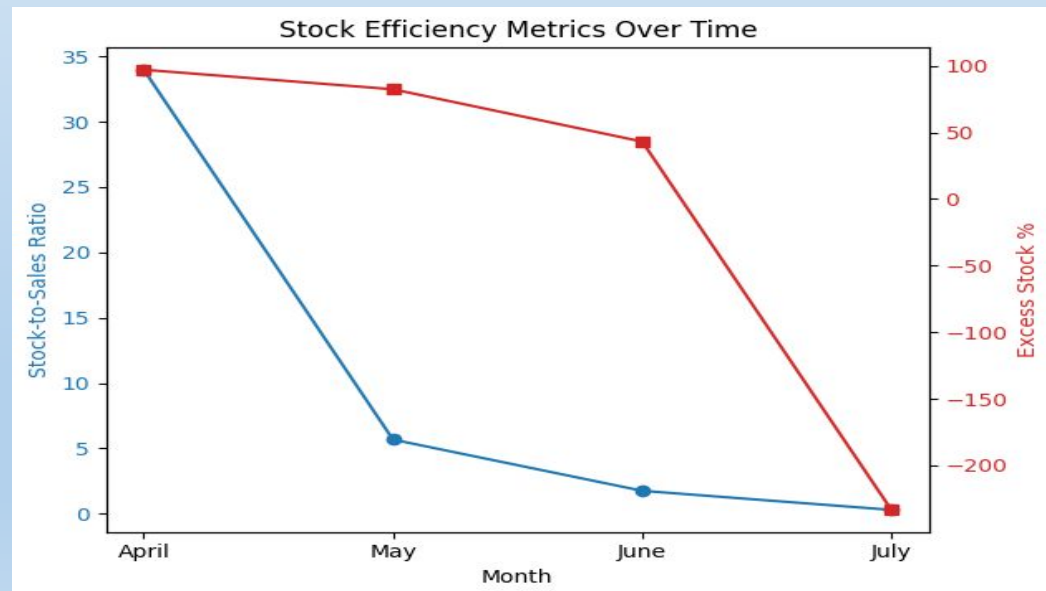


Chart 4 shows the Stock Efficiency Metrics Over Time

- April shows a large stock inflow (~2000 units) with minimal sales, indicating stock buildup.
- May and June show more balanced patterns, but stock additions continue despite rising sales.
- July has no stock addition, only sales, indicating stock depletion or clearance.
- Stock-to-Sales Ratio drops sharply from 34 in April to below 1 by July, signaling improved stock usage.
- Excess Stock % declines steadily and turns negative in July, suggesting stock levels were too low to meet demand or zero inventory.
- Highlights a transition from overstocking (April) to efficient stock turnover or under stocking (July).

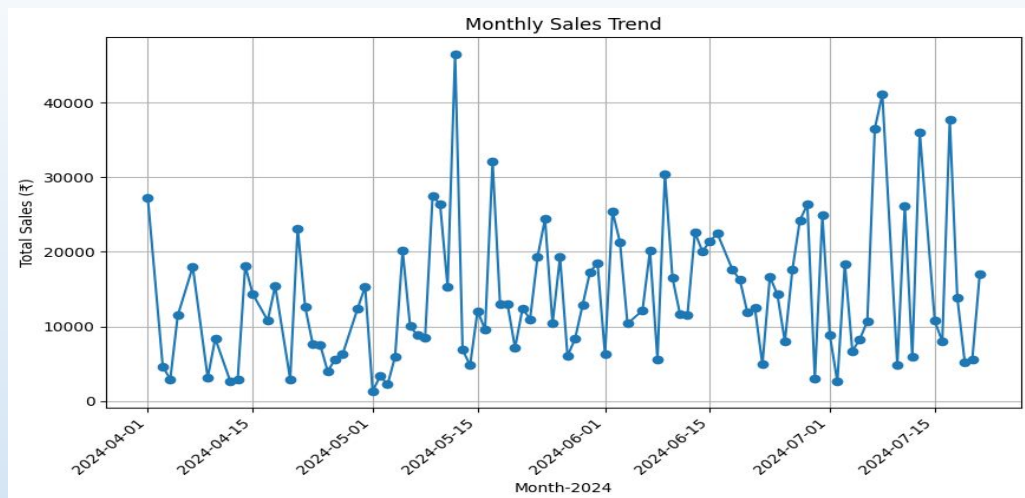


Chart 5 – Monthly Sales Trend

### April:

- Moderate sales (₹5K–₹25K)
- Heavy overstocking with low sales → inventory inefficiency

