

Superstore Dataset sales Forecasting Dashboard

By Jatin Thakur

Aim:

To utilize the Superstore sales dataset to develop an informative dashboard in Power BI for sales forecasting and performance analysis.

Dataset Overview:

The dataset contains key features that reflect day-to-day customer purchasing behavior. These fields are categorized into the following segments:

- State, City, and Region
- Mode of Payment
- Shipment Type and Shipment Date
- Order Date
- Sales and Profit per Order
- Customer Segment: Consumer, Corporate, and Home Office
- Order Quantity

These features were used to create new measures in the Power BI model to analyze customer purchasing behavior, and to evaluate profits and losses across multiple dimensions. The data was further summarized through various KPIs (Key Performance Indicators) to simplify large-scale information. Multiple visualizations such as bar charts, maps, scatter plots, ribbon charts, and line charts were used to demonstrate customer behavior across different states and cities.

Key Business Questions Addressed:

1. Identification of key performance indicators (KPIs), including:
 - Total Sales
 - Total Profits
 - Average Profit Margins
 - Total Quantity Sold
 - Total Number of Orders
 - Average Order Value
 - Profit Percentage vs. Loss Percentage
2. Identification of the top 10 most profitable cities.
3. Sales vs. Profit correlation through scatter plot analysis.
4. Year-wise customer segment analysis.
5. Overall sales trend analysis for the superstore.

Findings Based on Data Analysis:

Key Performance Indicators:

- Total Sales
- Total Profits
- Average Profit Margins
- Total Quantity Sold
- Total Number of Orders
- Average Order Value
- Profit Percentage vs. Loss Percentage

Analysis:

The store generated approximately \$1.57 million in revenue over the two-year period across all states and cities, with total profits of \$175,000 and an average profit margin of 11.2%. The superstore sold over 22,000 units of products, received roughly 6,000 orders, and reported an average order value of \$265. The profit-loss distribution shows 81.4% of orders generating profit and 19.6% resulting in losses.

Top 10 Cities with Highest Profits:

Cities such as New York City, Los Angeles, San Francisco, Seattle, and Columbus rank among the top five, each generating over \$36,400 in sales and more than \$4,800 in profits. New York City leads with \$155,000 in sales and \$34,700 in profits, making it a key market with high customer purchasing capacity.

Sales vs. Profit Scatter Plot Analysis:

The scatter plot illustrates that most cities fall within the low-sales and low-profit zone, although they exhibit similar distribution patterns on the profit axis.

Two cities appear as clear outliers from this trend.

The distribution indicates that while numerous cities achieve similar sales volumes, nearly half operate at a loss.

Cities with less than \$0.2 million in sales and consistent losses should be prioritized for further internal analysis and operational improvement.

Cities with similar sales levels but positive profits should be targeted for marketing and customer acquisition strategies to leverage potential growth.

Customer Segment Analysis by Year:

Corporate Segment:

Displays steady profit growth from January to September, followed by a significant increase from September to November. This pattern aligns with real-world seasonal activities during this period, indicating potential opportunities for targeted engagement.

Consumer Segment:

Shows consistent year-round growth with noticeable spikes in March, May, June, September, and December. Mild dips occur in April, October, and November.

Home Office Segment:

Is the only segment showing negative performance in March. A deeper analysis is recommended to identify underlying challenges contributing to losses and identify strategies to improve profitability.

Total Sales Trend Analysis:

The overall sales trend demonstrates consistent year-on-year growth from the beginning to the end of each year.

Slight dips are observed in March and October, while significant spikes occur in March, May, September, November, and December.

These fluctuations should be further examined by correlating them with external factors influencing customer spending behavior.

Observations and Conclusion:

The market shows steady and positive growth in sales from 2019 to 2020.

Cities generating less than \$0.1 million in revenue but still yielding profits should receive more focused strategic attention.

Corporate and Consumer customer segments require targeted engagement during high-potential months to maximize sales and profit outcomes.

Additionally, deeper analysis of the Home Office segment is needed to address losses and unlock future growth opportunities.