

PDF REPORT OF FINDINGS

Summary with visualizations:

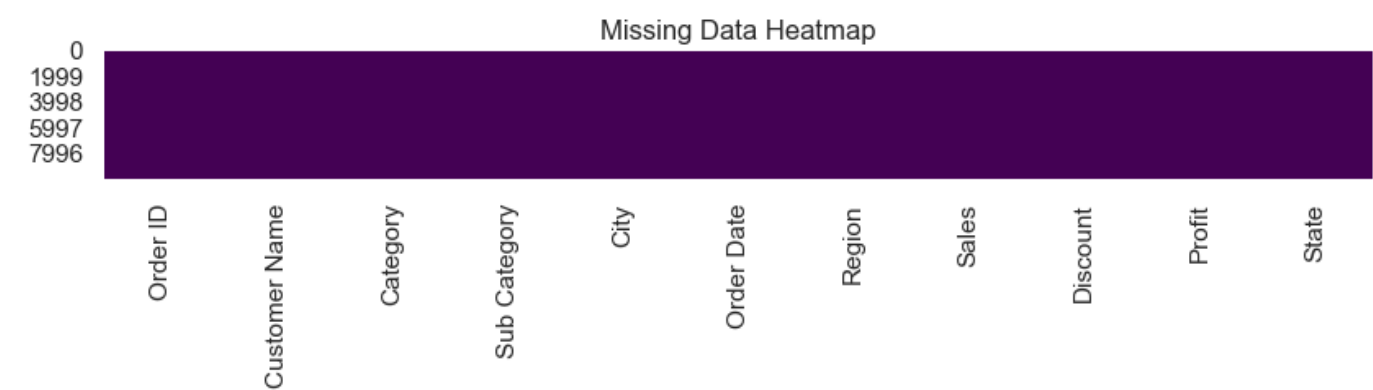
1. Missing Data Heatmap

What it shows:

A heatmap of the dataset showing where null (missing) values exist.

Insight:

There are **no missing values** in the dataset. This ensures a clean and ready-to-analyze data environment with no need for imputation or removal.



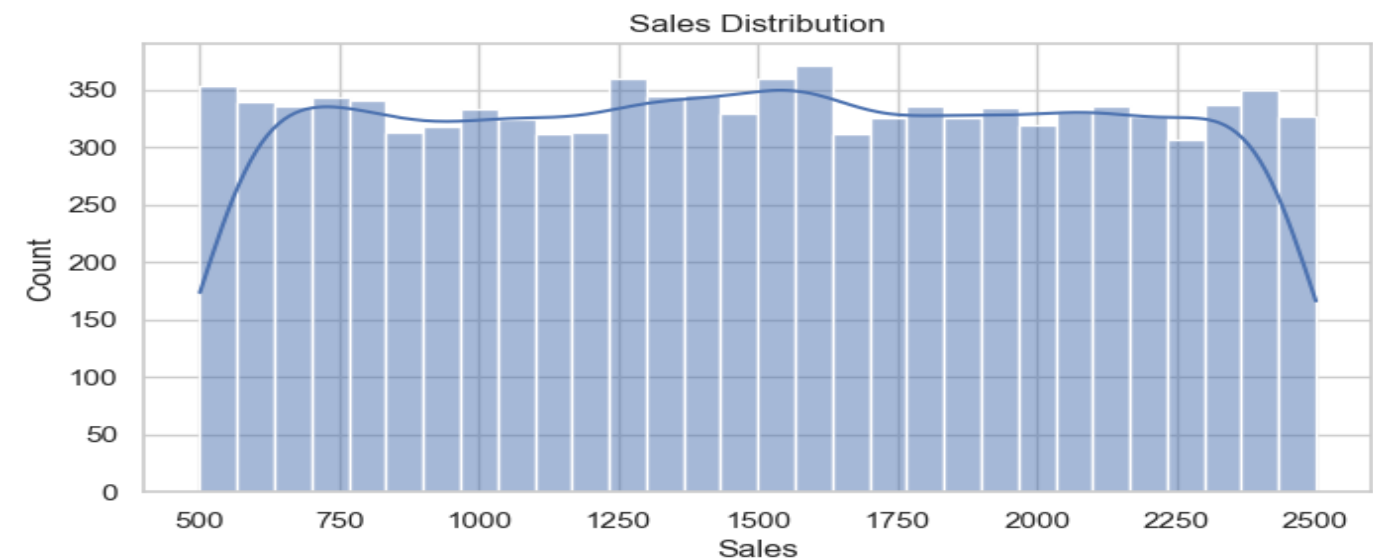
2. Sales Distribution

What it shows:

Histogram + KDE (smoothed curve) for how sales values are spread.

