

Furniture Store Sales Analysis

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1. Project Overview

Objective:

Conducted a comprehensive analysis of a furniture store's sales data (2014–2017) to identify trends, evaluate performance metrics, and build an interactive Excel dashboard for data-driven decision making.

Scope:

- Analyze sales performance across regions, segments, and product sub-categories
- Evaluate operational efficiency (shipment duration, shipping modes)
- Create an interactive Excel dashboard for real-time insights
- Provide actionable recommendations based on data insights

Tools & Techniques:

- **Excel:** Primary tool for analysis and dashboard creation
- **Power Query:** Data loading, cleaning, and transformation
- **PivotTables & PivotCharts:** Dynamic analysis and visualization
- **Excel Dashboard:** Interactive reporting with slicers
- **Calculated Metrics:** Year-over-year (YoY) comparisons, shipment duration, monthly trends

2. Data Preparation & Transformation

Data Source

- Data was sourced from a CSV file containing sales transactions, with approximately 2,122 rows and 20 columns.
- **Data Fields:**
 - Order Date, Ship Date, Sales, Profit, Region, Segment, Product Category, Sub-Category, Quantity, Shipping Mode
- **Data Size:** Approximately 2,122 rows and 20 columns
- **Data Format:** CSV file
- **Data Credited to:** [Freedom Oboh](#)

Data Import & Transformation (Power Query)

- Loaded raw sales data (2014–2017)
- Removed duplicates and null values
- Converted data types for date columns (Order Date, Ship Date)
- Removed unnecessary columns (Postal Code, Discount)
- Added calculated columns:
 - Duration = Ship Date – Order Date (analyzing delivery efficiency)
 - Month = Extracted from Order Date (for monthly trend analysis)
- Applied data validation to ensure consistency in Region and Segment fields

3. Key Analysis & Insights

The analysis focused on key performance indicators (KPIs) such as total sales, profit, year-over-year growth, and operational efficiency metrics. The findings are summarized below:

A. Sales Performance Overview

- **Total Sales (2014–2017):** \$741,999.80
- **Total Profit (2014–2017):** \$18,451.27
- **YoY Sales Growth:**
 - **2015 vs. 2014:** 45% ▼
 - **2016 vs. 2015:** 131% ▲
 - **2017 vs. 2016:** 57% ▼
- 2015: Decline of 45% (focus on reasons for drop)
- 2016: Growth of 131% (analyze factors contributing to success)
- 2017: Decline of 57% (evaluate challenges faced)

Visualizations:

Annual Sales Trend

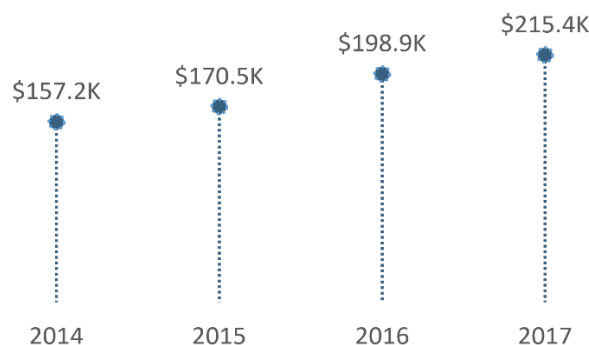


Figure 1: Annual sales trend (2014–2017)

Years	Profit	Profit YOY%	Sales	Profit YOY%2	Quantity	Quantity YOY%
2014	\$5.5K		\$157.2K		1623	
2015	\$3.0K	-45%	\$170.5K	8%	1775	9%
2016	\$7.0K	131%	\$198.9K	17%	2193	24%
2017	\$3.0K	-57%	\$215.4K	8%	2437	11%

Figure 2: Year-over-year % change with conditional formatting

B. Geographic Performance

- **Total Sales by Region:**

- Central - \$163.8K
- East - \$208.3K
- South - \$117.3K
- West - \$252.6K

- **Top 5 Selling Cities:**

1. New York City – \$75.7K
2. Los Angeles – \$54.0K
3. Seattle – \$41.0K
4. Philadelphia – \$36.5K
5. San Francisco – \$36.4K

- **Sales by State:**

- Highest: California \$156.1K
- Lowest: Montana \$64

Opportunity: Expand marketing in low-performing states

Visualizations:

