



Customer Segmentation Analysis

This dashboard aims to provide actionable insights into customer segmentation, enabling the identification of trends, sales performance, and key customer demographics. Monitor trends and KPIs to support strategic decision-making.

Data Preparation

Data Source

Our internal sales database (API-accessible) provided detailed transaction records including customer IDs, products, sales regions (country and state), dates, and quantities.

Data Cleaning and Transformation using Power Query

Power Query cleaned and transformed the raw data. This included handling missing regional data (imputed using regional averages and sales trends), ensuring data type consistency, and addressing outliers (via box plots and Z-score analysis). Calculated columns for year-over-year growth and customer risk scores were added.

Data Modeling

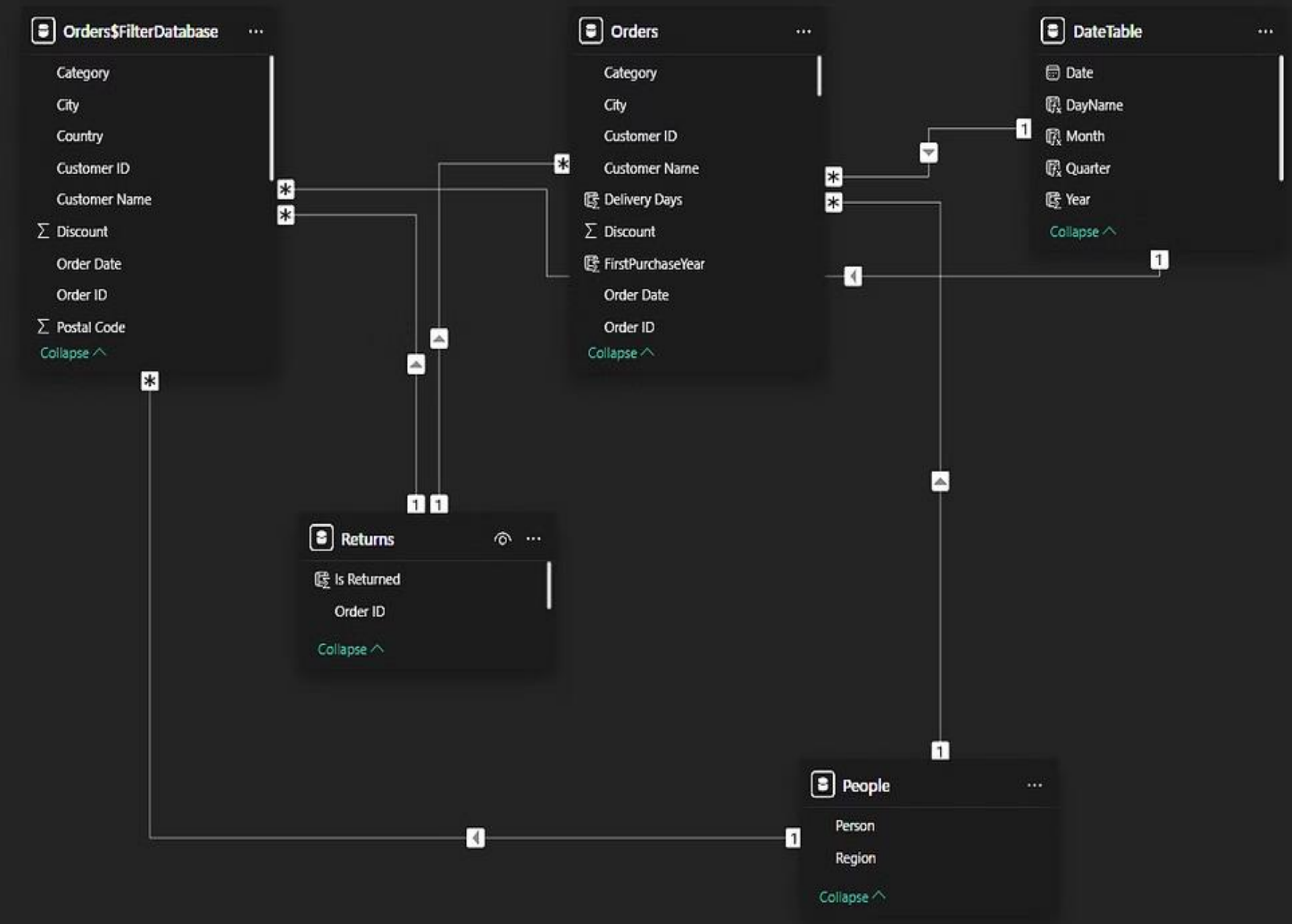
Relationship Design

- The data model consists of interconnected tables: **DimTable**, **Orders**, **People**, and **Returns**.
- These relationships enable seamless analysis of trends, performance, and customer behavior across dimensions.