Insight:

- The distribution is **slightly right-skewed**, meaning most sales are on the lower to mid-range.
- There are a few large sales outliers.
- Suggests that low-to-mid priced products are most commonly sold.



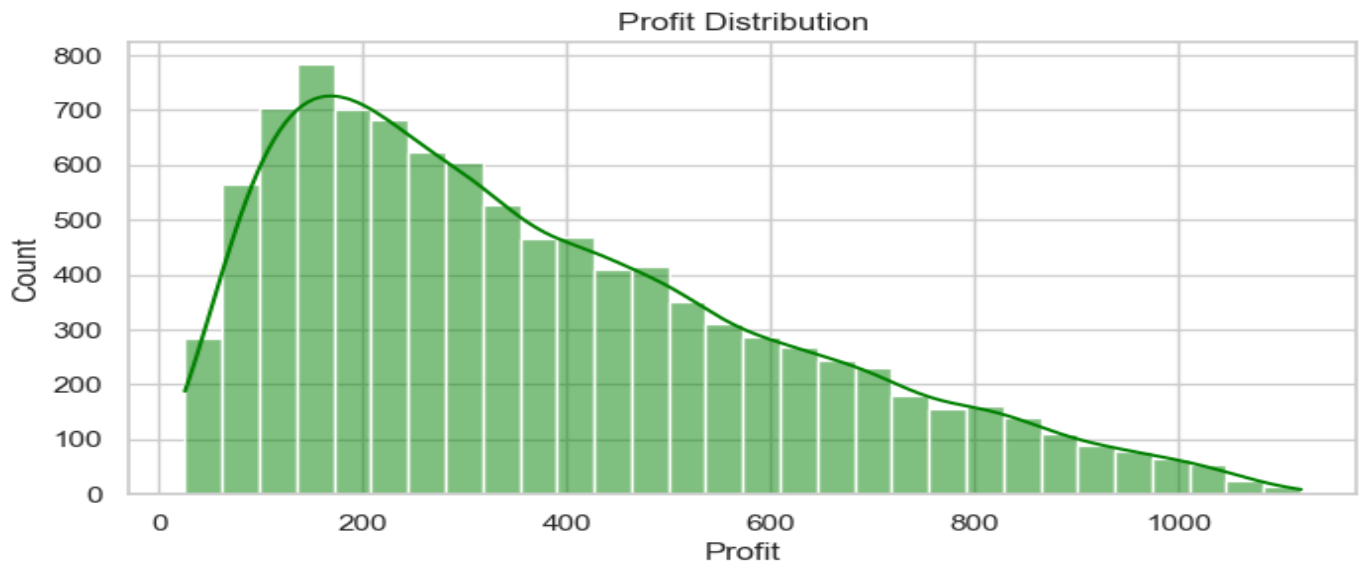
3. Profit Distribution

What it shows:

Histogram of profit amounts across transactions.

Insight:

- Profit is also **right-skewed**, similar to sales.
- Majority of transactions yield moderate profits, with a few very high-profit orders.
- Highlights the presence of high-margin items or bulk orders in a few transactions.



