

# SALES ANALYSIS DASHBOARD



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Submitted By:

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# Introduction

This project used a dataset that had a lot of information about sales transactions, such as order dates, customer information, product information, sales amounts, profit margins, shipping methods, and regional characteristics. By looking at this data, the company can find useful information about many different aspects of how well it is doing in business.

The main goals of this analysis are as follows:

## **1. Analyzing Sales Performance**

Examine sales and profit trends over time to identify patterns of growth. Discover which products and groups are most crucial for generating revenue and driving sales. Point out the cities and regions with the best sales.

## **2. What customers think**

Look at how people buy things to find customers who are worth a lot. Look at the products and categories that customers buy most often to learn what they like.

## **3. Efficiency of Operations**

Look at how different shipping methods affect sales and profits. Keep an eye on how sales are spread out across shipping methods to improve logistics and cut costs.

## **4. Analysis of Discounts and Profitability**

Look into how discounts affect profit margins. Find the best discount strategies that boost profits without cutting into margins.

## **5. How well the product works**

Find the best and worst products and categories to help you plan your inventory and marketing. Look at how well each sub-category is doing to find chances to make new products or stop making old ones.

## **6. Analyzing the market and the region**

Look at sales and profits in different areas to find chances and problems in the market. Use geographic information to help with marketing and sales plans for specific areas.

# Key Findings

Total Sales and Profit: \$2 million in sales and \$286,000 in profit with a 12.5% margin.

- The Canon image CLASS 2200 Copier is the best-selling product, with \$61,000 in sales and \$25,000 in profit.
- Customer Dependence: Sean Miller alone brings in \$25,000 in sales, and the top 10 customers make up a big part of that.
- Insights by Region: The West region made the most money (\$108,000), while the South region made the least (\$108,000).
- Category Contribution: Technology is the biggest factor, bringing in about \$0.84 million in sales and \$0.15 million in profit.
- Discount Effect: Sales were only \$0.06 million with a discount compared to \$2.23 million without one, showing that discounts lower profits.
- Cleaning the data: Removing duplicates cut sales from \$2 million to \$1.2 million, showing how important preprocessing is.
- Trend of Growth: Sales are up about 47% year over year, but profits vary from month to month.

# Actionable

- **Product Strategy:**

Emphasize marketing and stock planners on best sellers (Copiers, Technology).  
2,5203.5%) reevaluate low-profit sub-categories with the negative/ low margins.

- **Customer Engagement:**

Create loyalty programs for your high-value customers. Customers: Broaden the customer base to minimize concentration risk.

- **Discount Optimization:**

Cut or rethink discounts to preserve margins. Try targeted promotions rather than deep discounts.

- **Regional Expansion:**

Focus on growth objectives in South and Central regions with underperforming sales.

- **Operational Efficiency:**

Investigate opportunities for logistic improvements by balancing sales across modes of transportation.

# Methodologies

- **Power BI Measures (DAX):**

Generated KPIs (Total Sales, Profit, Margin, Quantity).

Rank (Top 5 Customers, Top 5 Products by Profit).

Time Intelligence (YOY Growth, Running Total, Avg Sales by Year).

- **Power Query ETL:**

Removed duplicates.

Split Customer Names.

Group by orders year and get average sales.

Other calculated fields (summary values) got added -Sales Tax, Sales Category High/L.

# Approaches

- **Page Segmentation:**

Main Page: General KPIs and top trends.

Product Page: Profit and product level split.

Map Page: Where the numbers tell the story.

Sales Page: Timing series, discount, similar.

Customer Page: Categorization of your customers and sales.

Trends page: Profit or Discount page, YOY growth.

- **Visualization Techniques:**

KPI Cards for summary metrics.

Bar/Column charts for comparisons.

Line charts for time trends.

Map visual for geographic distribution.

Pie/Tree map for categorical breakdown.

# Insights

## Main Dashboard



### • KPI Cards

Sales total: \$2 million.

Profit total: \$286K.