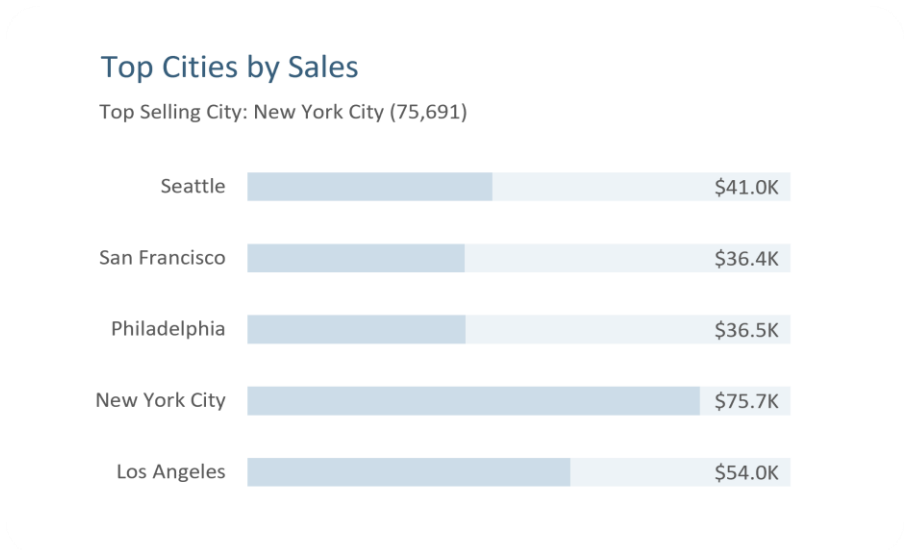


Figure 3: Top 5 selling cities by sales

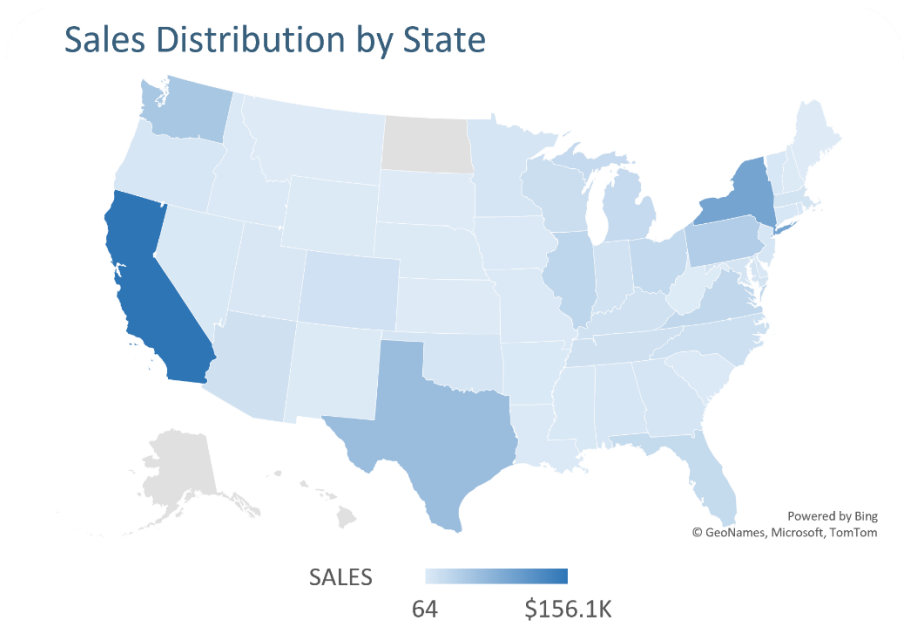


Figure 4: State-wise sales performance heatmap

C. Operational Efficiency

- **Average Shipment Duration:** 4 days
 - Fastest: Same-Day (0 days)
 - Slowest: Standard Class (5 days)
- **Most Used Shipping Mode:** Standard Class (59% of shipments)

Visualizations:

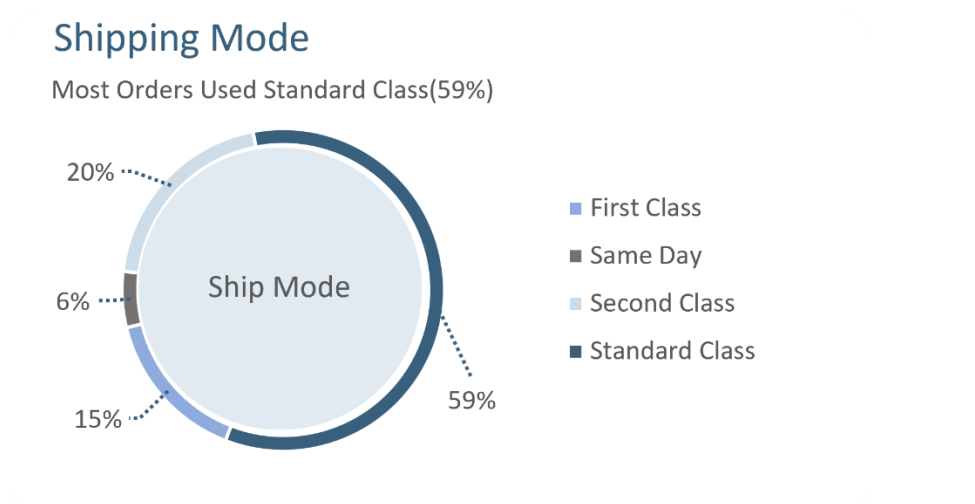


Figure 5: Shipping mode preference Standard Class (59% of shipments)