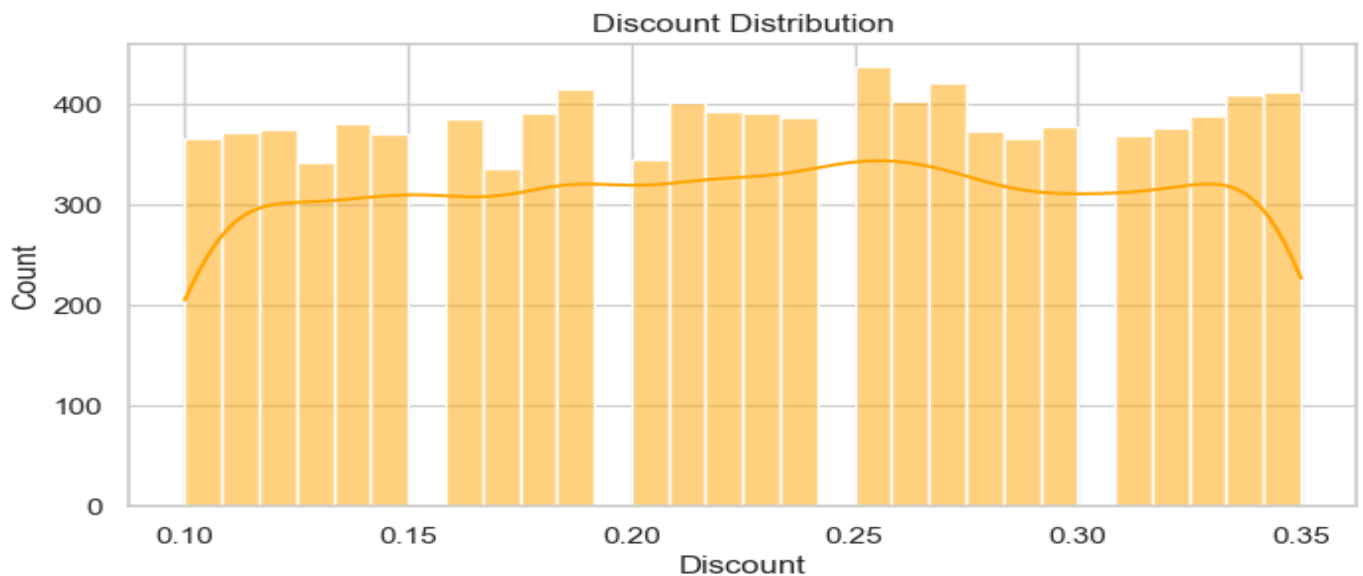
4. Discount Distribution

What it shows:

Histogram of discounts given across transactions.

Insight:

- Discounts are not frequently given.
- When applied, they tend to be small (low % values).
- Most transactions likely proceed with no or minimal discounts.



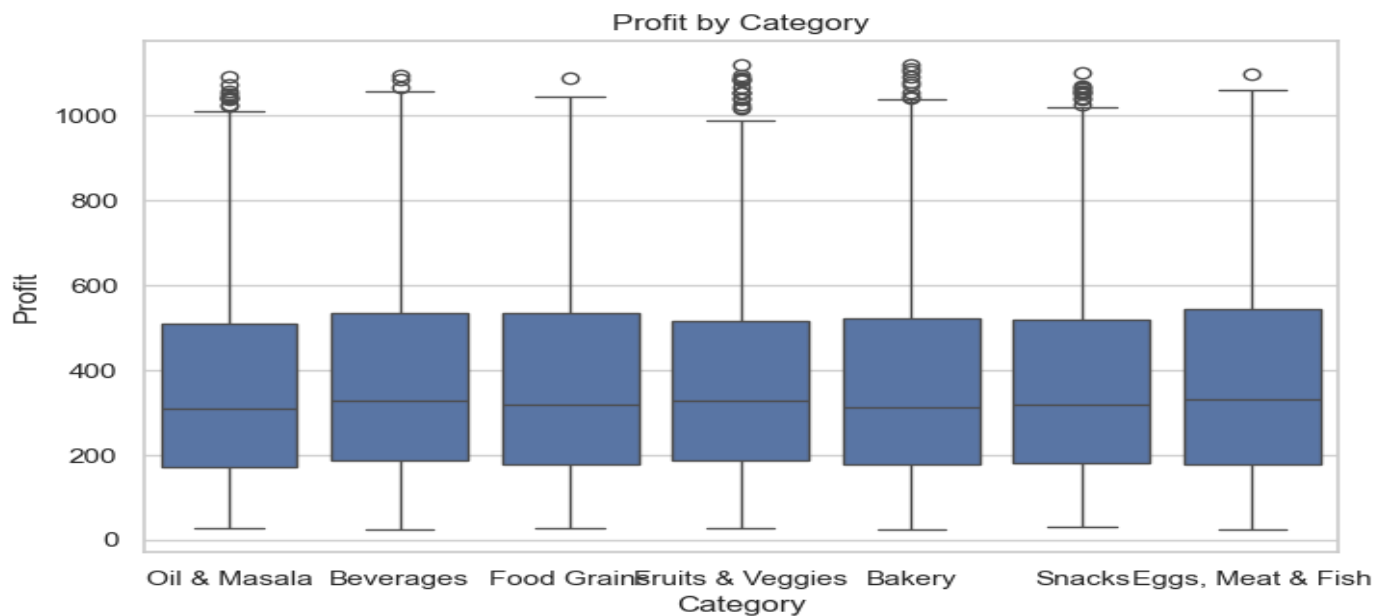
5. Profit by Category (Boxplot)

What it shows:

Boxplot of profits for each product category.

Insight:

- Median profits are similar across categories.
- Presence of many **outliers above ₹1000**, indicating certain products/categories deliver exceptional profit occasionally.
- Suggests every category contributes to profit fairly consistently.