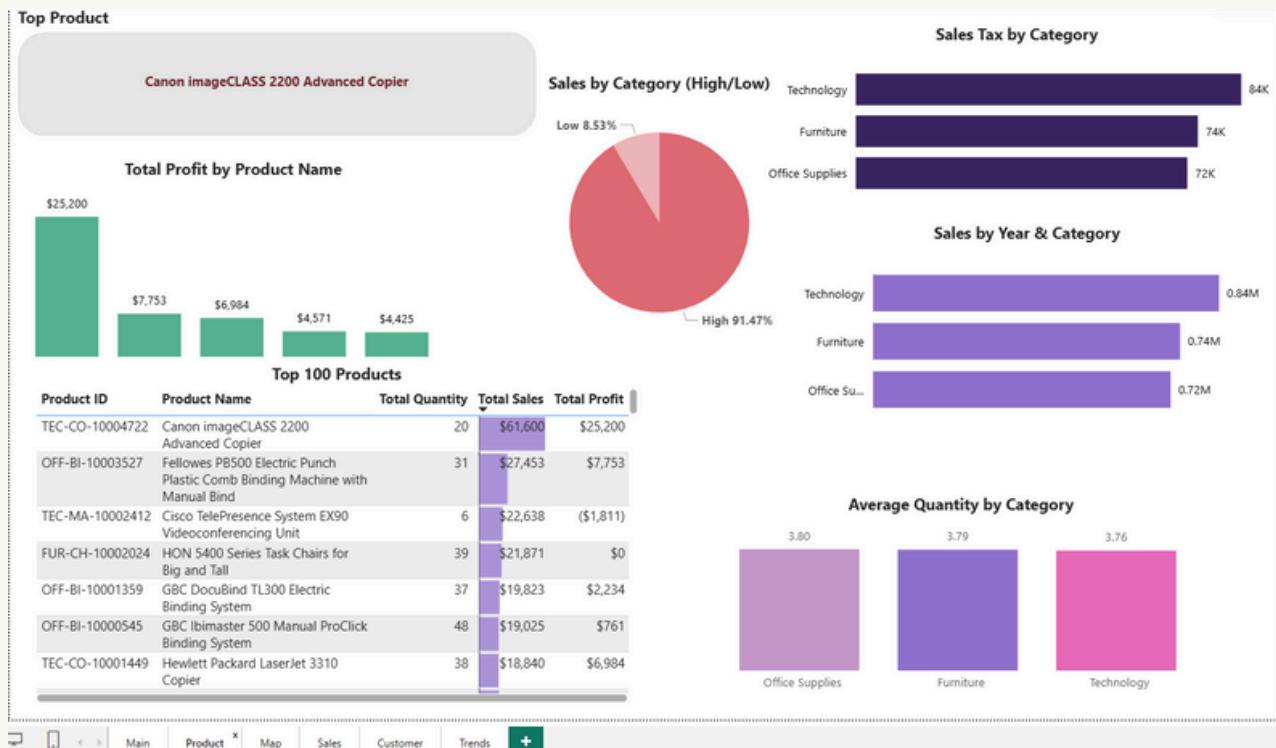
Total quantity: 37,873.

Profit margin: 12.5 percent.