D. Product & Category Analysis

- **Top 3 Sub-Categories by Sales:**
 1. Chairs - \$328.4K
 2. Tables - \$207.0K
 3. Bookcases - \$114.9K
- **Lowest Performing Sub-Categories:**
 - Furnishings - \$91.7K Consider promotions or discontinuation

Visualizations:

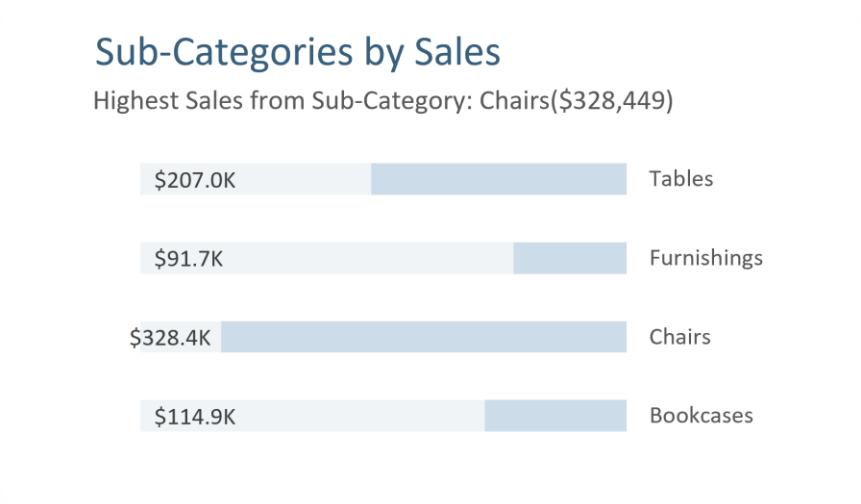


Figure 6: Top sub-categories by sales

E. Monthly Sales Trends

- **Best Month:** December (Peak sales due to holiday shopping)
- **Worst Month:** February (Opportunity for promotions)
- **Seasonal Patterns:** Sales tend to increase during the holiday season and decrease in the summer months.

Visualization:

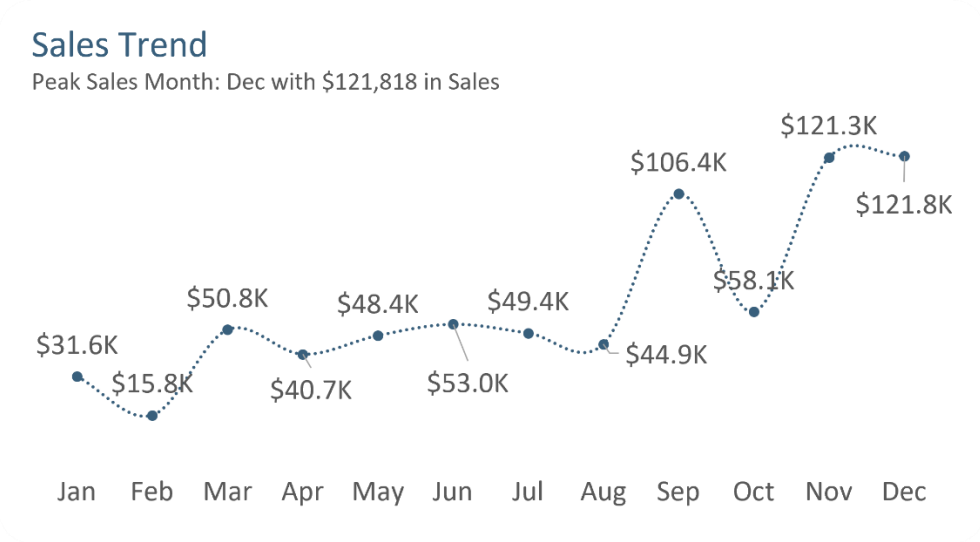


Figure 7: Line chart: Monthly sales trends

4. Interactive Dashboard Features

The Excel dashboard includes:

- **Dynamic Slicers:** Region, Segment
- **KPI Summary Cards:** Total Sales, Profit, Quantity, YoY Growth
- **Top/Bottom Performers:** Products, Cities
- **Trend Analysis:** Monthly/Yearly
- **Shipment Efficiency Metrics:** Most used shipping modes, average shipment duration

User Interaction:

Viewers can filter by region, or segment to see real-time updates in all charts.

