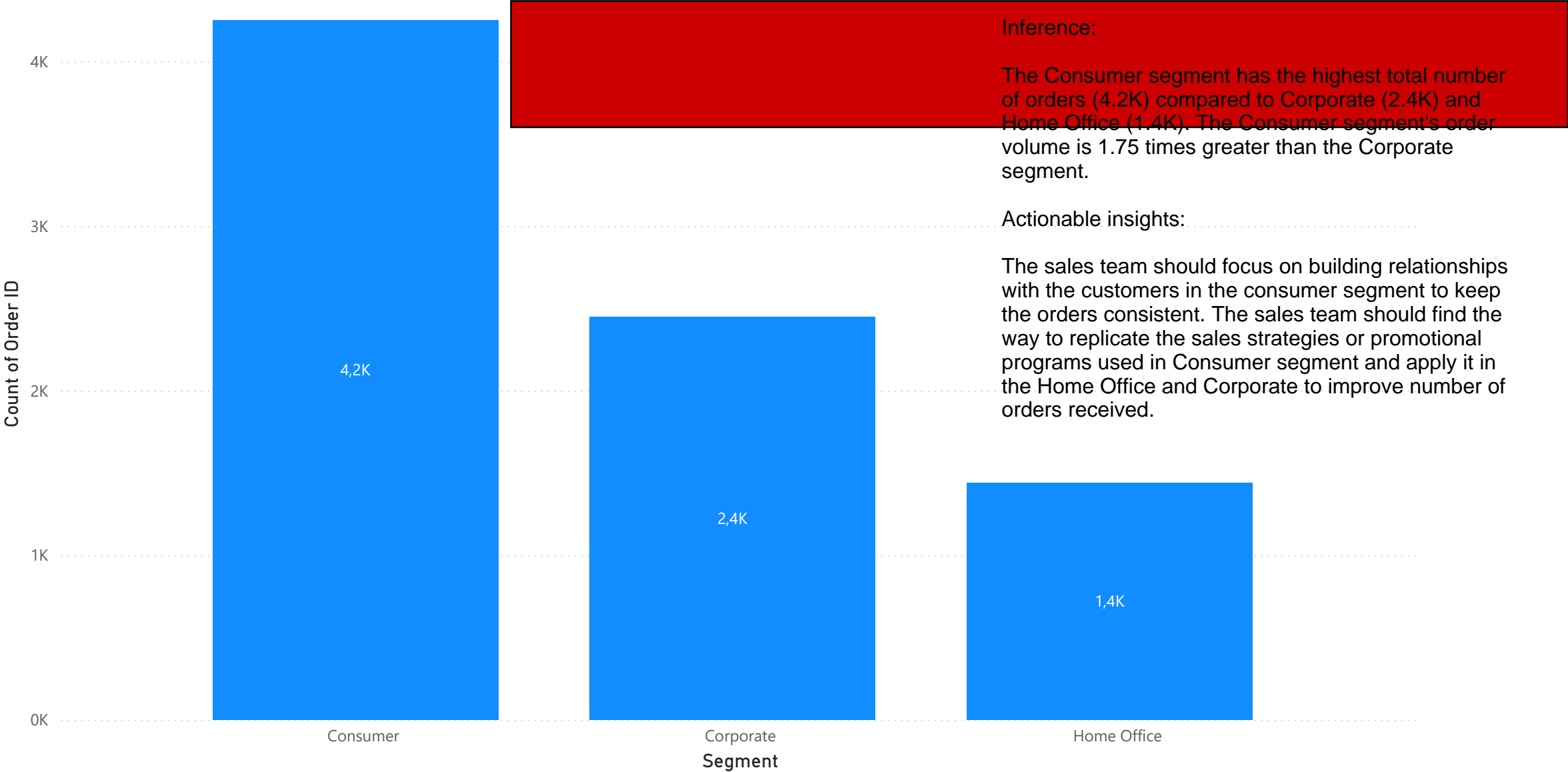


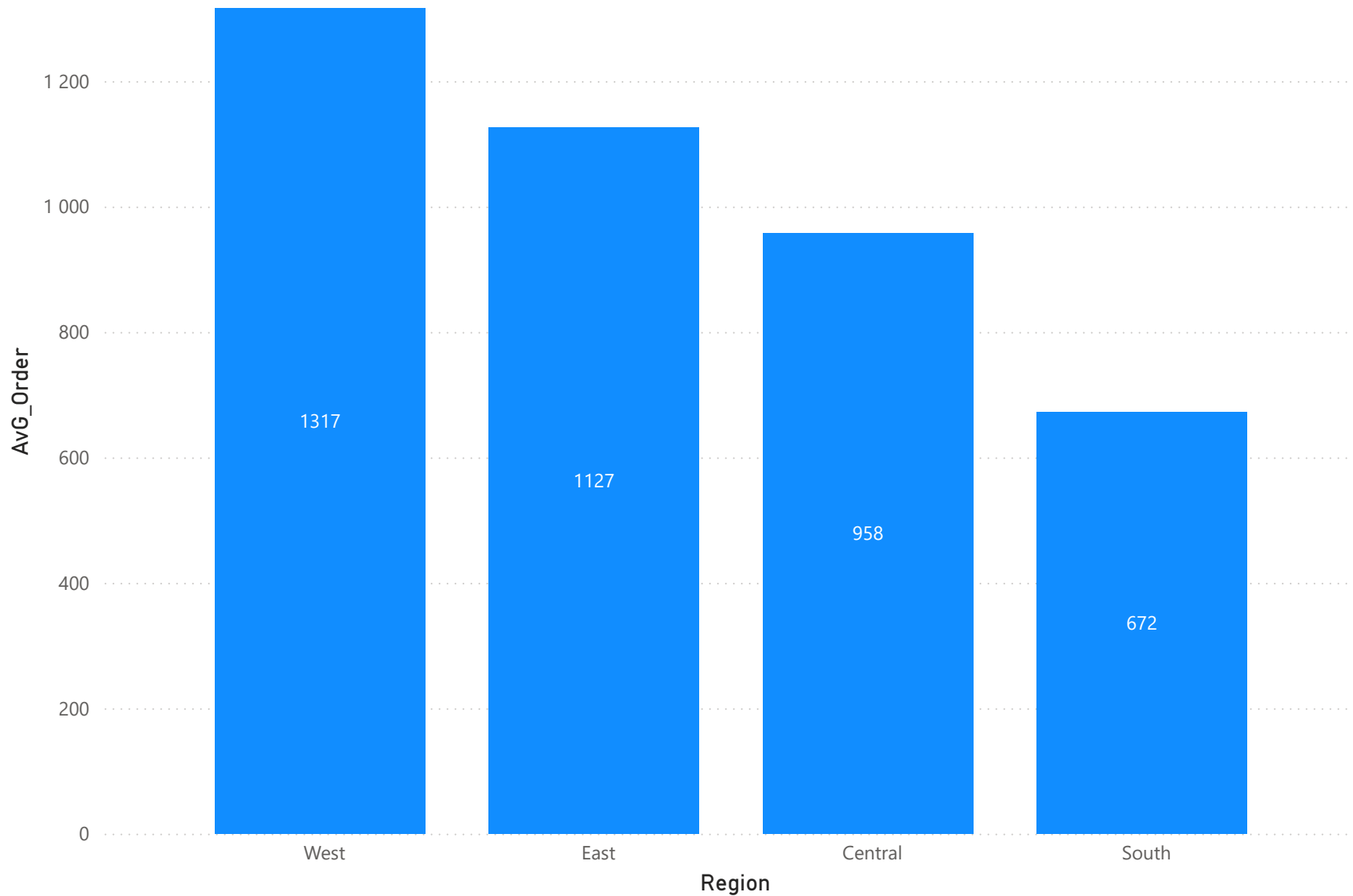
## **Connect to the 'Sales Info' dataset and perform the following in Power BI.**