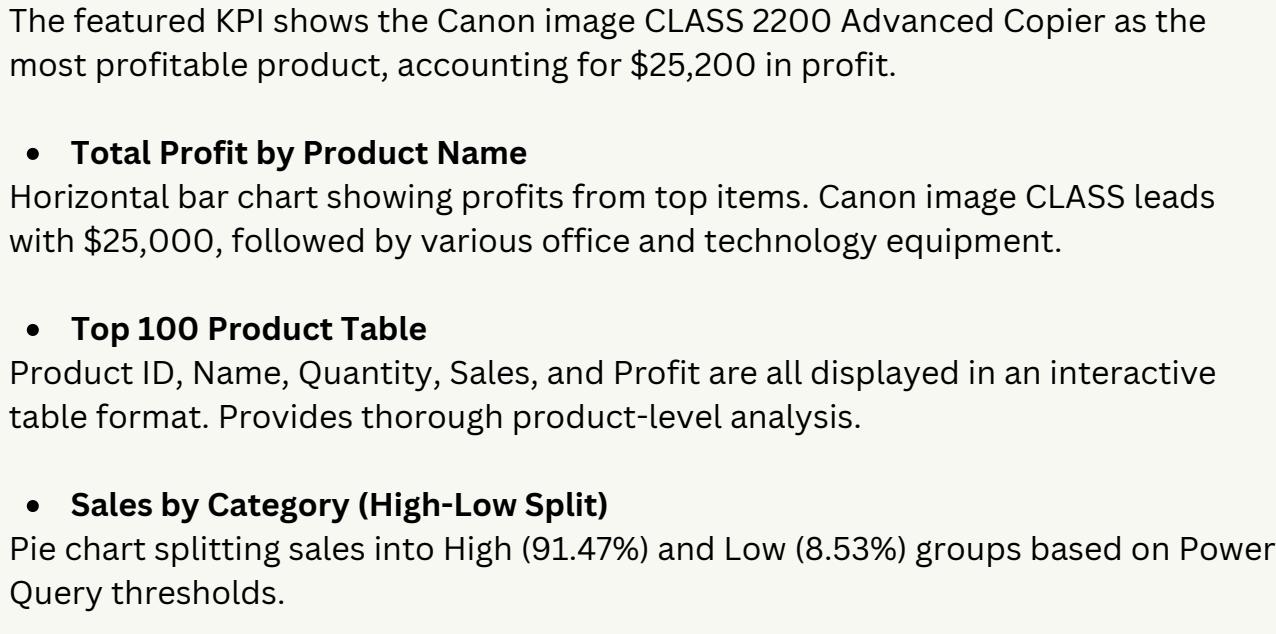
- Sales by Top 10 Customers** - A horizontal bar chart depicting customers by revenue, with Sean Miller contributing the highest revenue (\$25K).
- Top ten products by revenue.** Bar chart showing these top products, and the leading item grossing in excess of \$86K.
- Sales by shipping mode** - Pie chart showing what types of shipping generated what amount of sales - Standard Class shipping amounting to roughly 59%.
- Sales vs. Profits by Category** A clustered bar chart comparing profitability by categories, and sales by categories. Technology is the leader in profit (\$0.15 million) and revenue (\$0.84 million) compared to other categories.

- **Profit by Location** - A bar chart displaying profit by location. The Central and Eastern regions provide the most profit.
- **Total Quantity and Sales by Month** - A combo-chart (column + line) that shows the monthly trends of sales and quantity growth. Both sales spike at the end of the year.

## Product



## Customer



- **Top Product Highlight**

The featured KPI shows the Canon image CLASS 2200 Advanced Copier as the most profitable product, accounting for \$25,200 in profit.

- **Total Profit by Product Name**

Horizontal bar chart showing profits from top items. Canon image CLASS leads with \$25,000, followed by various office and technology equipment.

- **Top 100 Product Table**

Product ID, Name, Quantity, Sales, and Profit are all displayed in an interactive table format. Provides thorough product-level analysis.

- **Sales by Category (High-Low Split)**

Pie chart splitting sales into High (91.47%) and Low (8.53%) groups based on Power Query thresholds.

- **Sales Tax By Category**

A bar chart depicts the total sales tax collected by category. Technology pays the highest tax (~84K), followed by Furniture and Office Supplies.

