

Regional Sales Analysis

Agenda

- Problem Statement
- Approach
- Data Overview
- Project Workflow
- Exploratory Data Analysis
- Key Insights
- Recommendation
- Dashboard Preview





Problem Statement

Problem Statement

Sales teams often lack a clear, data-driven understanding of regional performance, making it difficult to identify growth opportunities and optimize resources. This project aims to analyse and visualize regional sales data to uncover trends, evaluate profitability, and support strategic decision-making.

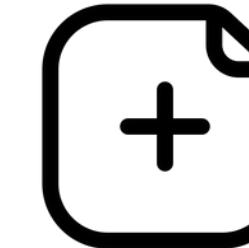
What's the Business Question?

- Inconsistent revenue and profit performance across U.S. regions
- Lack of visibility into seasonal swings, top SKUs, and channel profitability
- Goal: Leverage 5 years of historical data to pinpoint growth levers and optimize strategy



Approach

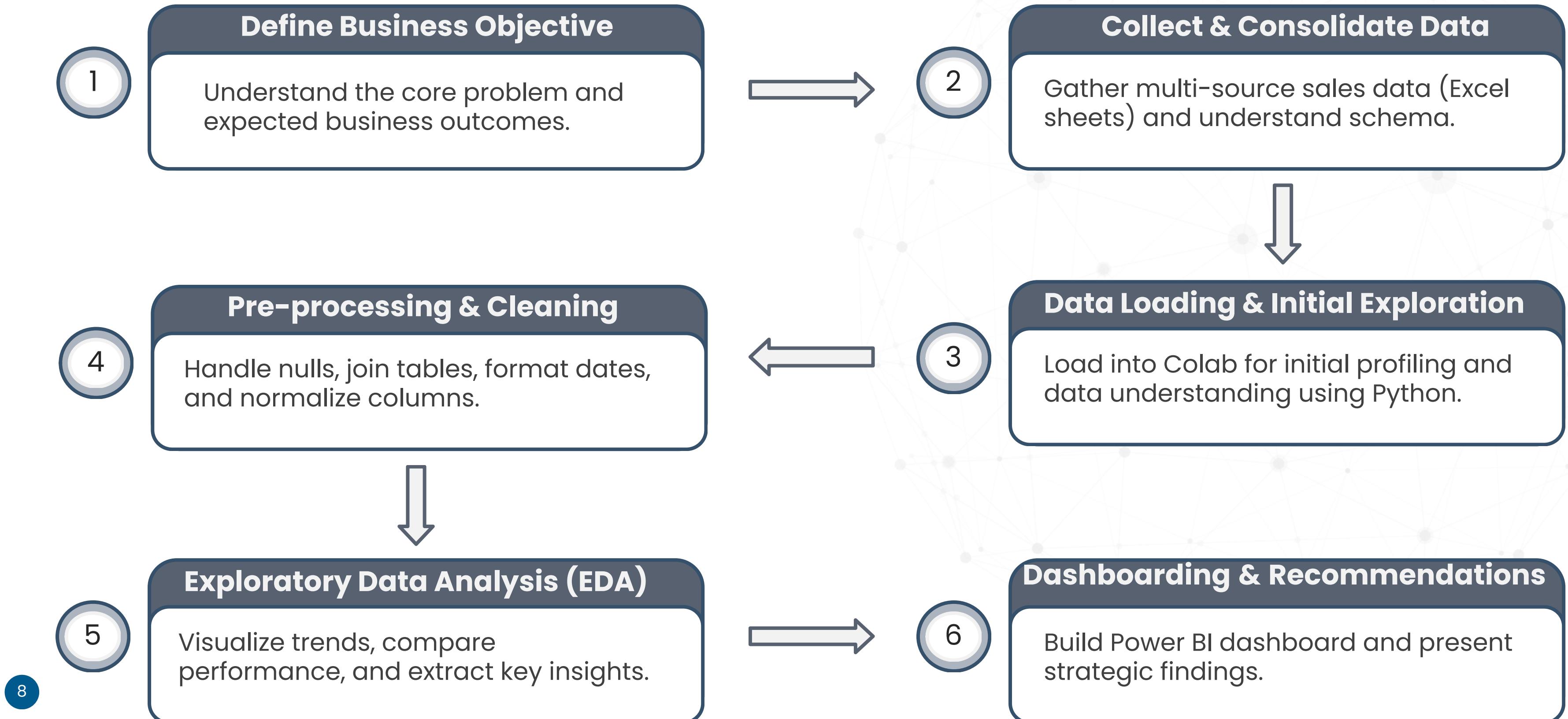
Approach – Two phase solution



- Dive into historical sales, margins, products, channels, regions
- Surface trend, outliers & relationships

- Build a live view for business Users to self serve insights
- Enable ad-hoc slicing by time, product, region, channel