1. Transform and clean the dataset as necessary.
2. Remove the 'Ship Date' and 'Country' columns.
3. Load the data sheet into Power BI.
4. Create comprehensive reports to show the following insights:
  - The total number of orders per segment.
  - Average number of orders per region.
  - Average sales per region
  - Overall sales per category.
  - Overall sales per state using the Card visualization and a Slicer.
  - The year and quarter in which the business sold the most products?
  - The contribution of each segment to the sales.
  - The category with the most units sold in 2015, 2016, 2017 and 2018.
  - The mostly used shipping mode per year, indicating the number of products shipped using the available shipping modes.
  - The state with the most customers.
  - Average units sold per state.
  - Total costs per category and sub-category.
  - Total quantity per category and sub-category.
  - Total sales per category and sub-category.
5. Given the following targets per state per year, create reports that indicate the position of the business against its targets:
  - Sales: Minimum \$10,000 and target \$30,000
  - Units Sold: Minimum 500 and target 30,000 if maximum units for sale is 40000.

# Total Number Of Orders Per Segment



## Average number of orders per region



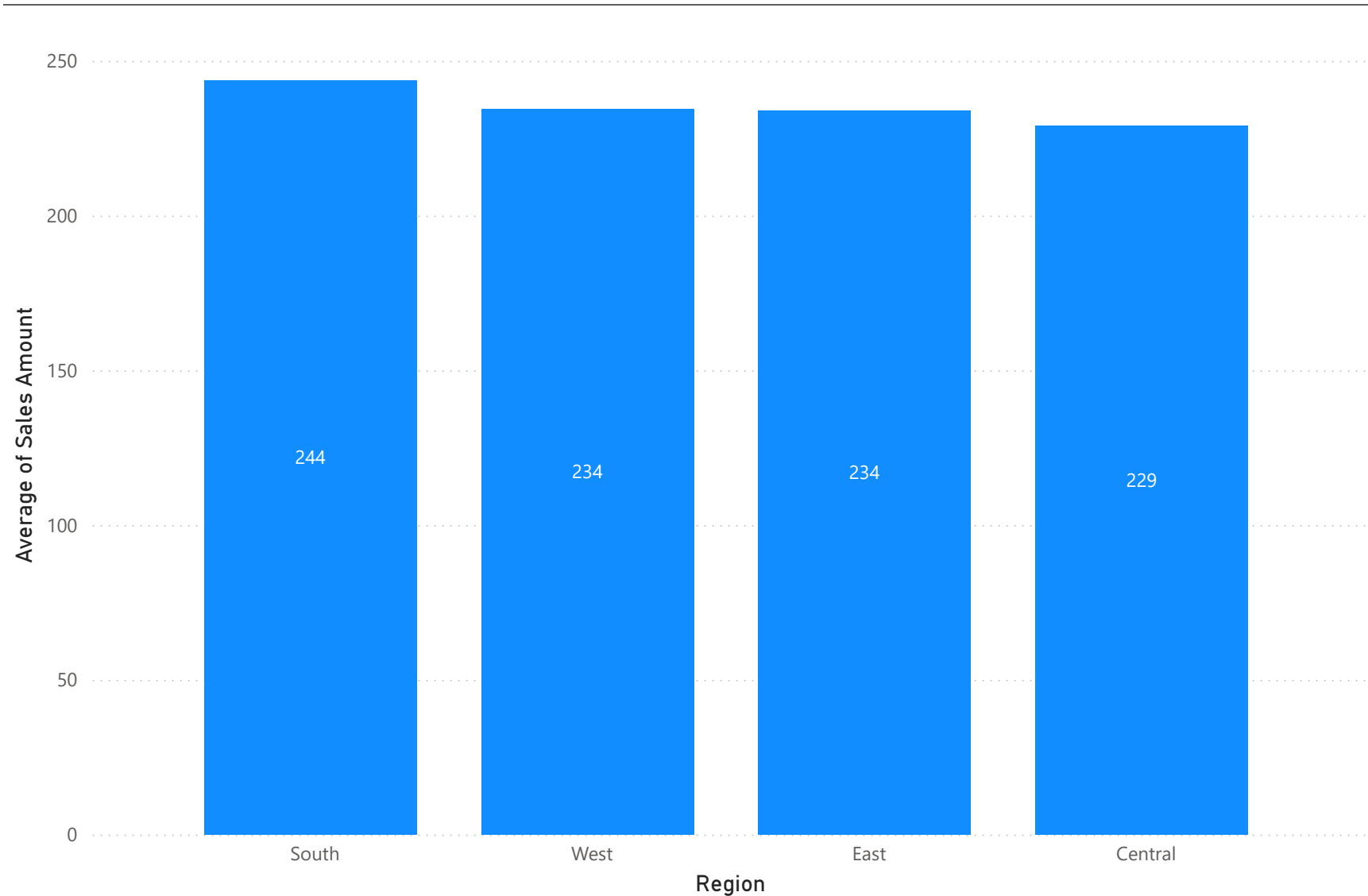
### Inference:

The West region has the highest average number of orders (1317), suggesting a higher volume of customer activity compared to other regions. The South region has the lowest average number of orders (672).

### Actionable Insight:

Conduct customer satisfaction surveys in the West and South regions to identify factors contributing to the difference in order volume and pinpoint areas for improvement in the South.

# Average sales per region



## Inference:

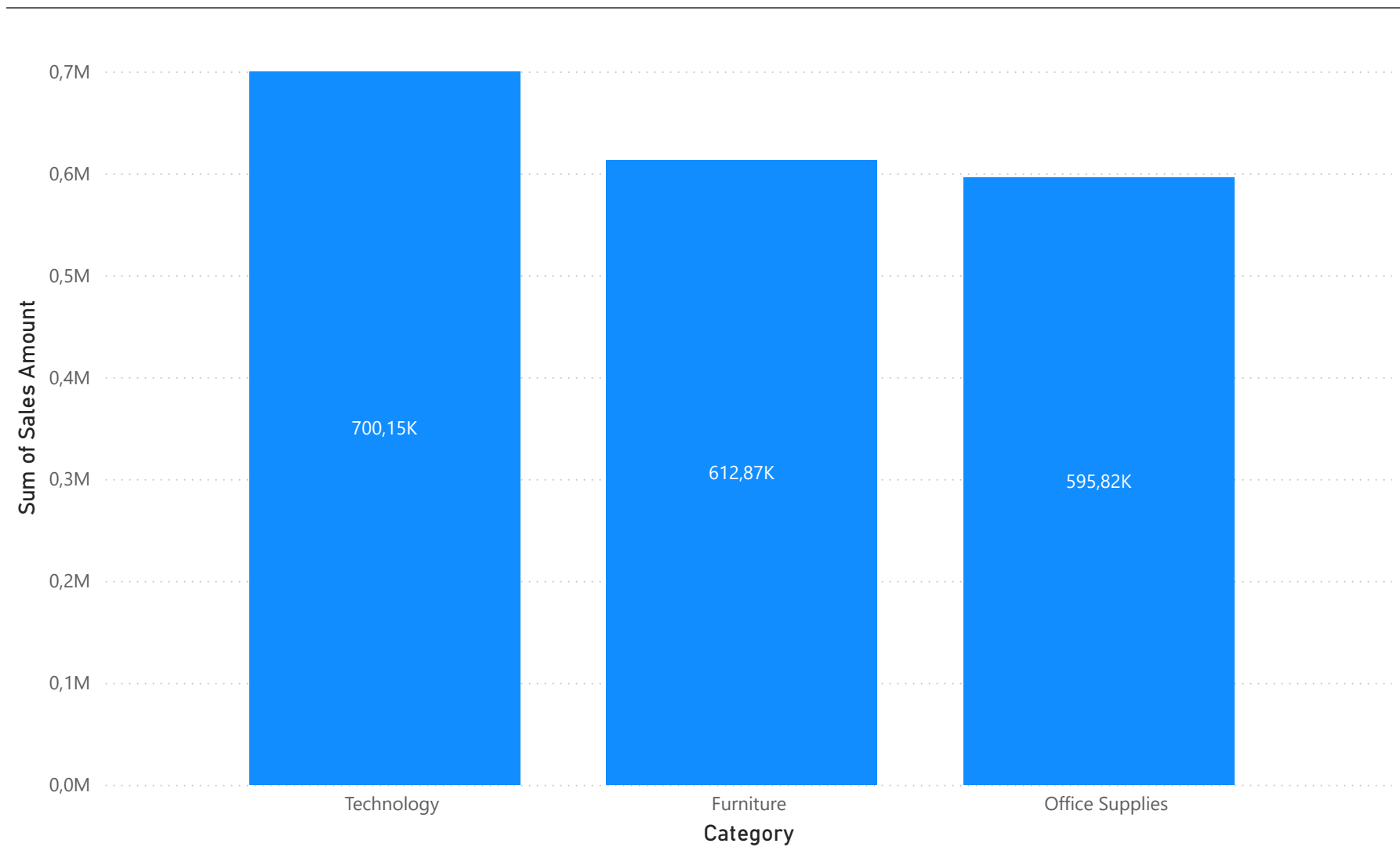
The South region exhibits a notable pattern: it has the lowest average order volume (672 orders), yet it leads in average sales amount (\$244). This suggests that while the South has fewer orders, the average transaction value is higher, possibly due to customers purchasing higher-priced items or in larger quantities.