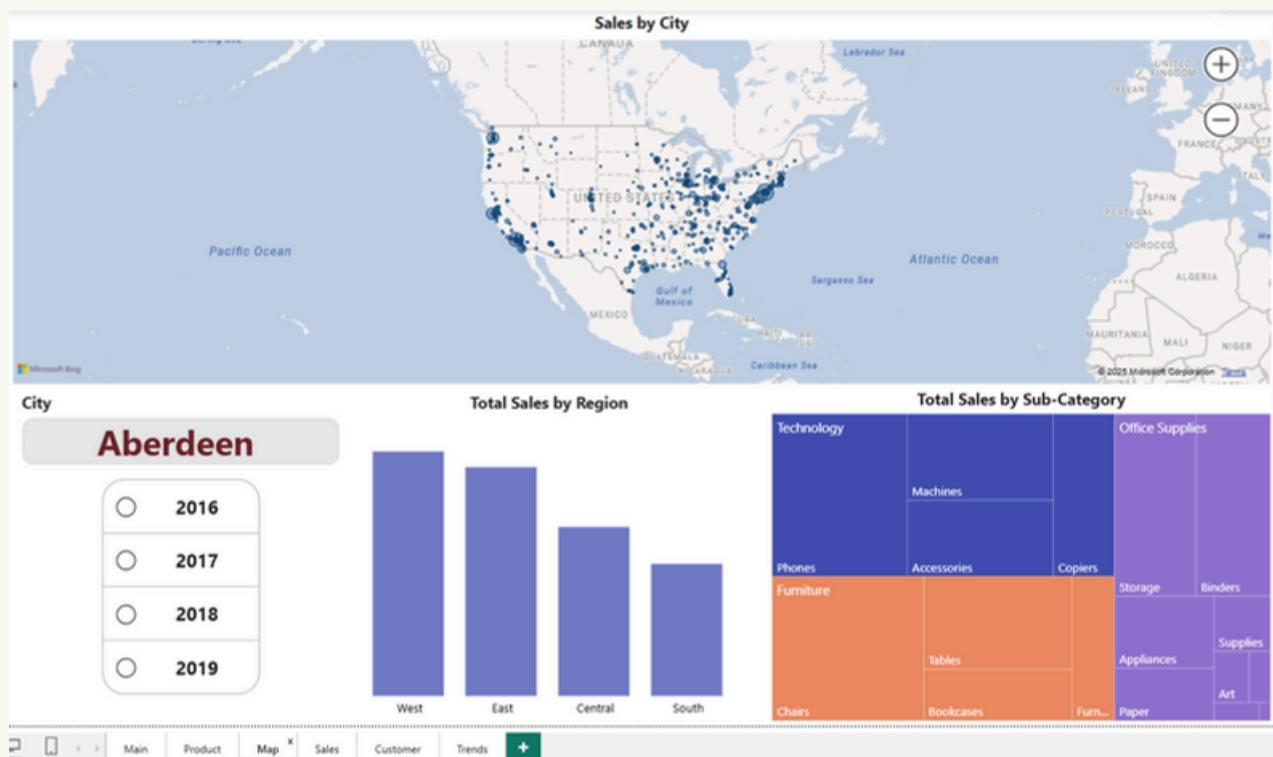
- **Sales by Year and Category**

A clustered bar chart compares sales across categories over time. Technology accounts for \$0.84 million in revenue, while Furniture and Office Supplies are virtually equal (\$0.72 million each).

- **Average quantity by category**

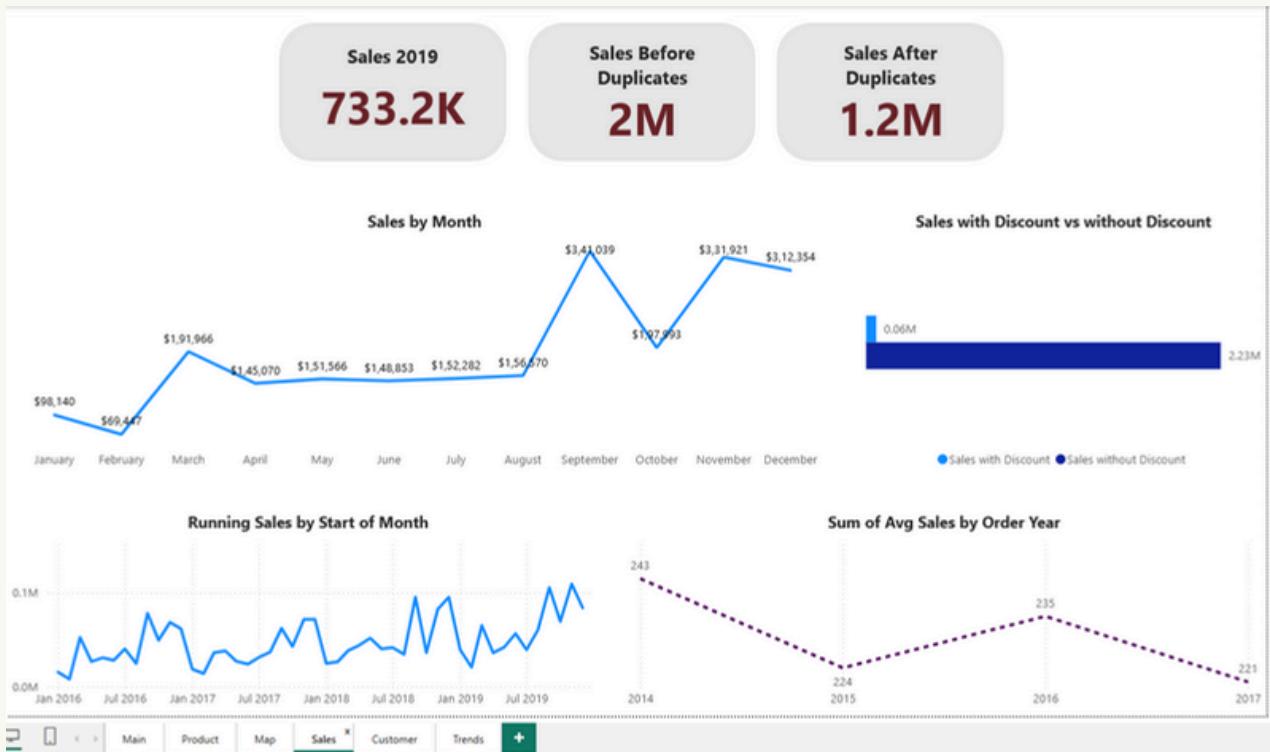
The bar chart shows that the typical quantities of Office Supplies, Furniture, and Technology are closely aligned (3.7-3.8 per order).