### May:

- Sharp mid-month spike (~₹45K)
- Slightly improved performance, but modest overall volume

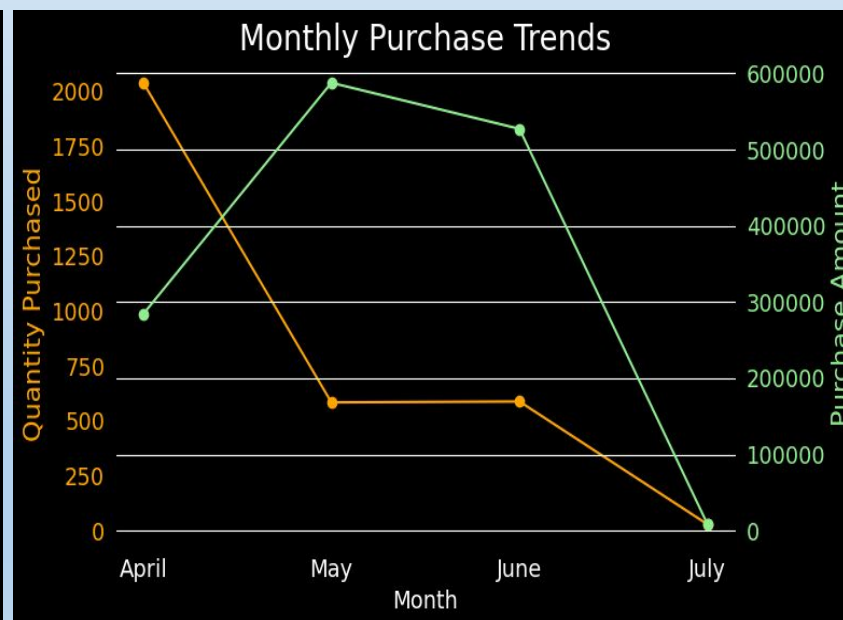
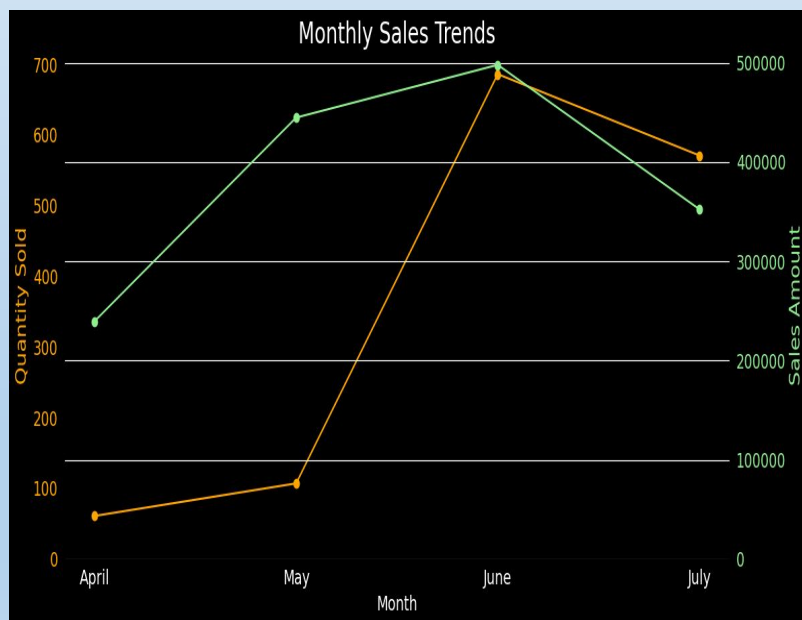


Chart 6 and 7– shows monthly sales and purchase Trends

### June:

- Stable sales range (₹10K–₹20K) → consistent demand
- Achieved without new stock → efficient inventory use

### July:

- Return of high volatility — some days crossing ₹30K
- Strong sales without restocking → continued efficiency