Note: Potential outliers in the Sales Amount column, identified via IQR, could impact these results. See the Limitations section at the end.

## Actionable insights:

The sales team should investigate the specific high-value products popular in the South region. Targeted marketing campaigns in other regions, emphasizing these products' value and potentially offering bundled discounts, could attract new customers. Additionally, analyze the customer demographics and purchasing behavior in the South to better understand their preferences and replicate successful strategies in other regions.

# Overall sales per category



## Inference :

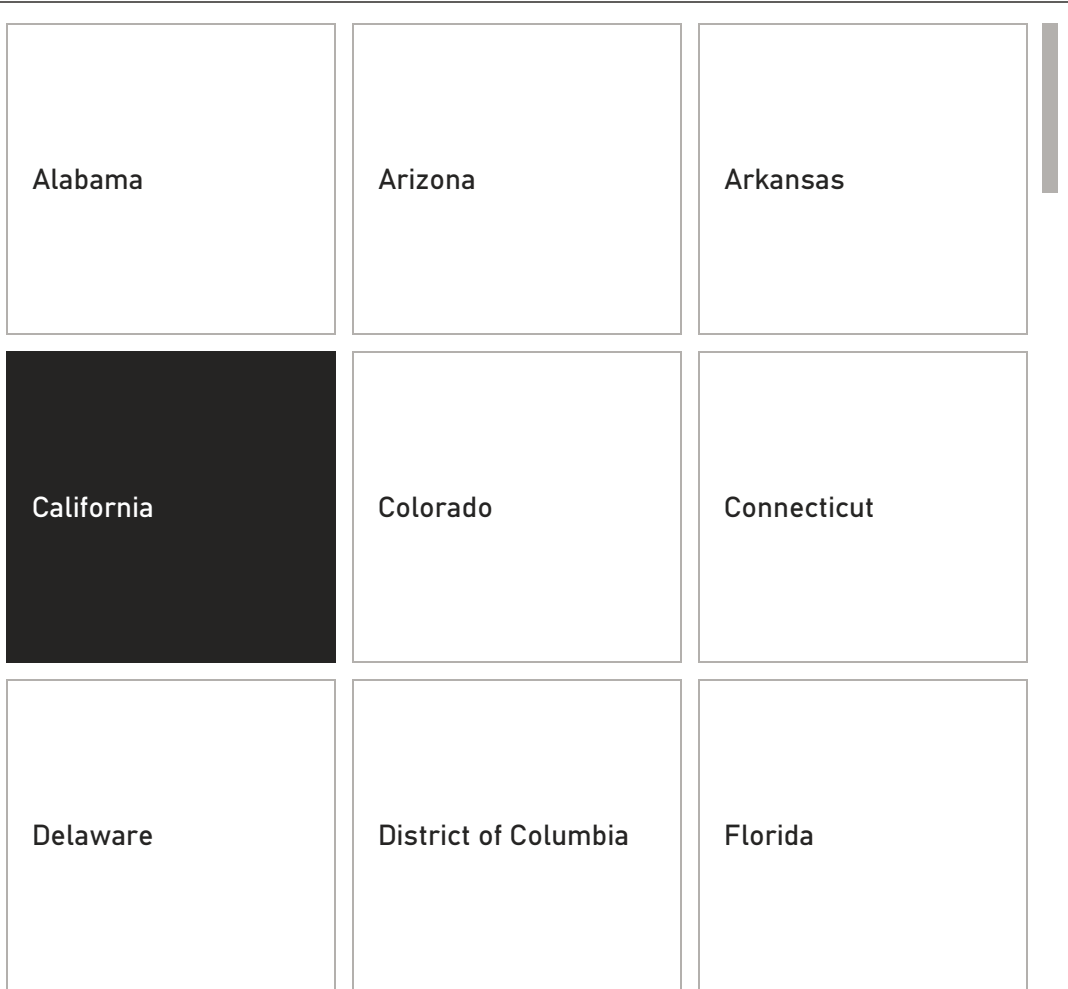
The Technology category leads in total sales amount (\$700.15K), followed by Furniture (\$612.87K) and Office Supplies (\$595.82K).

Note: Potential outliers in the Sales Amount column, identified via IQR, could impact these results. See the Limitations section at the end.

## Actionable Insight :

Analyze the product mix within the Technology category to identify top-selling items and consider increasing inventory or running promotions to capitalize on this demand. Also, investigate why Furniture and Office Supplies are lagging and if there are opportunities to improve sales in those categories.

# Sales per state



Inference:

Analyze the product mix within the Technology category to identify top-selling items and consider increasing inventory or running promotions to capitalize on this demand. Also, investigate why Furniture and Office Supplies are lagging and if there are opportunities to improve sales in those categories.