## Map



- **Filtering Orders (2019)** - Filtering data to obtain the orders only from the year 2019 to analyze the performance of 2019.
- **Adding a Sales Tax Column** - A new column was calculated in Power Query as 10% of the sales, and added.
- **Removing Duplicates** - I further cleaned the data by removing duplicate Order Id and cleaned another dimension to accurately make business decisions.
- **Splitting Customer Name** - I created First Name and Last Name columns from the original 'Customer Name' column to create clarity and granularity.
- **Grouping Orders by Year** - I grouped the Sales by year to look at annual trends.
- **Custom Column for the Sales Category** - I coded sales as High and Low by providing the ranges ( $>100$ ) and ( $\leq 100$ ) respectively.

## Sales



- **KPI Cards**

Sales 2019: \$733.2K (Filtered for only 2019 orders). Sales Before Duplicates: \$2M (Raw dataset before cleanup). Sales After Duplicates: \$1.2M (Post duplicate removal, showing true sales).

- **Sales by Month (Line Chart)**

This shows the trend of monthly sales values for 2019. Peaks in September (\$3.41M) and November (\$3.31M) indicate seasonal demand.

- **Sales with Discount vs. Without Discount (Bar Chart)**

This compares revenue from discounted orders to non-discounted orders. Non-discounted sales (\$2.23M) are much higher than discounted sales (\$0.06M). This suggests discounts may not significantly drive sales in this dataset.