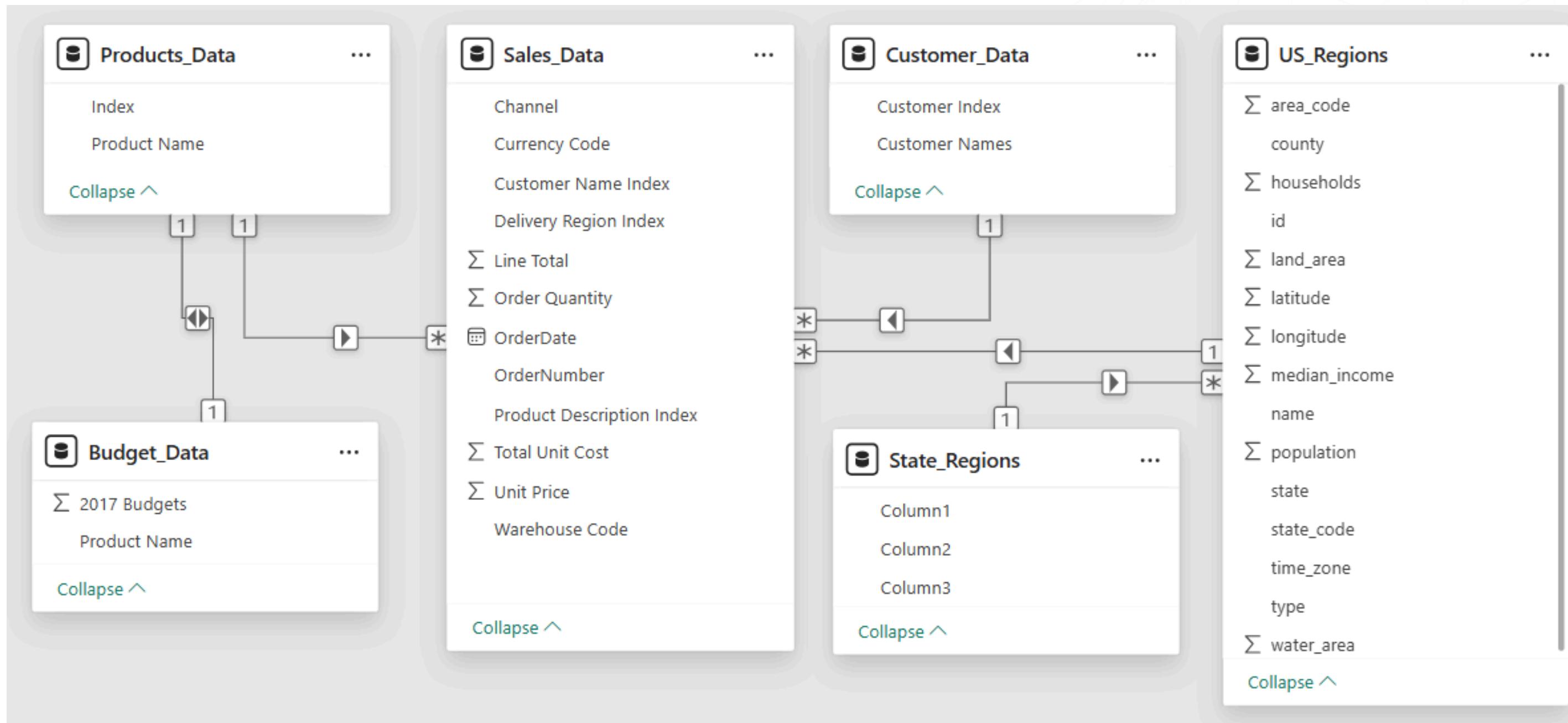
Project Workflow





Exploratory Data Analysis

Raw Dataset Structure – Before Processing



Sales, products, budgets, customers, regions, and states were spread across unlinked tables. No relationships were defined initially— Pre-processing was required to clean, normalize, and join them for analysis.

Exploratory Data Analysis (EDA)

Uncovering patterns, trends, and business insights from historical data!
!

Understanding the “What, Where & Why” behind the sales numbers

Exploring data through visuals, aggregations, and comparisons

Laying the groundwork for informed recommendations

.et's Dive In



EDA: Step-by-Step Process

- Import Libraries
- Load Data
- Initial Exploration
- Pre-processing & Cleaning
- Feature Engineering
- EDA & Visualization
- Key Insights
- Recommendations



Pre-processing & Feature Engineering

The necessary steps applied to prepare this dataset for analysis.

- Set header row for state – region table
- Merge Sales, Customers, Products, Regions, State–Region & Budgets tables
- Drop redundant columns
- Standardize column names to lowercase
- Select key columns that are used for that analysis
- Rename columns to more sensible names
- Create profit and profit_margin_pct columns