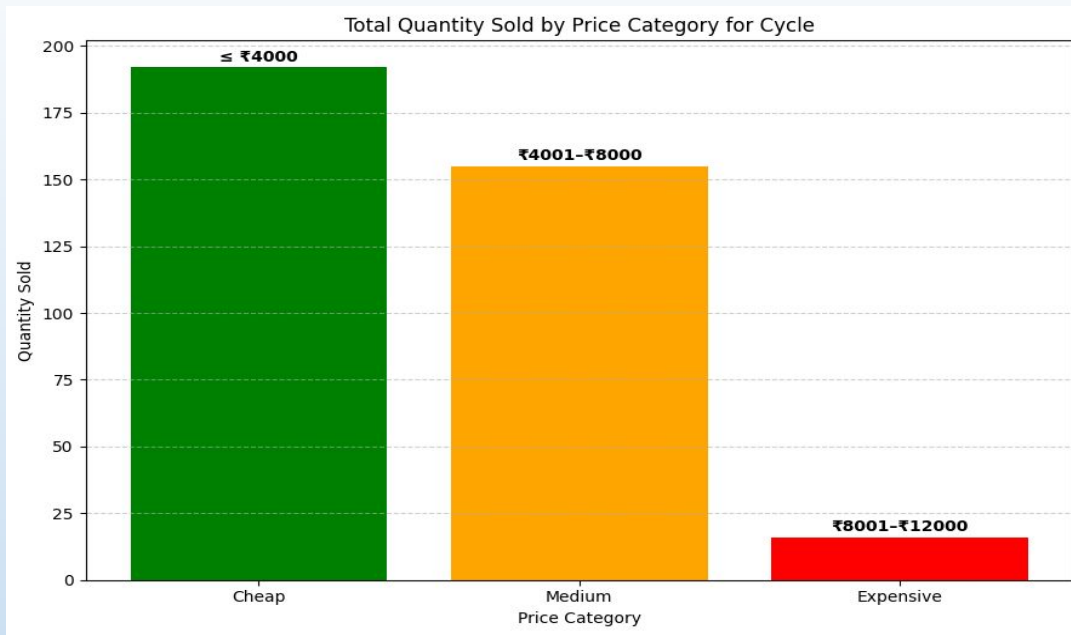


Chart 8 shows the total sold by price category for cycle

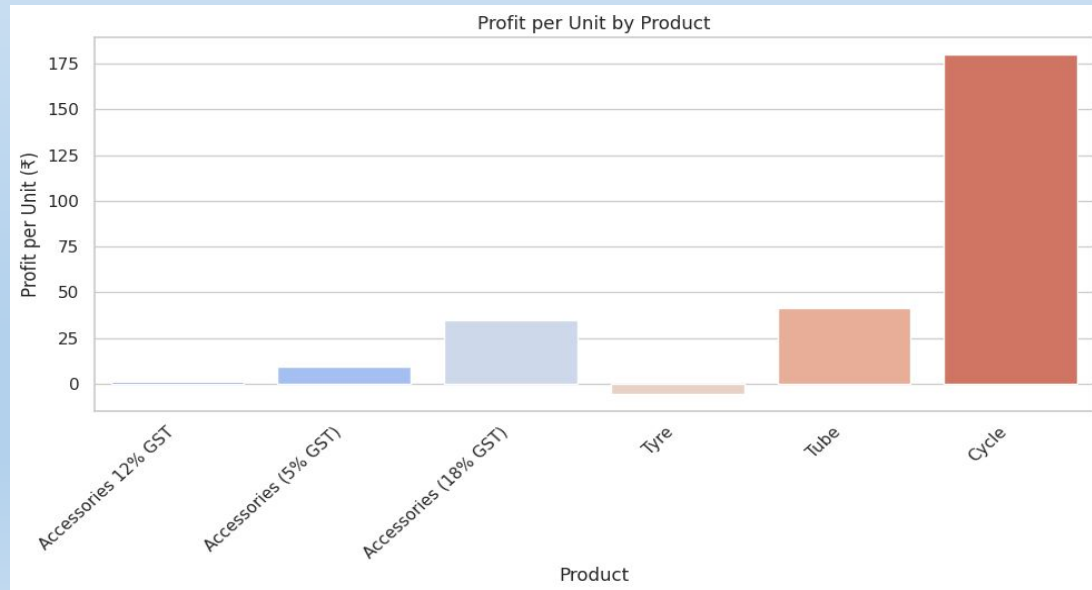


Chart- 9 shows profit per unit by product

- Cheap cycles ( $\leq ₹4000$ ) sold the most – about 190 units.
  - Medium cycles (₹4001–₹8000) also sold well – around 155 units.
  - Expensive cycles (₹8001–₹12000) sold very little – less than 20 units.
- Focus on low to mid-range cycles to boost sales volume.  
Offer a few premium models for higher profit margins.

