

# Technical Documentation – Sales Performance Dashboard

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Tools Used: Power BI Desktop, DAX, Power Query, Excel

## 1. Data Model

The project uses the Sample Superstore dataset (Excel format).

### Tables:

- Orders
- Returns
- People
- Table1 (parameter table used for toggling between metrics like Sales and Profit)

### Relationships:

- Returns[Order ID] → Orders[Order ID]
- People[Person] → Orders[Person]

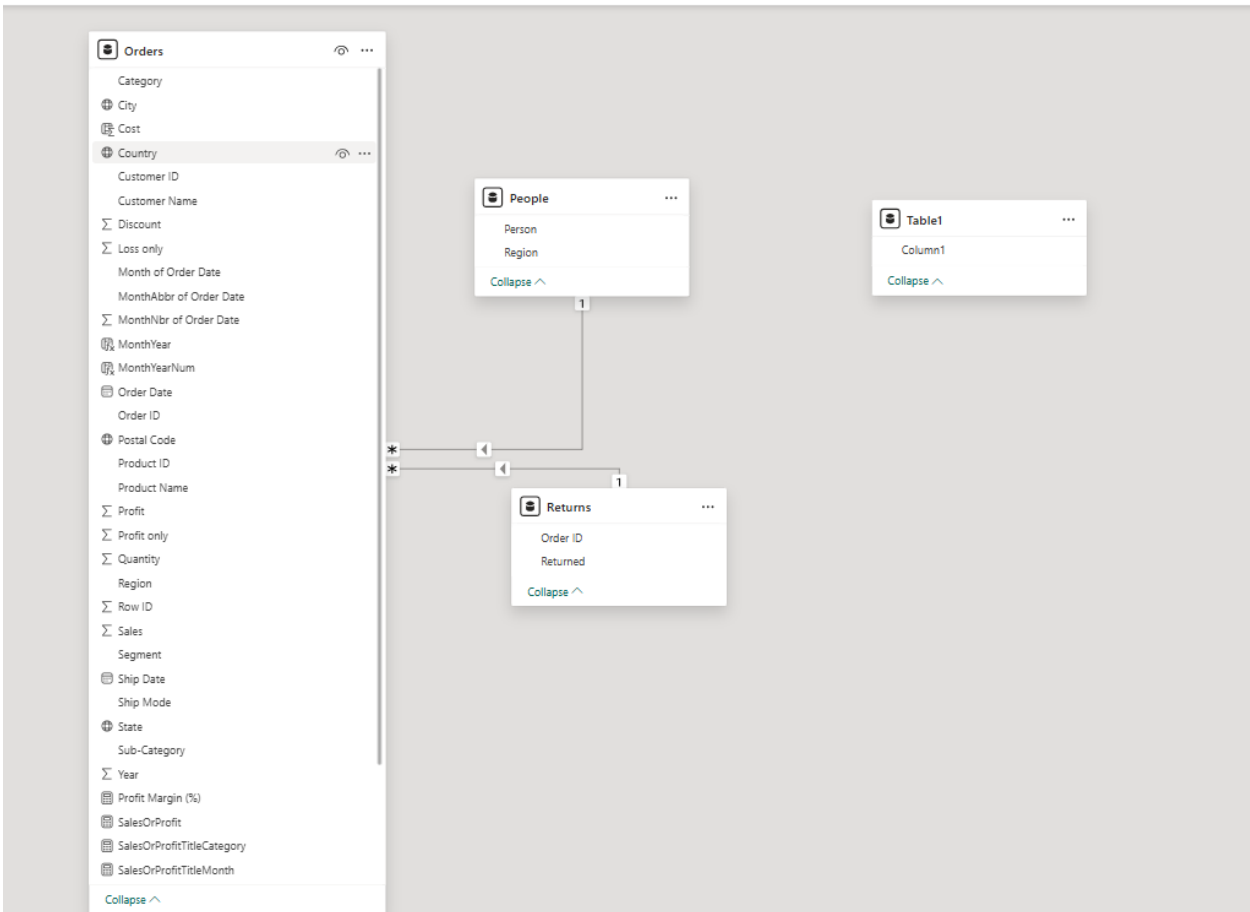


Fig 1. Data model showing relationships between Orders, Returns, People, and parameter table.

