Multi-Dashboard Sales & Profitability Analysis (2014–2017)

Tool Used: Power BI
Role: Data Analyst / BI Developer
Scope: Sales, Discounts, Profit Margins, and Trend Analysis
Data Period: 2014 – 2017

Project Overview.

This multi-dashboard project was designed to provide a holistic view of a company's sales performance across customer segments, sub-categories, and geographic regions, as well as to uncover the impact of discounting on profit margins. It also explores trends over time, offering actionable insights for business growth and efficiency improvements.

Dataset Source: Superstore Dataset (Sample business dataset commonly used in data visualization tools like Power BI and Tableau)
Dataset Type: Transactional Sales Data | 2014–2017 | Includes fields such as Order Date, Segment, Category, Sub-Category, City, Sales, Profit, and Discount.

Data Wrangling & Preparation.

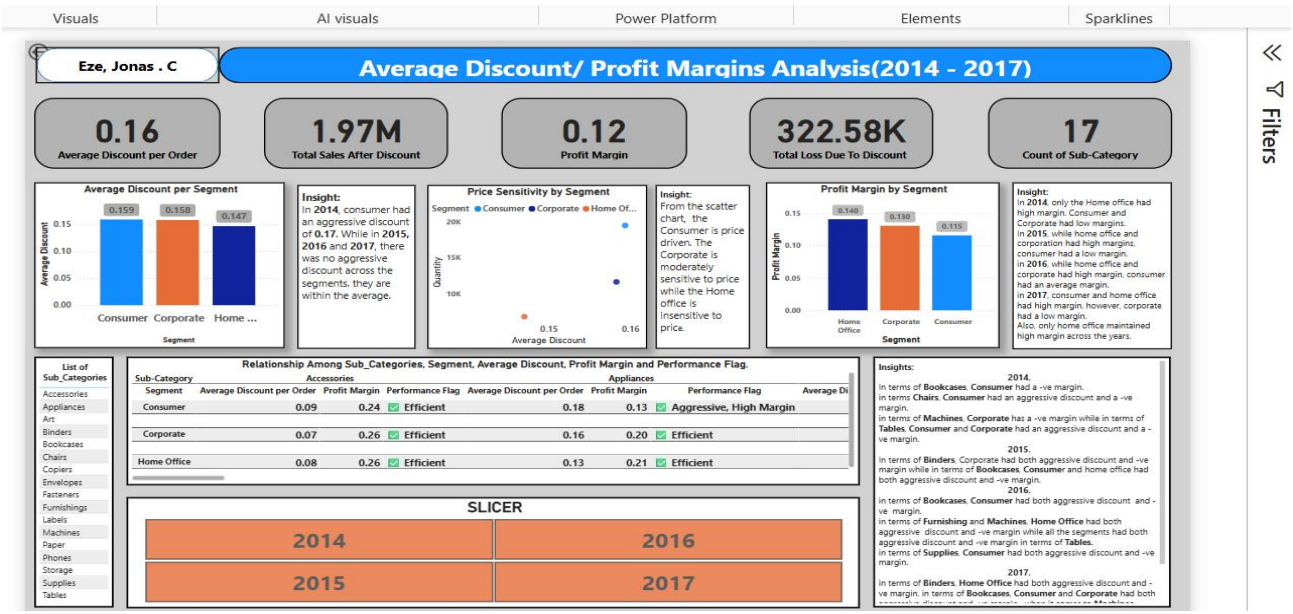
The dataset was cleaned and prepared using Pandas in a Jupyter Notebook environment.
To enable a one-to-many relationship model, a fact table was created alongside dimension tables (Ship Mode, Customer, Geography, Product, and Time).

To enrich the analysis, the following calculated metrics were added using **DAX** in Power BI:

- Average Discount per Order
- Profit Margin
- Performance Flag (based on margin and discount efficiency)

Dashboards Included:

1. **Average Discount & Profit Margin Analysis**

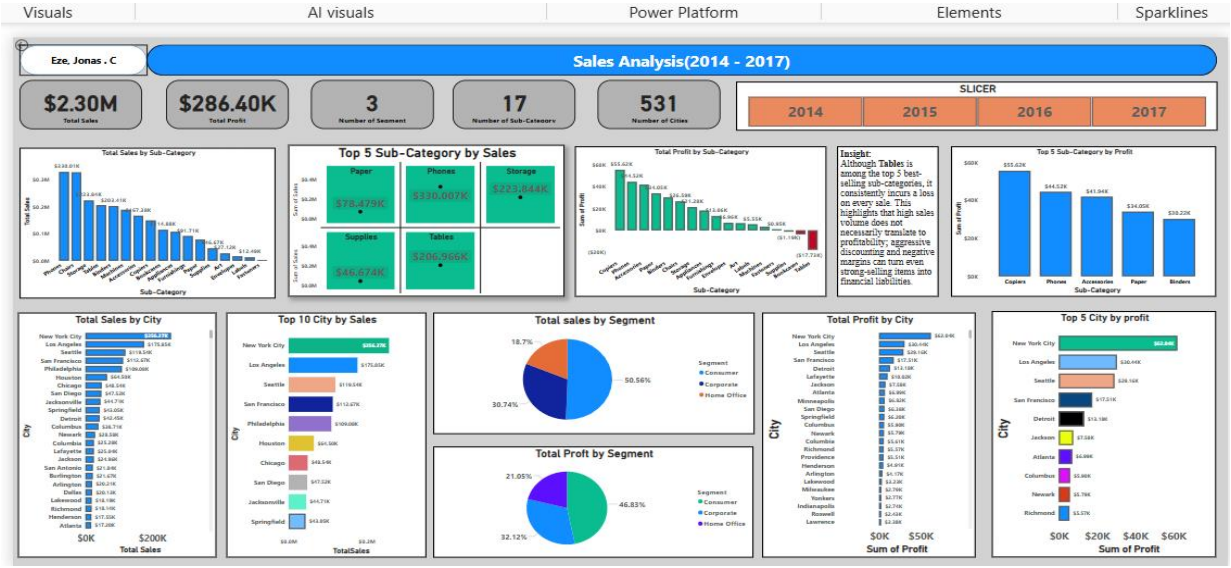


Purpose: To evaluate how discounts impact profit margins across segments and sub categories.

Key Insights:

- Consumer segment showed the highest price sensitivity and used aggressive discounting in 2014.
- Appliances sub-category maintained a high profit margin despite discounts (efficient pricing strategy).
- Corporate and Home Office segments achieved better margin efficiency over time.

2. **Sales Performance & Geographic Analysis**

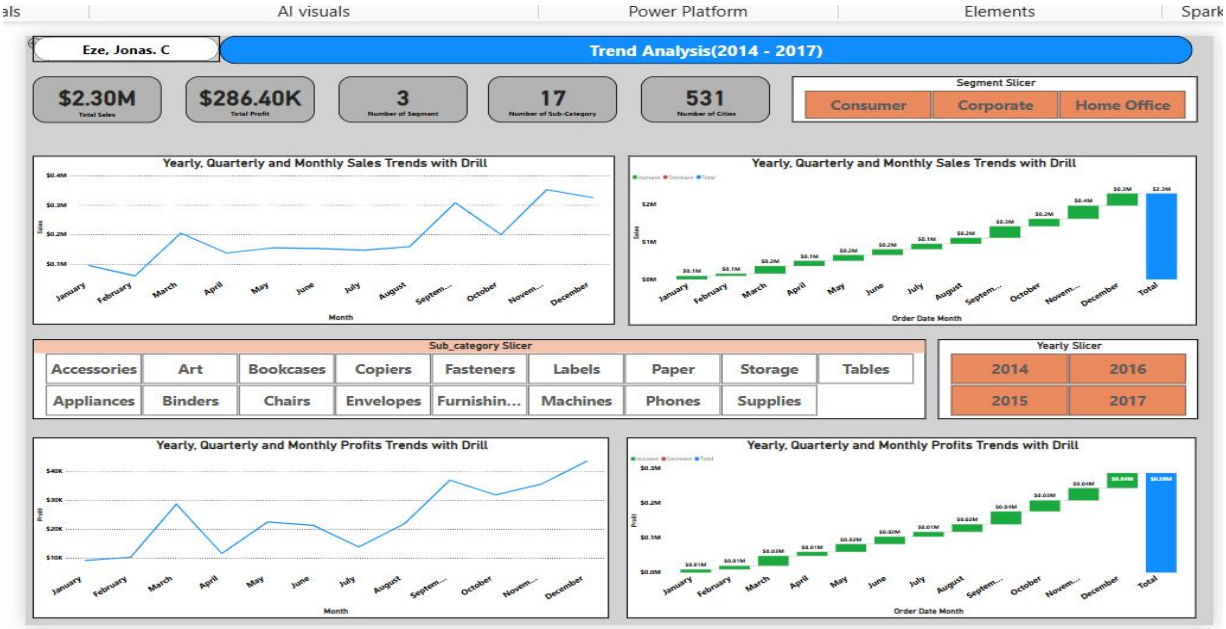


Purpose: To identify top-performing sub-categories, cities, and customer segments.

Key Insights:

- Total Sales: **$2.30M**, Profit: **$286.4K**
- **New York City**, *Phones*, and *Paper* were top contributors to both revenue and profit.
- **Tables** sub-category had high sales but resulted in a net loss, highlighting a disconnect between volume and profitability.
- Consumer segment contributed over **50% of total sales and profits**.

3. **Trend Analysis Dashboard**



Purpose: To monitor sales and profit trends across months, quarters, and years.

Key Insights:

- Strongest revenue and profit occurred in **Q4**, especially **November and December**.
- Business performance dipped around **mid-year (June–July)**.
- Trendline and waterfall visuals enabled quick comparison across months and time ranges.
- Slicers allow deep filtering by year, sub-category, and customer segment.

Business Recommendations:

- Optimize **discount strategy** for the Consumer segment to improve profitability.
- **Reevaluate pricing** for sub-categories like *Tables* that show high volume but poor margins.
- Focus **promotional and inventory planning** around high-performing periods (especially Q4).
- Replicate pricing models from high-margin sub-categories (*Copiers*, *Appliances*) to other product lines.

Skills Demonstrated:

- KPI tracking & segmentation analysis
- Time series and trend forecasting
- Performance benchmarking by category and geography
- Visual storytelling & dashboard interactivity with slicers
- Business insight extraction & actionable recommendations