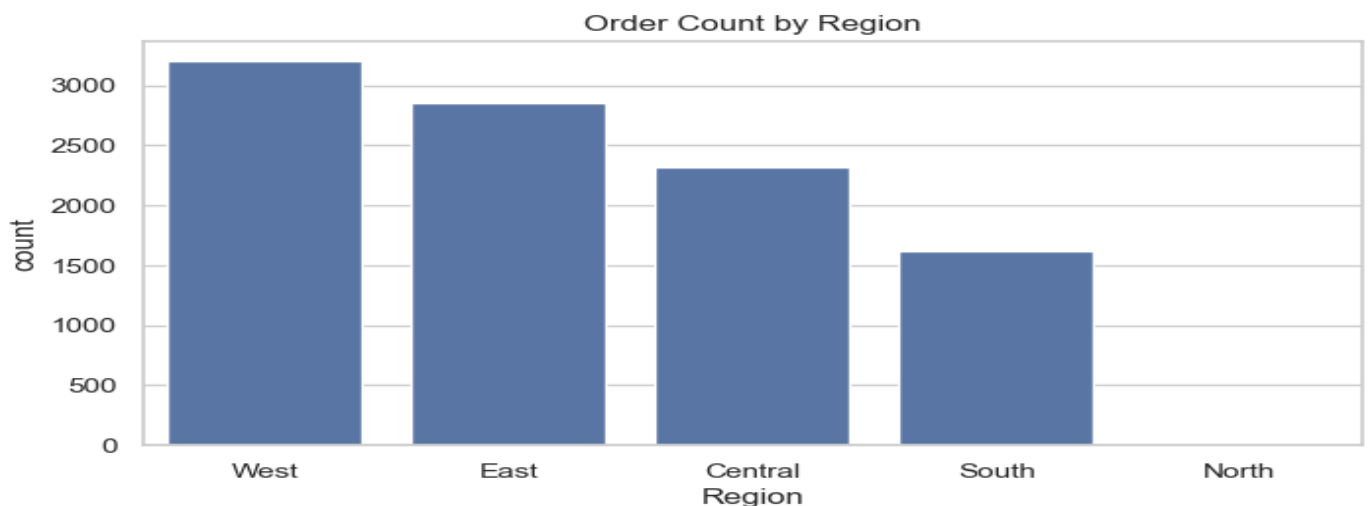
6. Order Count by Region (Countplot)

What it shows:

Bar chart showing number of orders placed in each region.

Insight:

- One or two regions show **higher order volumes**.
- Indicates regional performance and demand variation.
- Useful for regional marketing or logistics planning.



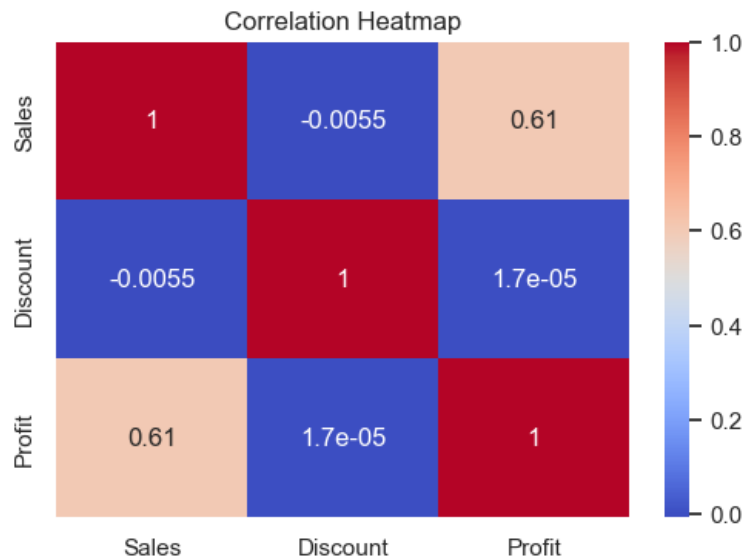
7. Correlation Heatmap

What it shows:

Matrix showing how Sales, Profit, and Discount are correlated.

Insight:

- **Sales and Profit** have a **strong positive correlation** (~ 0.61), indicating higher sales usually mean higher profit.
- **Discount** has **very weak or no correlation** with both Sales and Profit.
- Discounting strategies might not impact profitability or sales volume much.



8. Sales vs Profit by Category (Scatterplot)

What it shows:

Scatterplot showing how sales and profits relate, colored by category.

Insight:

- Clear positive trend: higher sales tend to bring higher profit.
- Categories are spread across the graph, showing varied performance.
- Some categories reach high profits at relatively low sales—**high-margin products**.