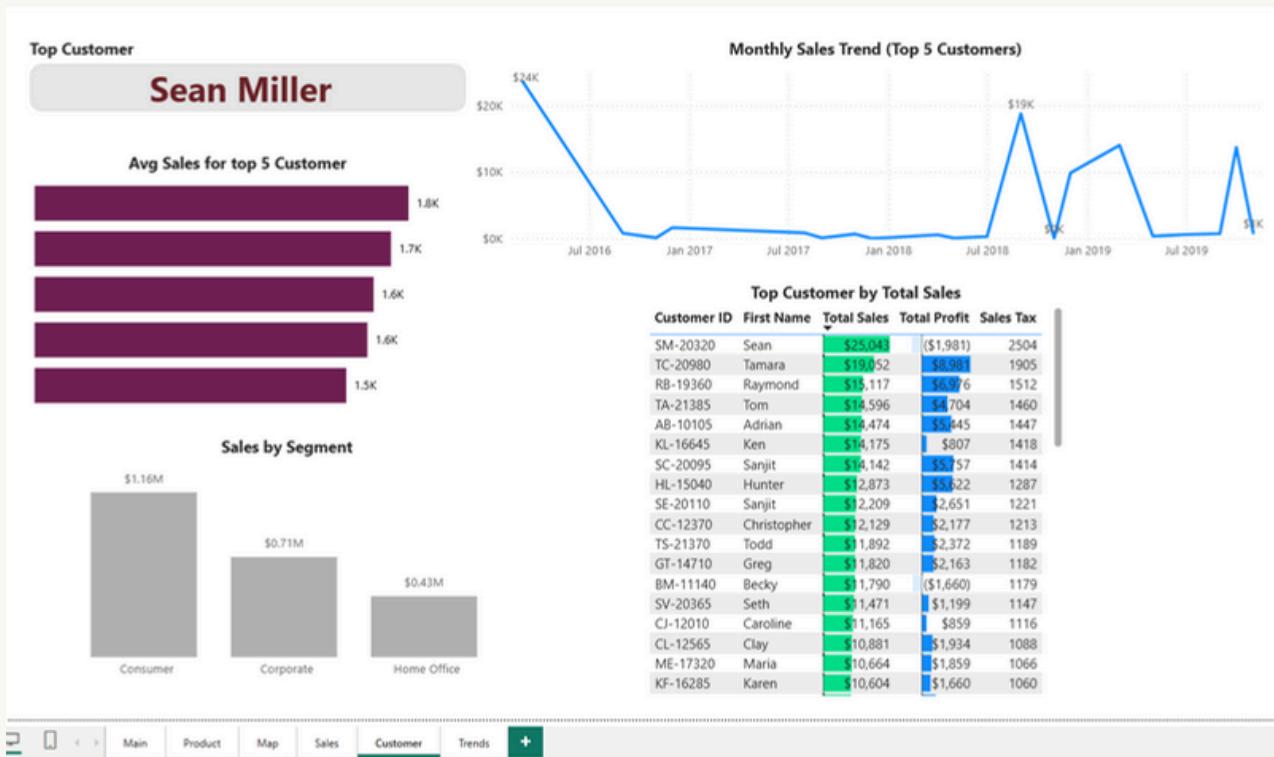
- **Running Sales by Start of Month (Line Chart)**

This shows the running total of sales from 2016 to 2019. It displays consistent growth with noticeable seasonal spikes.

- **Sum of Average Sales by Order Year (Line/Dot Chart)**

This shows the average sales trend across the years 2014 to 2017. Sales dipped in 2015 (224) but picked up in 2016 (235) before another decline in 2017 (221).

## Customer



- **Top Client (Highlight/Card)**

Shows Sean Miller as the client who contributes the most to sales. aids in locating valuable clients.

- **Average Sales for the Top Five Clients (Bar Chart)**

Displays the top 5's average sales per customer. falls between \$1.5K and \$1.8K, emphasizing the concentration of sales among important clients.

- **Monthly Sales Trend (Line Chart of the Top 5 Customers)**

Shows the top five clients' monthly sales over time. demonstrates seasonality with surges in July 2016 (\$24K) and mid-2018-2019.

- **Top Client by Total Revenue (Table)**

Customer ID, name, total sales, total profit, and sales tax are all included in this comprehensive table. Sean Miller, for instance, has \$25K in sales and a -\$1.9K profit (loss). enables decision-making drill-down at the consumer level.

- **Sales by Segment (Column Chart)**

Divides sales among many client categories:

**Customer: \$1.16M, Business: \$0.71M, Office at Home: \$0.43M**

# Conclusion

The sales analysis conducted through Power BI dashboards offers a clear view of the company's performance across various areas: products, customers, regions, and operational factors. The results show that the business has achieved strong revenue growth of nearly 47% year-over-year. However, profitability faces challenges from discounting practices and an over-reliance on a few products and customers. Technology, especially copiers, is the backbone of the business, contributing significantly to profit. In contrast, categories like Furniture and Office Supplies struggle to maintain sustainable margins, particularly when heavy discounts apply.

Customer analysis indicates that a small group of buyers, led by Sean Miller, generates a large share of revenue. This creates both an opportunity for loyalty programs and a risk of dependency. Geographically, the West and East regions perform well, while the South significantly lags behind, representing untapped potential. Importantly, data preparation through Power Query revealed inflated sales due to duplicates, which highlights the critical importance of data quality for sound decision-making.

Overall, the dashboards uncover strengths and point to actionable opportunities for improvement. These include optimizing discount policies, diversifying product and customer portfolios, and targeting underperforming regions. If the organization implements these strategies, it can protect its profitability while fostering long-term growth and competitiveness in the market.