Note: No missing values or duplicate rows were found in the dataset

Final Dataset Structure – Ready for Analysis

	order_number	order_date	customer_name	channel	product_name	quantity	unit_price	revenue	cost	state	state_name	us_region	lat	lon	budget	profit	profit_margin_pct
0	SO - 000225	2014-01-01	Rhynoodle Ltd	Wholesale	Product 27	6	2499.1	14994.6	1824.343	GA	Georgia	South	32.08354	-81.09983	NaN	13170.257	87.833333
1	SO - 0003378	2014-01-01	Thoughtmix Ltd	Distributor	Product 20	11	2351.7	25868.7	1269.918	IN	Indiana	Midwest	39.61366	-86.10665	NaN	24598.782	95.090909
2	SO - 0005126	2014-01-01	Amerisourc Corp	Wholesale	Product 26	6	978.2	5869.2	684.740	CA	California	West	37.66243	-121.87468	NaN	5184.460	88.333333
3	SO - 0005614	2014-01-01	Colgate-Pa Group	Export	Product 7	7	2338.3	16368.1	1028.852	IN	Indiana	Midwest	39.16533	-86.52639	NaN	15339.248	93.714286
4	SO - 0005781	2014-01-01	Deseret Group	Wholesale	Product 8	8	2291.4	18331.2	1260.270	CT	Connecticut	Northeast	41.77524	-72.52443	NaN	17070.930	93.125000

Identifiers: order_number, order_date, customer_name, channel, product_name

Financials: quantity, unit_price, revenue, cost, profit, profit_margin_pct

Calendar: order_month_name, order_month_num, order_month

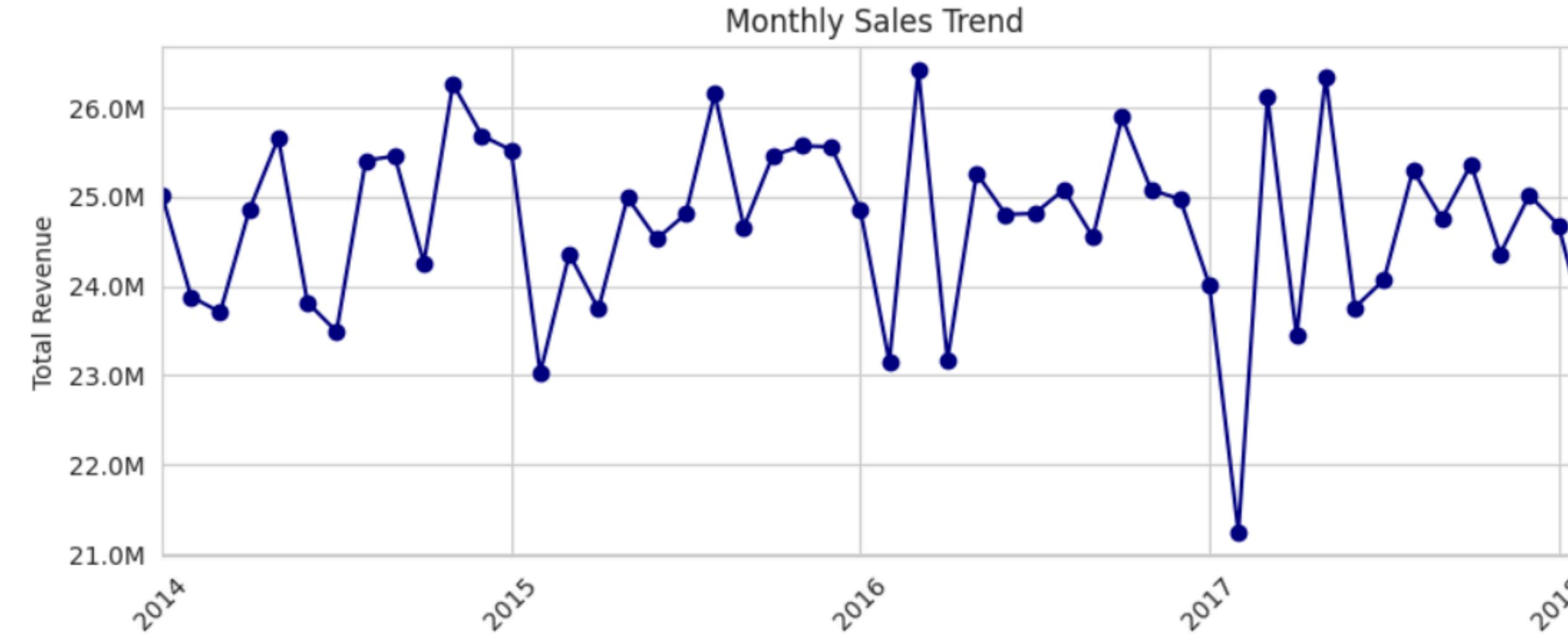
Geography: state (code), state_name, us_region, lat, lon

Planning: budget (2017)