Measure Creation

Developed critical **DAX measures** for enhanced analysis:

- TotalSales = SUM(Orders[Sales])
- Sales Growth % = $\text{DIVIDE}([\text{TotalSales}] - [\text{SPLY Sales}], [\text{SPLY Sales}], 0) * 100$
- Purchase Frequency = $\text{DIVIDE}([\text{Total Orders}], [\text{Years Active}], 0)$



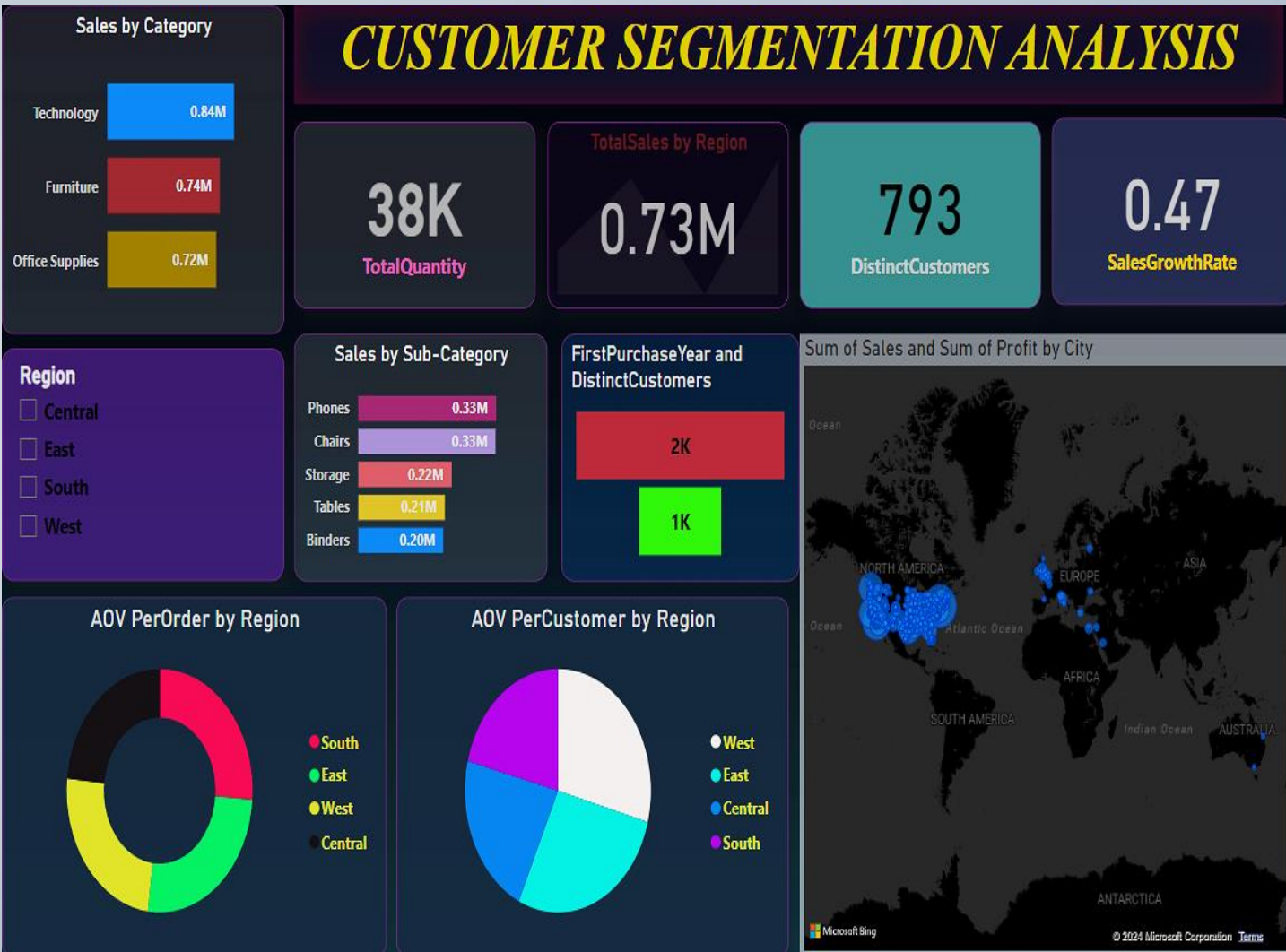
Visualization Design

Design Choices

- **Top Panel:** Key Performance Indicators (KPIs) for Total Sales, YoY Growth, and Average Sales per Customer.
- **Left Sidebar:** Filters for Region, Time Period, and Product Categories to allow customized views.

Interactive Features

- **Slicers:** Enable filtering by Region, Time, and Customer Segment for tailored insights.
- **Drill-throughs:** Allow users to deep dive into specific customer or product details.



Insights and Value Addition

Insights Delivered

- **Regional Performance:** Identified that **Region X sales dropped by 10%**, prompting targeted marketing efforts.
- **Time-Based Insights:** Uncovered a significant YoY sales growth of 20% in the Central region, enabling resource allocation adjustments.

Future Enhancements

- Integrate **customer feedback data** to align products with customer preferences.
- Incorporate **external datasets**, such as market trends, to benchmark performance against competitors.