- Dashboard Screenshot:

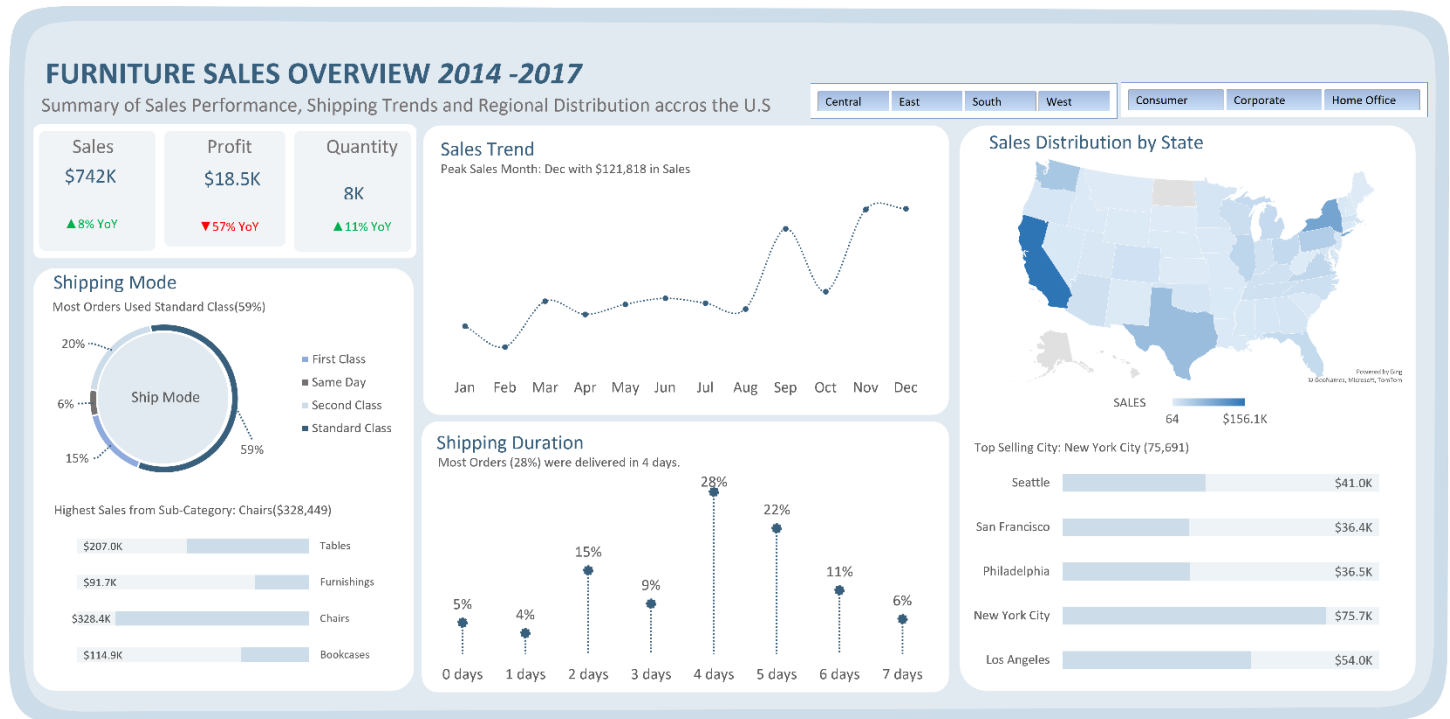


Figure 8: Furniture Sales Overview Dashboard

- Dashboard link: [Furniture Store Sales Dashboard](#)

5. Key Takeaways & Recommendations

- **Overall Performance:**

- Strong profit growth in 2016, but significant declines in 2015 and 2017.
- Consistent sales growth over the years, with fluctuations in profit margins.
- There is a need to investigate the reasons for fluctuations in profit
- Implement strategies to stabilize profit margins, such as optimizing pricing models, reducing operational costs, and improving inventory management.

1. **Growth Opportunities:**

- Focus on top-performing cities/states
- Expand marketing in underperforming regions

2. **Operational Improvements:**

- Reduce shipment delays for Standard Class
- Optimize inventory for peak seasons

3. **Product Strategy:**

- Promote high-margin sub-categories
- Review/discontinue low-performing products

4. **Seasonal Promotions:**

- Target February with special promotions to boost sales

6. Conclusion

This project provided valuable insights into the furniture store's sales performance, highlighting areas for growth and operational efficiency. The interactive Excel dashboard serves as a powerful tool for ongoing analysis and strategic decision-making, enabling the store to adapt to market trends and customer preferences effectively.