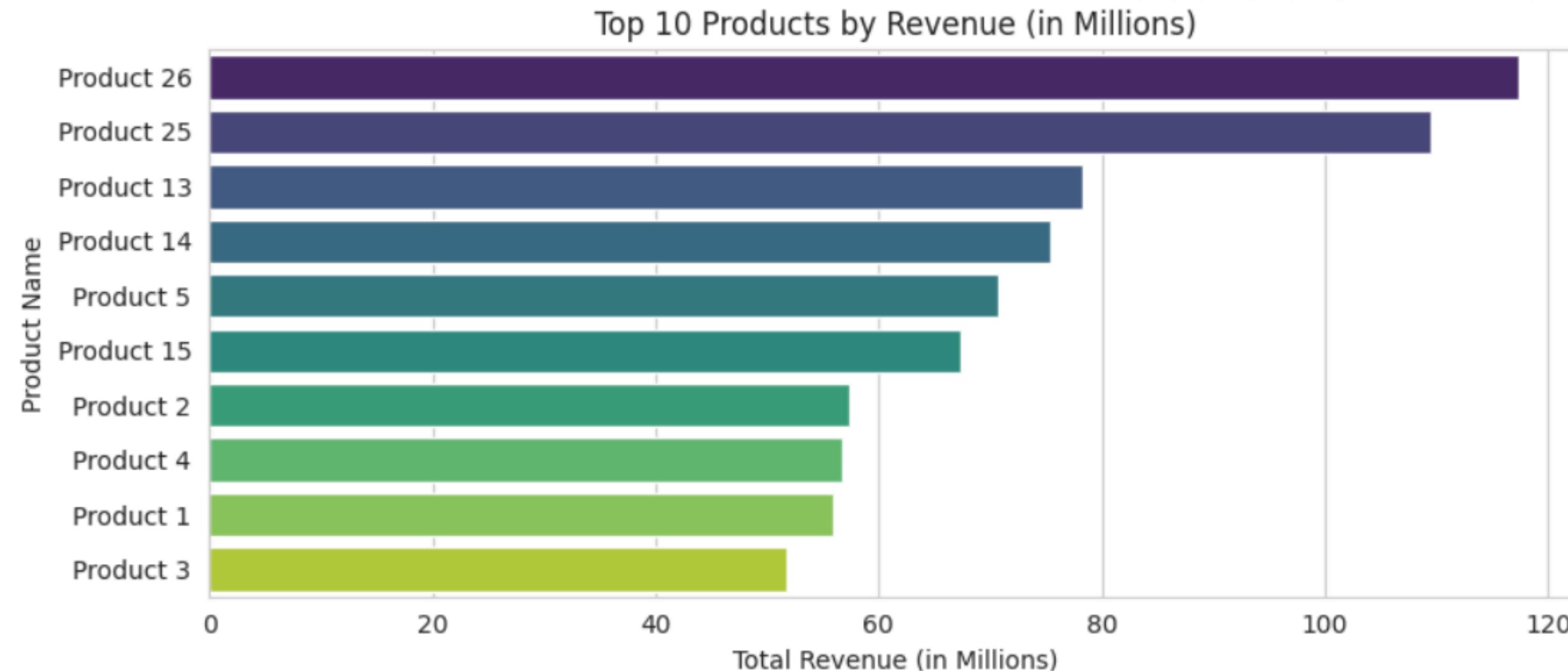
Charts & Insights

Monthly Sales Trend Over Time



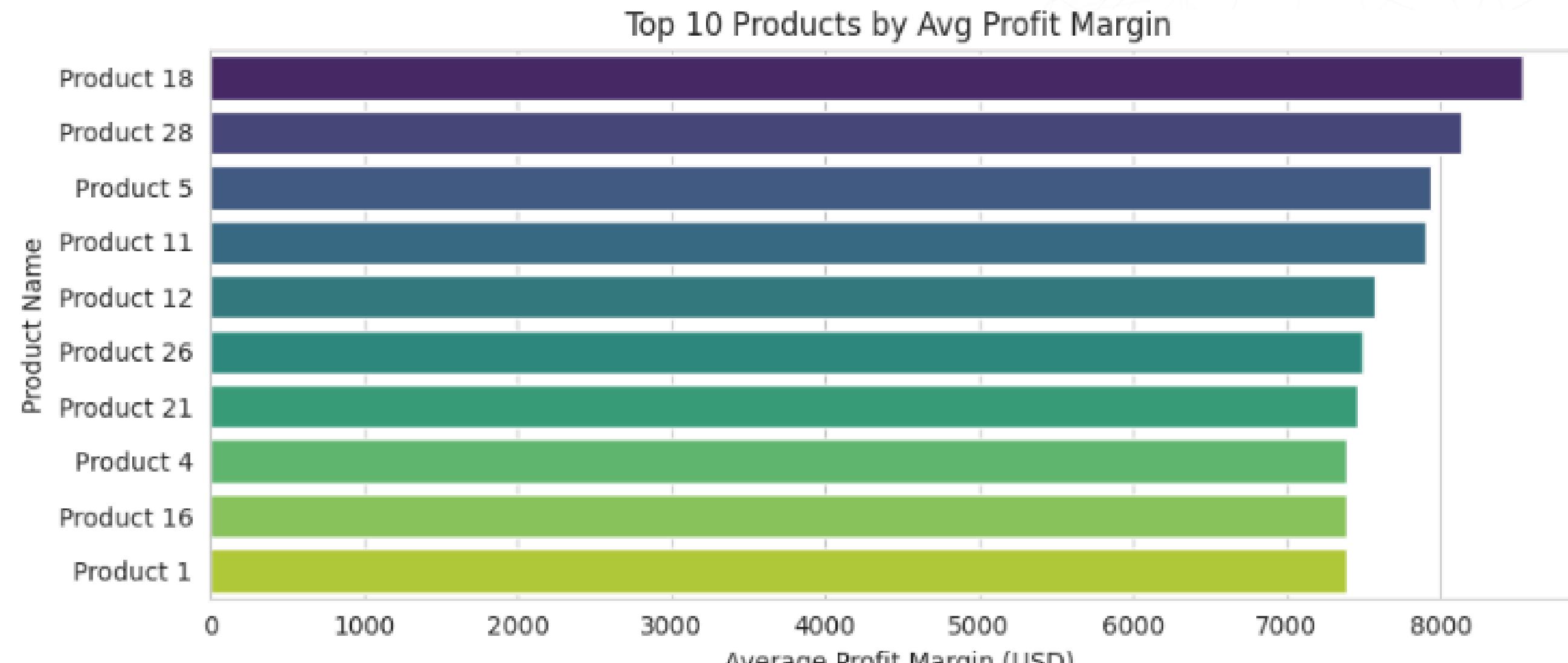
- Consistent sales cycle: \$24M to \$26M.
- Seasonal peaks: Late spring/early summer (May-June).
- Annual low: January.
- Notable outlier: Sharp revenue drop in early 2017.

