

## Team Pune

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## Sales and Profitability Analysis

### Objective:

To Improve profitability and identify key factors influencing sales performance.

### Business Goals:

1. Increase Profitability by reducing loss making products or regions.
2. Support Regional Strategy by advising regional managers on where to focus sales.
3. Grow Revenue by identifying high and low performing regions and categories.

### Stakeholders:

Role	What they care about
Regional Managers	Hitting revenue & profit targets, product performance in their region
CEO/COO	Revenue growth, market expansion, profitability

### Business Questions:

1. Which regions are contributing the most and least to sales and profit?
2. Which categories are high in sales but low in profit?
3. Are high discount rates affecting profitability in some areas?

## KPIs & Metrics Table

Business Question	KPI	Supporting Metrics
Which regions drive the most revenue?	Total Sales (₹)	Sales by Region, Average Sales per Order
Which areas are most/least profitable?	Total Profit (₹)	Profit Margin % by Region
Are discounts affecting profitability?	Avg. Discount	Avg. Discount % per region, Correlation between Discount and Sales Lift

## Key Metric

Metric	Formula
Total Sales	Sum of Sales
Total Profit	Sum of Profit
Profit Margin %	$(\text{Profit} / \text{Sales}) * 100$
Avg. Discount %	Average of Discount
Loss Count	Count of rows where Profit < 0
Sales per Order	Sales grouped by Order ID

## Data Quality Checklist

Check	Description
Column Types	Clear
Null values found	None
Duplicates	Duplicate Order ID + Product Name exist
Negative Profit Check	True
High Discounts	Discount > 0.5 found
Outliers	None

## Data Fields

Column	Description
Order Date	When the order was placed
Region	Central, East, South, West
Category	Furniture, Office Supplies, Tech
Sales	Amount of product sold
Profit	Profit for the product
Discount	Discount applied (0 to 1 scale)
Sub-Category	Specific product type (e.g., Chairs, Phones)
State	U.S. state of the customer

## Visualization

### 1. Sales and Profit by Region - Clustered Bar Chart

Identify where revenue is high and where profit is low.

### 2. Profit Margin % by Region - Lollipop Chart

Shows which regions are efficient vs over discounted.

### 3. Average Discount by Region – Heat Map

Identify discounting trends that impact profit margins.

### 4. Top Loss-Making Products- Table

Identify top loss making products respective to its region.

## Insights

### 1. Sales and Profit by Region

- **What is happening:**  
West leads in sales and profit; Central has low profit despite moderate sales.
- **Why it is happening:**  
High discounting and possible inefficiencies in Central.
- **What to do about it:**  
Review discounting strategy and choose better-selling products in Central.

### 2. Profit Margin % by Region

- **What is happening:**  
South has the highest profit margin; Central the lowest.
- **Why it is happening:**  
South uses fewer discounts and controls costs better.
- **What to do about it:**  
Use South as a model; train Central on margin-focused strategies.

### 3. Average Discount by Region

- **What is happening:**  
Central has the highest average discount.
- **Why it is happening:**  
Discounts are being overused to drive sales.
- **What to do about it:**  
Set discount limits and focus on value-based selling.

## Recommendations

- Central region needs better pricing and product focus.
- Train on South region's strategy to improve margins.
- Track KPIs monthly and limit discounting >25%.

## Wire Frame

