**Sales Performance Analysis Report (2014–2017)**

*Dataset: SuperStore (Kaggle)*  
*Tool: Microsoft Power BI*

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# 1. Project overview

The goal of this project was to analyze the SuperStore dataset and deliver key insights into:

1. **Sales performance (2014–2017)** by region and product category.
2. **Returned sales** – identifying which states and product categories had the most returns in terms of sales.

A Power BI dashboard was developed to visualize these findings and provide a clear, interactive way to explore sales and return data.

# 2. Data Preparation & Modeling

**2.1 Normalization and Star Schema**

The raw dataset contained an **Orders table** with many descriptive columns repeated across rows (e.g., customer, location, category). To improve performance and enable efficient reporting, I applied **data normalization** and built a **star schema model**, separating data into fact and dimension tables:

* **Fact Table**: Orders (transactions, sales, profit, discount, quantity).
* **Dimension Tables**: Customers, Date, Products, Location, and Returns.

This structure reduced redundancy, improved query speed, and supported the creation of reusable measures.

A screenshot of a computer

AI-generated content may be incorrect.

Figure - initial data modelling structure

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Figure - after data normalization

**2.2 Calculated Measures**

To analyze **returned sales**, I created custom DAX measures, such as:

* **Returned sales rate** – number of returned sales / total sales
* **Returned sales share** – number of returned sales for specific product / total returned sales
* **Total Returned amount** – total returned sales
* **Total Net Sales** – total sales – total returned sales
* **YoY growth** – Year to Year growth of total sales

These measures allowed comparison of sales performance with and without returns across different states, regions, and categories.

# 3. Power BI Dashboard Analysis

For the Power BI dashboard, I built 2 pages of Dashboard. The first page (overview) contains information about the overall sales performance.

Figure 3

A screenshot of a data report

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Charts used for this page.

1. **Card Visuals** – containing Total sales, total profit, and profit margin *(calculated field: profit/sales)*
2. **Combo Chart** – containing Total sales, Total profit in Line visuals, and profit margin in bar visual. In this chart we can see monthly trends over these metrics.
3. **Donut Chart** – containing Total sales by region. Effective way to illustrate share of the total in given column.
4. **Ribbon Chart** – containing Total sales by Category. To illustrate share of the sales within Category.

Other interactive tools for this page.

1. Year slicer filter
2. Action button that navigates to next page when you press it.

Figure 4

A screenshot of a computer

AI-generated content may be incorrect.

Charts used for this page.

1. **Table Visual** – containing Category, Sub-Category, its Total sales, Sales % *(sum(sales)/Grand Total(sales))*, Returned Amount *(sum(sales) if Returned = “Yes”),* Returned % *(sum (Returned Amount)/Grand Total (Returned Amount))*, and Return Rate *(Returned Amount/Sales)*
2. **Combo Chart** – containing Ship mode by Total sales, Total return in Bar visuals, and Return rate in line visual. We can see clearly which ship mode has the highest return rate.
3. **Area Chart** – containing Return rate by Salesperson.
4. **Card Visual** – containing overall Return rate.
5. **Column Chart** – containing Return rate by states.

Other interactive tools for this page.

1. Year slicer filter
2. Action button that navigates to previous page when you press it.

# 4. How BI Tools Help Decision-Makers

I believe that data tells a story—one that is honest, unbiased, and full of insights. However, understanding this story requires the right tools and techniques. This is where Business Intelligence (BI) tools come into play. Tools like Power BI, Tableau, SAP Predictive Analysis, and SAP Lumira serve as powerful bridges between raw data and actionable insights.

Data is often too complex for the human eye to interpret directly. BI tools transform this complexity into clear, interactive visualizations that make understanding data not only easier but also engaging. The ability to interpret data through visual storytelling is like having exceptional public speaking skills in the data industry, it turns raw information into impactful messages that drive decision-making.

Moreover, mastering BI tools empowers professionals to uncover hidden patterns, predict trends, and make data-driven recommendations. This capability is crucial for decision-makers who want to act confidently in a competitive business environment. By effectively communicating insights, BI tools enable organizations to seize opportunities, mitigate risks, and achieve strategic goals.