Top 10 Products by Revenue



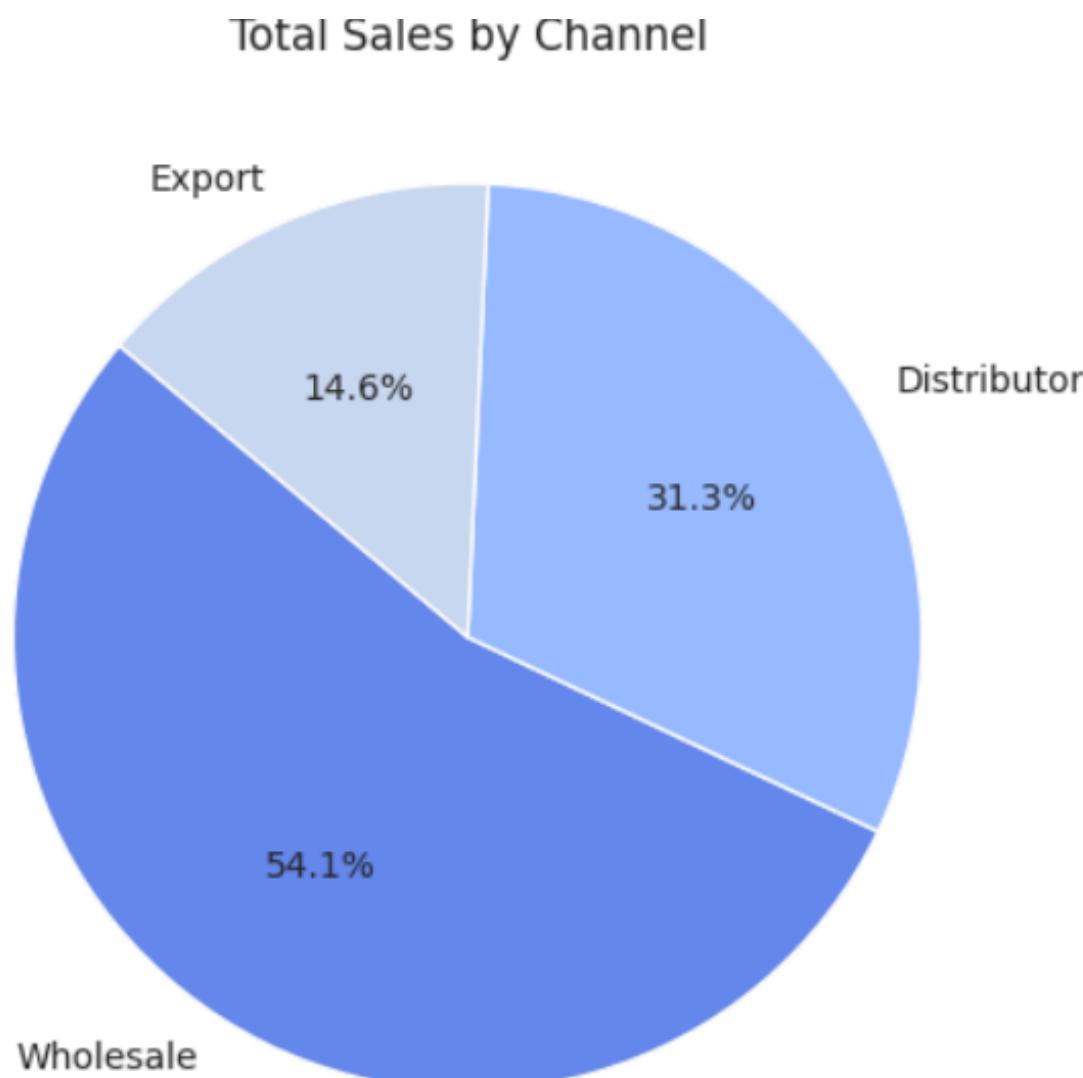
- Revenue leaders: Products 26 & 25 dominate.
- Mid-range: Products 5, 13, 14, 15 show similar revenue.
- Bottom cluster: Products 1, 2, 3, 4 have the lowest revenue.
- Strategy: Grow mid-tier, improve lower performers.