- Cycle yields the highest profit per unit (₹180+), making it the most profitable product.
- Tube and Accessories (18% GST) follow, with profits around ₹40 and ₹33 respectively.
- Accessories (5% GST) offer lower profit (~₹10).
- Tyre shows a negative profit – selling at a loss.
- Accessories (12% GST) provide almost no profit.



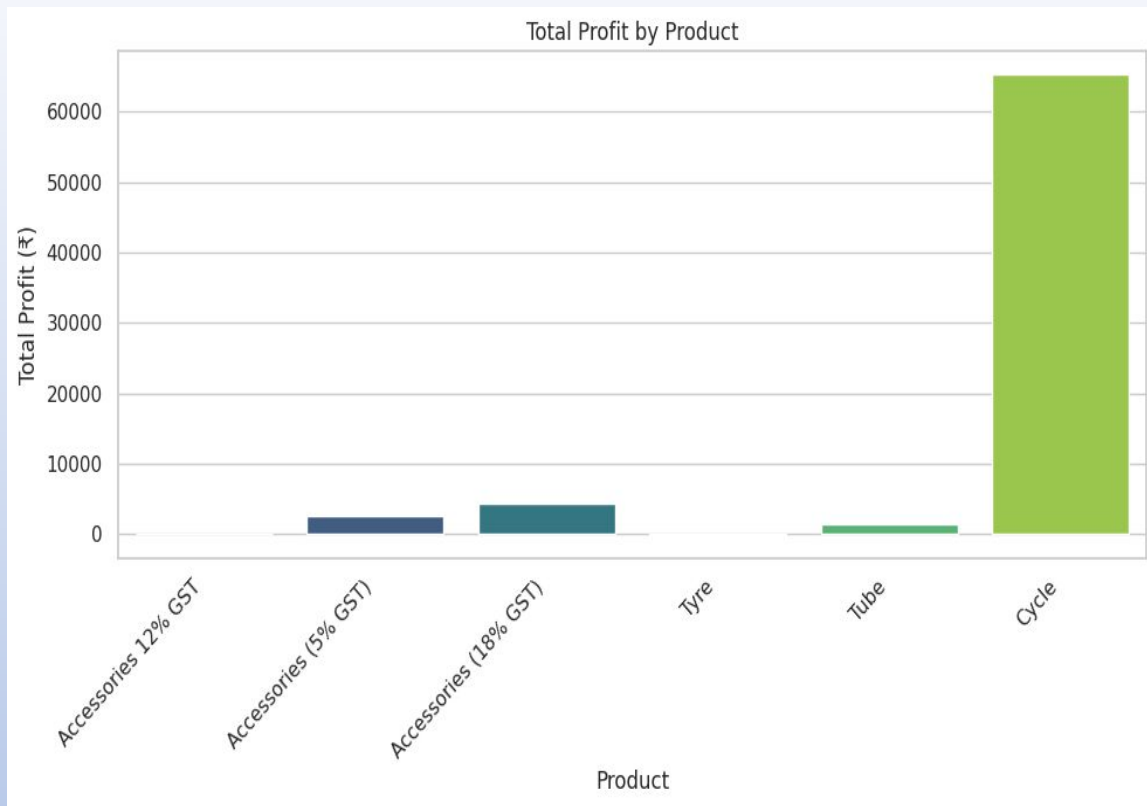


Chart-10 Shows Total profit by product

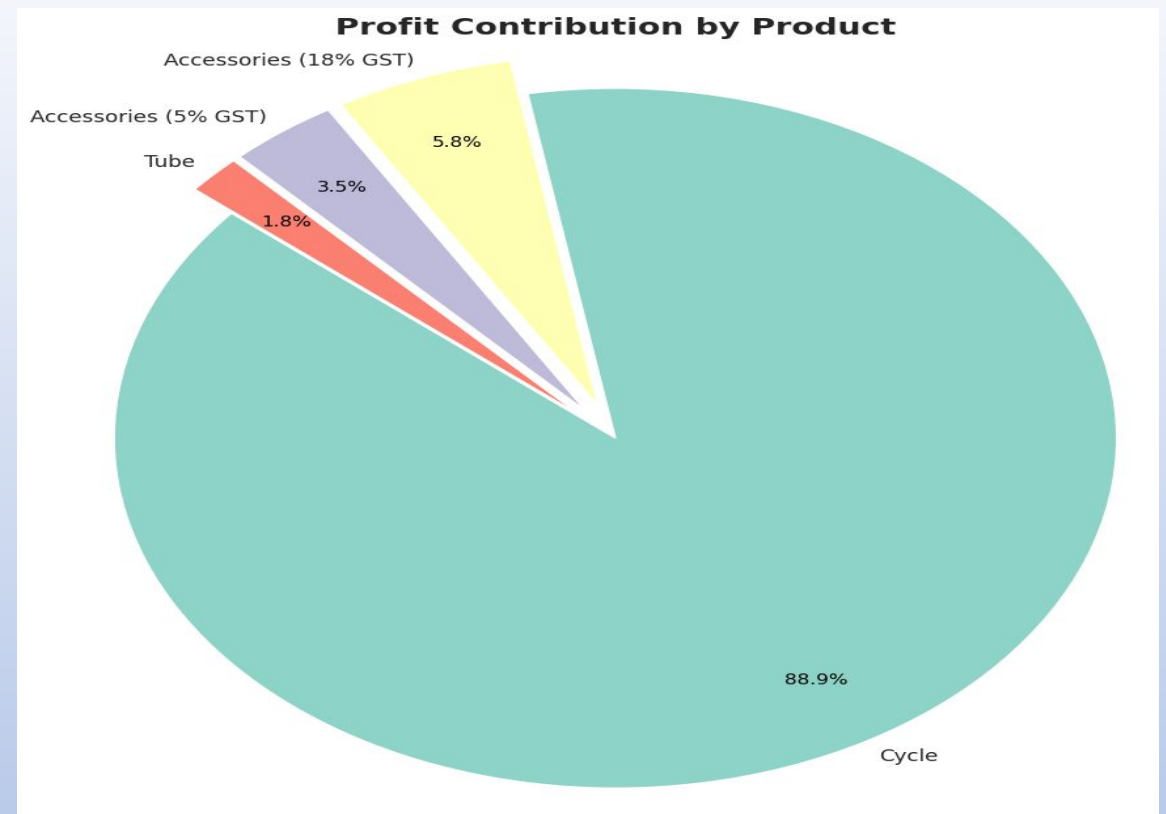


Chart-11 Profit contribution by product

- Cycle dominates the profit distribution with 88.9% share, contributing over ₹64,000 in total profit.
- Accessories (18% GST) and Accessories (5% GST) offer moderate returns, with profits of approximately ₹4,000 and ₹2,000 respectively.
- Tube shows a minor contribution, with profit ranging between ₹1,000–₹1,500.
- Tyre and Accessories (12% GST) generate negligible or no profit.

## Interpretations of Results

- Stock Management:** Overstock early in year; shortages by June. Seasonal demand shifts not well managed. Inventory errors detected.
- Customer Insights:** Heavy reliance on one-time buyers; risk if footfall drops. Peak sales in May-June; July sales fell. Need for better customer retention.
- Profit:** Cycles most profitable; tyres cause losses. Low-margin products tie up capital. Over-reliance on cycles is risky.

## Recommendations

- Stock Management:** Use demand-driven inventory & forecasting. Set reorder points, clear slow items with promos. Fix stock errors with audits.
- Customer Engagement:** Start loyalty programs, register customers, offer personalized promos. Explore bulk sales & add services (repairs).
- Profit:** Focus on cycles & high-margin accessories. Review tyre pricing or discontinue if needed. Use bundling for low-margin products.

## Product-wise Recommendations

- Cycles:** Focus on cheap & medium price ranges. Promote expensive models. Keep cycles as main revenue driver.
- Accessories (12% GST):** Overstocked, low profit. Clear stock with discounts or bundles. Reduce future purchases.
- Accessories (5% & 18% GST):** Moderate profit. Continue stocking 18% GST; manage 5% GST based on demand.
- Tyres:** Loss-making. Investigate costs/pricing. Avoid bulk buying.
- Tubes:** Positive profit. Manage stock carefully. Use promotions to boost sales.