## 2. Custom Columns (Power Query Editor)

These fields were created to support visual slicing, chart labelling, and measure calculation:

- Month of Order Date = Date.MonthName([Order Date])
- MonthAbbr of Order Date = Text.Start(Date.MonthName([Order Date]), 3)
- Loss Only = if [Profit] < 0 then [Profit] else 0
- Profit Only = if [Profit] > 0 then [Profit] else 0

## 3. Key DAX Measures (with Use Cases)

- **Profit Margin (%)**

Profit Margin (%) = DIVIDE([Profit], [Sales], 0)

Used in KPI cards to reflect profitability efficiency across selections.

- **Cost**

Cost = [Sales] - [Profit]

Derived cost measure, used to highlight the portion of sales not converted to profit.

- **SalesOrProfit (Toggle Measure)**

```
SalesOrProfit =
IF(
    SELECTEDVALUE(Table1[Column1]) = "Sales",
    SUM(Orders[Sales]),
    SUM(Orders[Profit])
)
```

Central to the toggle functionality throughout the report. Drives visuals based on user-selected metric.

- **YTDSalesOrProfit (Cumulative Trend)**

```
YTDSalesOrProfit =
IF(
    SELECTEDVALUE(Table1[Column1]) = "Sales",
    CALCULATE([SUMSales], DATESYTD(Orders[Order Date])),
    CALCULATE([SUMProfit], DATESYTD(Orders[Order Date]))
)
```

Displayed in a line chart to show year-to-date performance trend.

- **Dynamic Chart Titles (multiple)**

- SalesOrProfitTitleCategory = IF(SELECTEDVALUE(Table1[Column1]) = "Sales", "Sales by Category", "Profit by Category")
- SalesOrProfitTitleState = IF(SELECTEDVALUE(Table1[Column1]) = "Sales", "Top 10 Sales by State", "Top 10 Profit by State")
- SalesOrProfitTitleRegion = IF(SELECTEDVALUE(Table1[Column1]) = "Sales", "Sales by Region", "Profit by Region")
- SalesOrProfitTitleMonth = IF(SELECTEDVALUE(Table1[Column1]) = "Sales", "YTD Sales by Month", "YTD Profit by Month")

These support automatic title switching based on slicer selections and improve clarity for stakeholders.

## 4. Dashboard Pages and Functional Overview

- **Page 1: Sales & Profit Overview**

- KPIs: Sales, Profit, Quantity, Discount, Profit Margin
- Combo chart: Sales and Profit monthly trend
- Bar chart: Sales by Sub-Category
- Slicers: Category, Sub-Category, Region, Segment

- **Page 2: State-Wise Loss Overview**

- Filled Map: Visualising loss concentration by state
- Dumbbell Chart (Nova Silva custom visual): Profit vs Loss by Sub-Category

- KPI cards: Losses, Sales, Orders, Product Count
- Slicer: Category

- **Page 3: Revenue Analysis Dashboard**

- Donut Chart: Category-wise Sales/Profit
- Bar Charts: Top 10 States, Region-level performance
- Line Chart: YTD Sales/Profit
- Matrix: Sales, Profit, Avg. Profit, Customer Count by Category & Sub-Category
- Slicers: Sales/Profit toggle, Month

- **Page 4: Regional & Geographic Analysis**

- Pie Chart: Sales by Region
- Scatter Chart: Profit vs Sales by City
- Filled Map: Sales heatmap by state
- Slicers: Year, Region, Category

## 5. Visual Enhancements

- Conditional formatting in matrix and bar charts
- Custom chart titles using DAX logic
- Dumbbell chart integrated via licensed custom visual
- Slicers and bookmarks enable dynamic view switching
- Grid alignment and white space tuning to support executive readability

## 6. Theme

**Theme applied:** Simply Modern Dark (Metricalist)

**URL:** <https://metricalist.com/powerbi-solutions/simply-modern-dark/>

## 7. Summary

This Power BI dashboard was independently developed to explore sales and profitability dynamics across category, region, and customer granularity. The report leverages advanced DAX, interactive slicers, and custom visuals to support business-facing analysis. It was designed to meet UK-style portfolio standards for roles in data analytics, business intelligence, and entry-level data engineering.

**Target roles:** Data Analyst, Data Engineer, Business Analyst, Power BI Analyst, Graduate Analytics Schemes (UK, 2025 intake)