Top 10 Products by Average Profit Margin



- Top: Products 18 & 28 lead at ~\$8.1–8.4K.
- Next tier: Products 5, 11, 12 & 26 at ~\$7.5–7.8K.
- Entry-level: Products 1, 4, 16 & 21 around \$7.3K.
- Takeaway: Top 10 all exceed \$7.3K—consistent high margins.

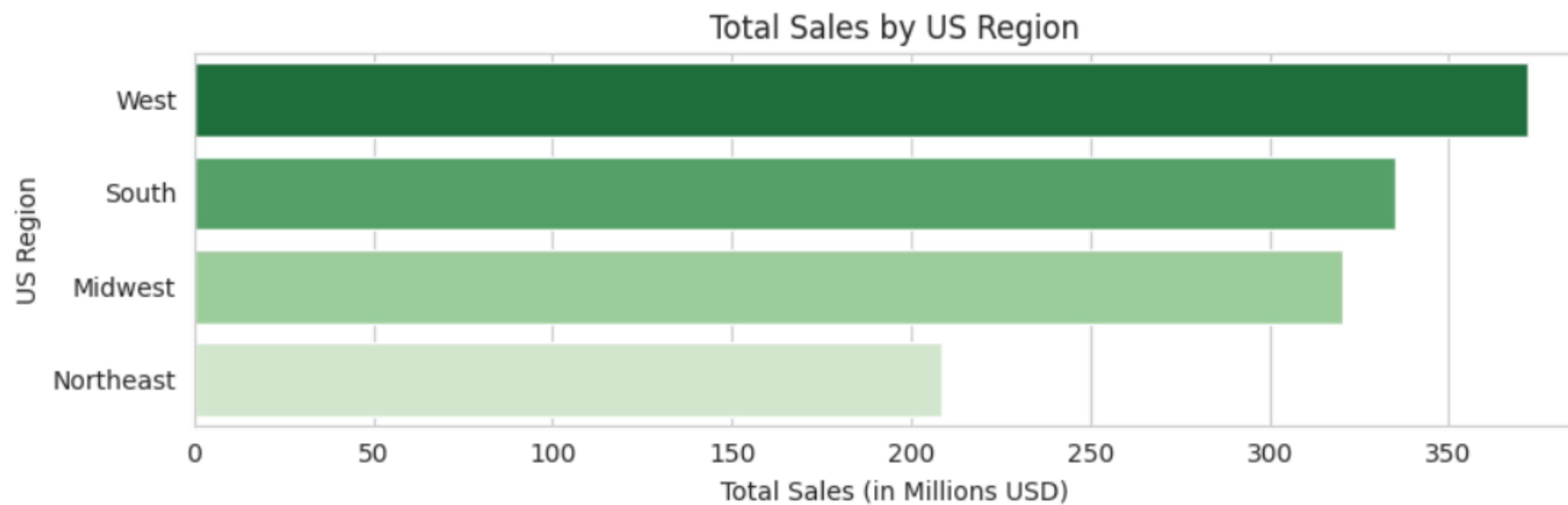
Sales by Channel



Insights

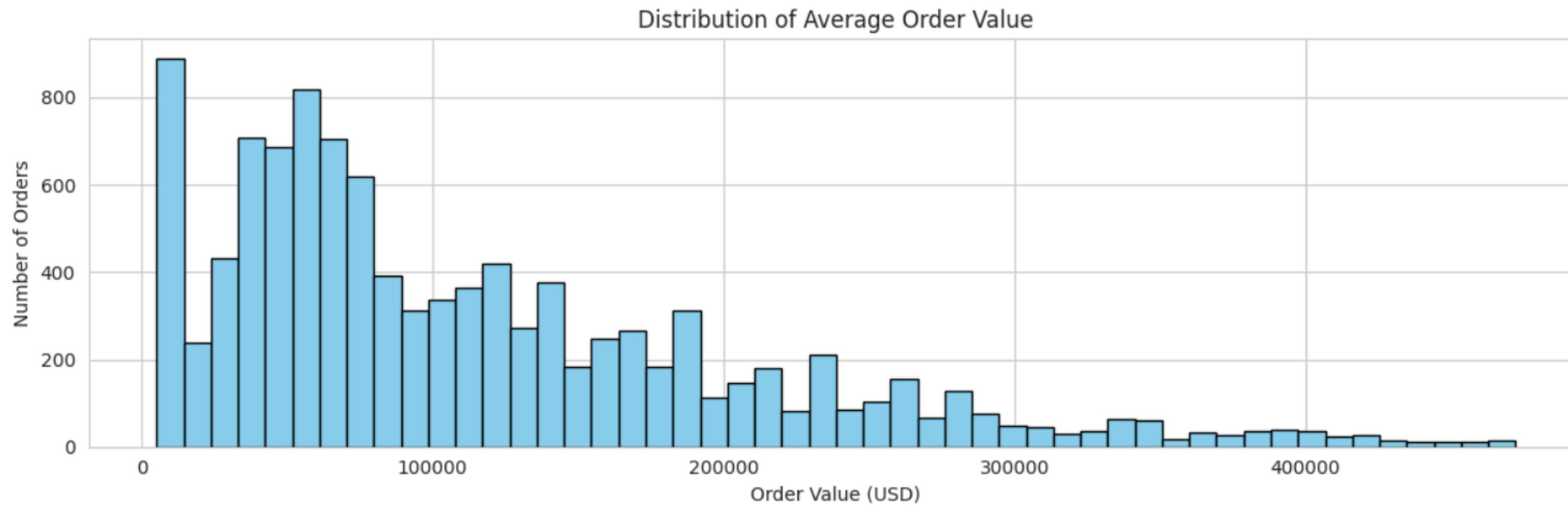
- Wholesale dominates: Generates the majority of total sales at 54.1%.
- Distributor is significant: Contributes a substantial 31.3% to total sales.
- Export is a smaller portion: Accounts for 14.6% of the total sales.