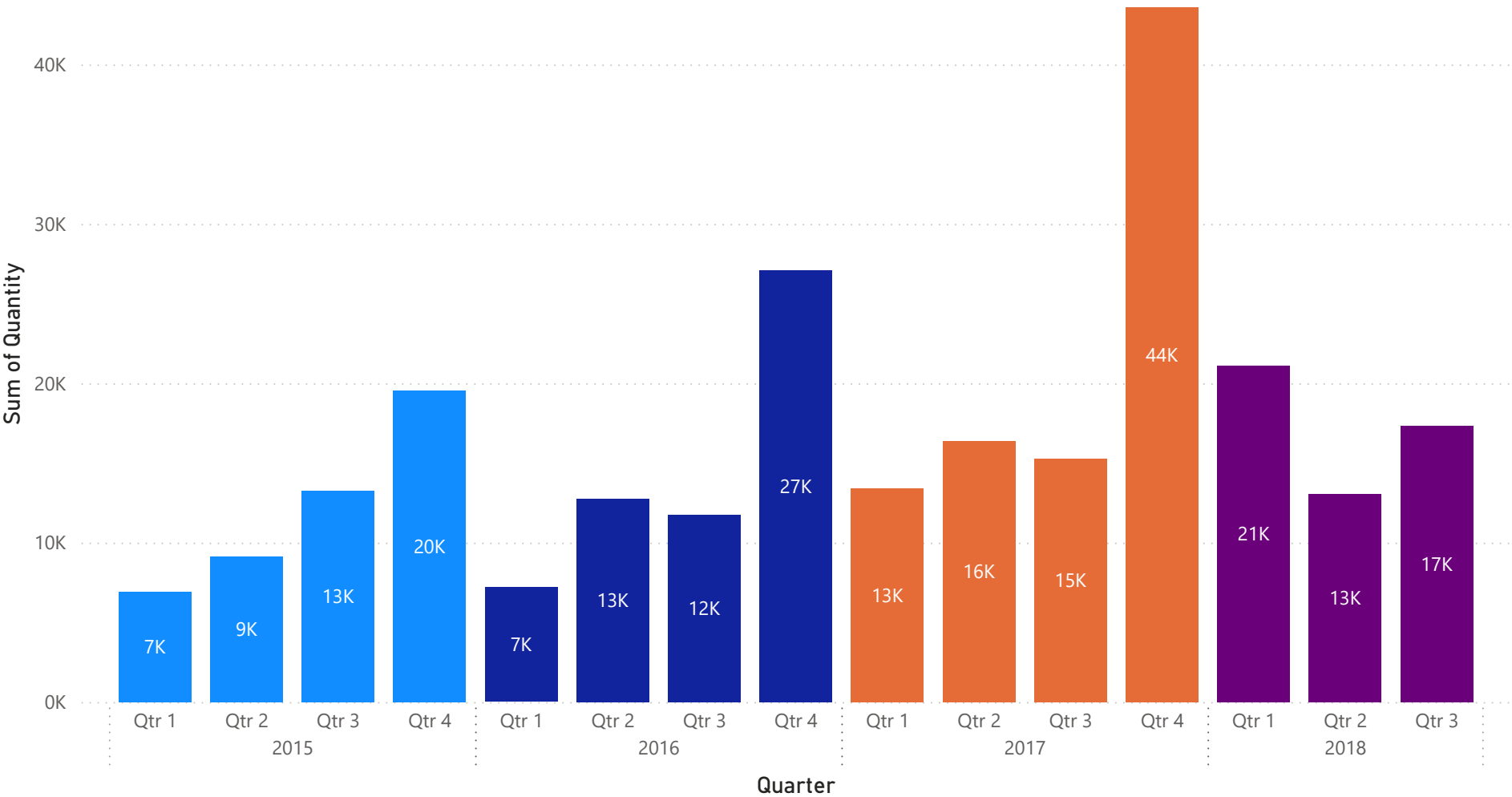
Actionable Insights:

Implement customer retention strategies, such as loyalty programs or exclusive offers, to maintain strong relationships with customers in California.

Investigate the sales strategies employed in California and adapt them for lower-performing states like North Dakota, South Dakota, and West Virginia. Consider factors like demographics, market size, and local competition when tailoring these strategies.