Total Sales by US Region



- ## Insights
- West: Highest sales, strong market influence.
 - South: Major sales contributor, key market area.
 - Midwest: Steady sales performance, moderate market size.
 - Northeast: Lowest sales, suggests need for deeper market understanding.

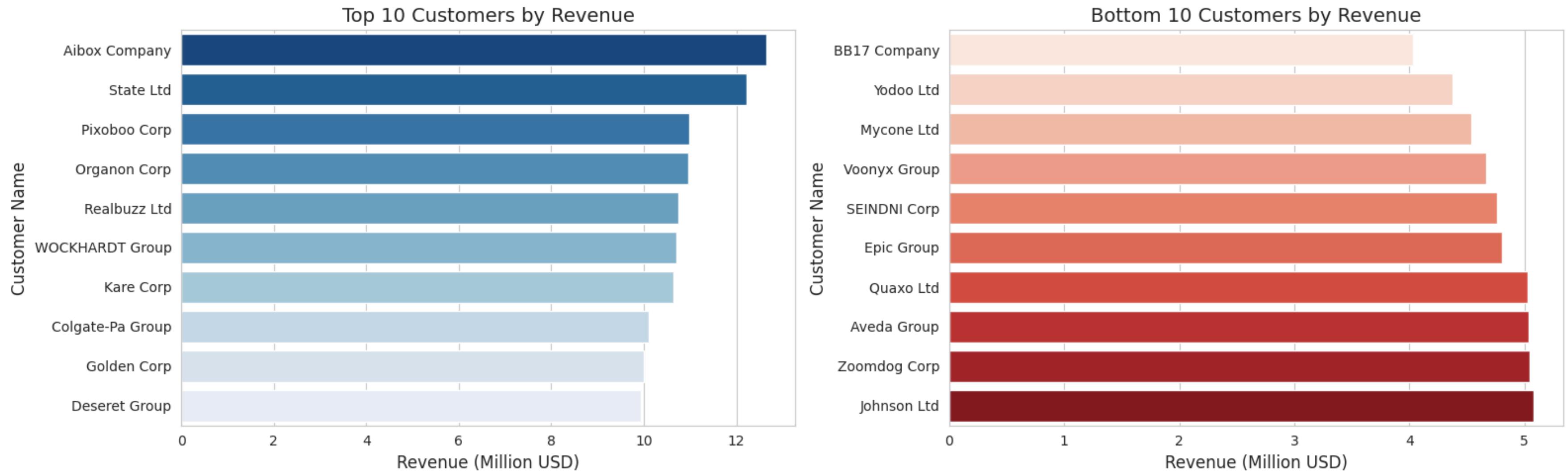
Average Order Value (AOV) Distribution



Insights

- Low average order values are frequent.
- Distribution is right-skewed (long tail of high-value orders).
- Multiple order value clusters exist.
- Higher order values are less common.

Top and Bottom 10 Customers by Revenue



- Aibox Company leads significantly as the top revenue generator.
- Bottom 10 customers generate substantially less revenue (around \$4-5M).
- Revenue concentration: Top customers drive a disproportionate share.
- Large gap: Exists between the revenue of top and bottom tier customers.



Key Insights

Key Insights



- Pronounced Seasonality: January revenues average \$124M, dipping to \$95M in April.
- SKU Concentration: Products 26 & 25 together drive ~25 % of total sales.
- Channel Trade-Off: Wholesale captures 54 % of volume; Export leads with ~38 % average margin.
- Geographic Dominance: California alone logs 7.6K orders (\$230M); the West region shows the largest swings.
- Aibox Company and State Ltd are the most valuable customers in terms of Revenue.



Dashboard Preview

Page 1 – Dashboard Overview

Regional Sales Dashboard

Overview

Product/Channel Performance

Geographical Insights

Q & A

Page 2 - Performance Summary

Sales dashboard · Last saved: Today at 2:14 PM

Search

Sign in

Share

File Home Insert Modeling View Optimize Help

New page ▾ New visual More visuals ▾ Key influencers Decomposition tree AI visuals Paginated Power report Apps Automate Power Platform Text box Buttons Shapes Image Elements Sparklines

Executive Overview & Trends Product & Channel Performance Geographic & Customer Insights

1.24bn Total Revenue 461.8M Total Profit 37.36 Profit Margin (%) 64.1K Total Orders 19.3K Revenue Per Order

Monthly Revenue

120M
100M
January February March April May June July August September October November December

Monthly Profit

50M
40M
January February March April May June July August September October November December

Unit Price Vs Profit Margin

60
40
20
0K 1K 2K 3K 4K 5K 6K 7K

Order Value Spectrum

OrderValue (bins) 5025 15408.21... 25791.42... 36174.64 46557.85... 56941.06... 0.0M 0.2M 0.4M

Pages Visuals DAX TMDL

Filters Visualizations Data

Search

budget channel \sum cost county customer_name \sum lat \sum lon order_date order_month order_month... \sum order_month... order_number product_name \sum profit \sum profit_margin... \sum quantity \sum revenue state state_name Total Orders \sum total_cost \sum unit_price us_region

Home Executive Overview Product & Channel Performance Geographic & Customer Insights +

Page 2 of 4

33

9+ Trending videos The Day My Do...

Search

83%

ENG IN 8:53 PM 11/15/2025

Page 3 – Product/Channel Performance

Sales dashboard • Last saved: Today at 1:37 PM ▾

Search

Sign in

File Home Insert Modeling View Optimize Help

Cut Copy Format painter Paste Clipboard

Get data workbook catalog OneLake SQL Enter Data Refresh Recent sources Data Transform data New visual Text box More visuals Insert Calculations Sensitivity Share Copilot

New visual calculation New measure Quick measure Sensitivity Publish Prep data for Copilot AI

Executive Overview Product & Channel Performance Geographic & Customer Insights

Revenue Champions- Best Selling Products

Product	Revenue
Product 26	117M
Product 25	109M
Product 13	78M
Product 14	75M
Product 5	71M
Product 15	67M
Product 2	57M
Product 4	57M
Product 1	56M
Product 3	52M

High Margin Products

Product	Margin
Product 9	40
Product 30	39
Product 28	39
Product 7	39
Product 21	39
Product 18	38
Product 1	38
Product 16	38
Product 29	38
Product 25	38

Channel - Where the revenue comes from

Profit Pipeline by Channel

Channel Efficiency- Margin Per Sale

Visualizations

Data

Search

Custom measures

Order_Value_Distributi...

Sales_data(EDA Export...)

34

Page 3 of 4

Air: Poor Next Tuesday

83%

1:42 PM

ENG IN

11/16/2025

Page 3 - Customer Insights & Revenue Scenarios

Sales dashboard · Last saved: Today at 2:14 PM ▾

Search

Sign in

Share

File Home Insert Modeling View Optimize Help

New page ▾ New visual More visuals Key influencers Decomposition tree Narratives Paginated Power report Apps Automate Power Platform Text box Buttons Shapes Image Elements Sparklines

Pages Visuals AI visuals

Executive Overview Product & Channel Performance Geographic & Customer Insights

Top 5 Customers by Revenue

Customer Name	Revenue
Aibox Company	13M
State Ltd	12M
Pixoboo Corp	11M
Organon Corp	11M
Realbuzz Ltd	11M

Bottom 5 Customers by Revenue

Customer Name	Revenue
SEINDNI Corp	4.8M
Voonyx Group	4.7M
Mycone Ltd	4.5M
Yodoo Ltd	4.4M
BB17 Company	4.0M

Top 5 State by Revenue

State	Revenue
California	229M
Illinois	111M
Florida	90M
Texas	84M
New York	56M

Total Revenue by Region

Profit Margin % by Region

Total Profit by State

Filters

Visualizations

Data

Search

budget
channel
 \sum cost
county
customer_name
 \sum lat
 \sum lon
order_date
order_month
order_month...
 \sum order_month...
order_number
product_name
 \sum profit
 \sum profit_margin...
 \sum quantity
 \sum revenue
state
state_name
Total Orders
 \sum total_cost
 \sum unit_price
us_region

Home Executive Overview Product & Channel Performance Geographic & Customer Insights +

Page 4 of 4

9+ 17°C Clear

Search

8:54 PM 11/15/2025

ENG IN

Conclusions



- Completed end-to-end EDA and interactive Power BI dashboard, surfacing seasonality, SKU, channel & regional insights.
- Insights inform sales policies and operational planning (store & warehouse prep aligned with annual trends).
- Stakeholders can self-serve real-time analysis and confidently onboard new datasets for additional use cases.

Thank You