# Year and quarter in which the business sold the most products

Year ● 2015 ● 2016 ● 2017 ● 2018



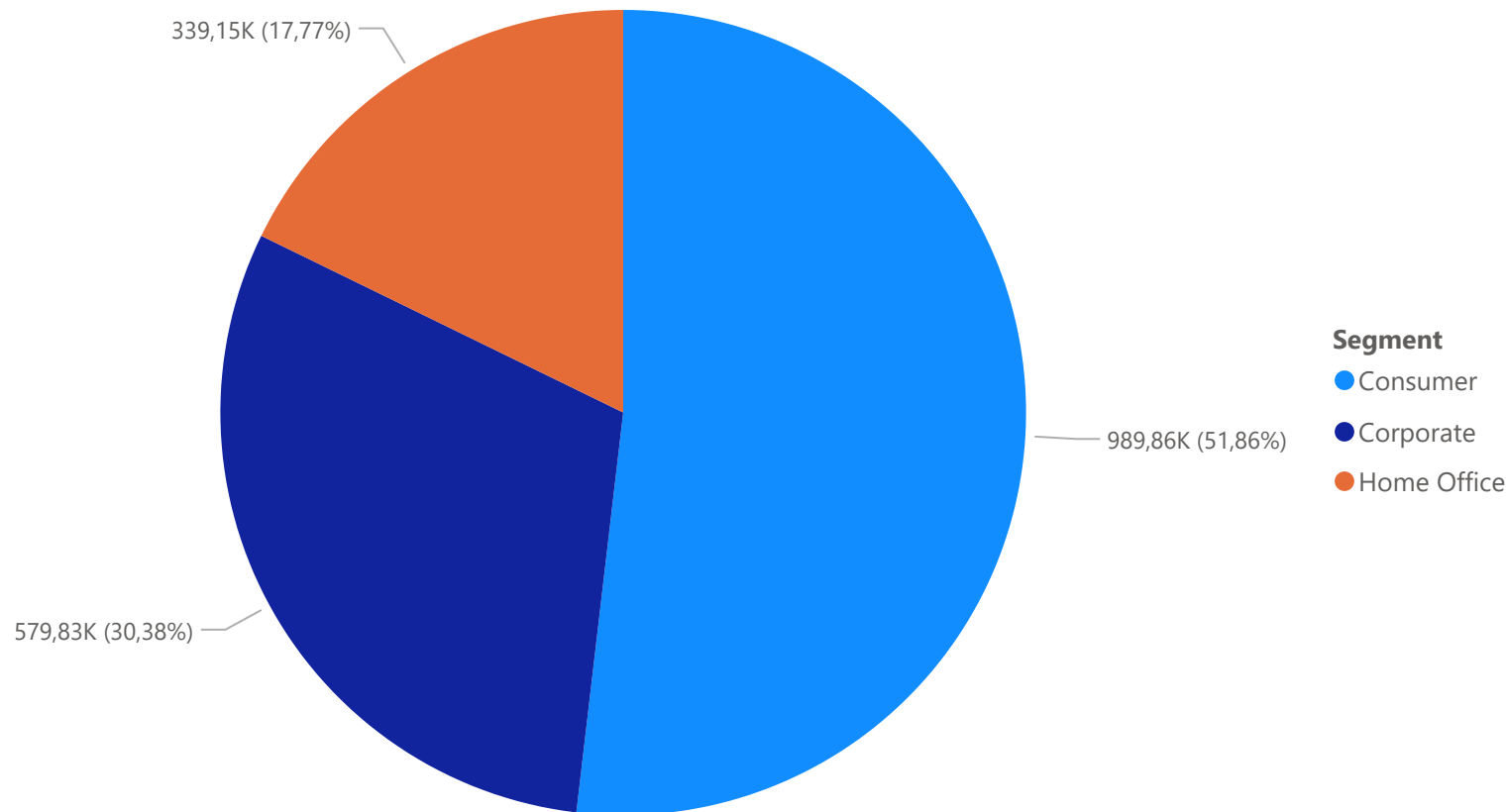
Inference :

The highest volume of product sales occurred in 2017, with Quarter 4 of 2017 showing the peak sales (44K units). A trend of increased sales in the fourth quarter is observable across multiple years.

Actionable Insights :

Implement targeted sales promotions in the first quarter to mitigate the typical sales dip and strive for more consistent sales performance throughout the year. Analyze the factors contributing to the Q4 surge to see if they can be replicated earlier in the year.

## The contribution of each segment to the sales.



Inference :

The Consumer segment contributes the largest share of sales (51.86%), while the Corporate segment accounts for 30.38% and the Home Office segment for 17.77%. While the Consumer segment leads in order volume, it's important to analyze the average order value across segments. The Home Office segment contributes the least to overall sales and also exhibits the lowest order volume.

Note: Potential outliers in the Sales Amount column, identified via IQR, could impact these results. See the Limitations section at the end.

Actionable insights:

Develop strategies to increase the average order value within the Consumer segment to maximize revenue potential, given their high order volume (eg. upselling )

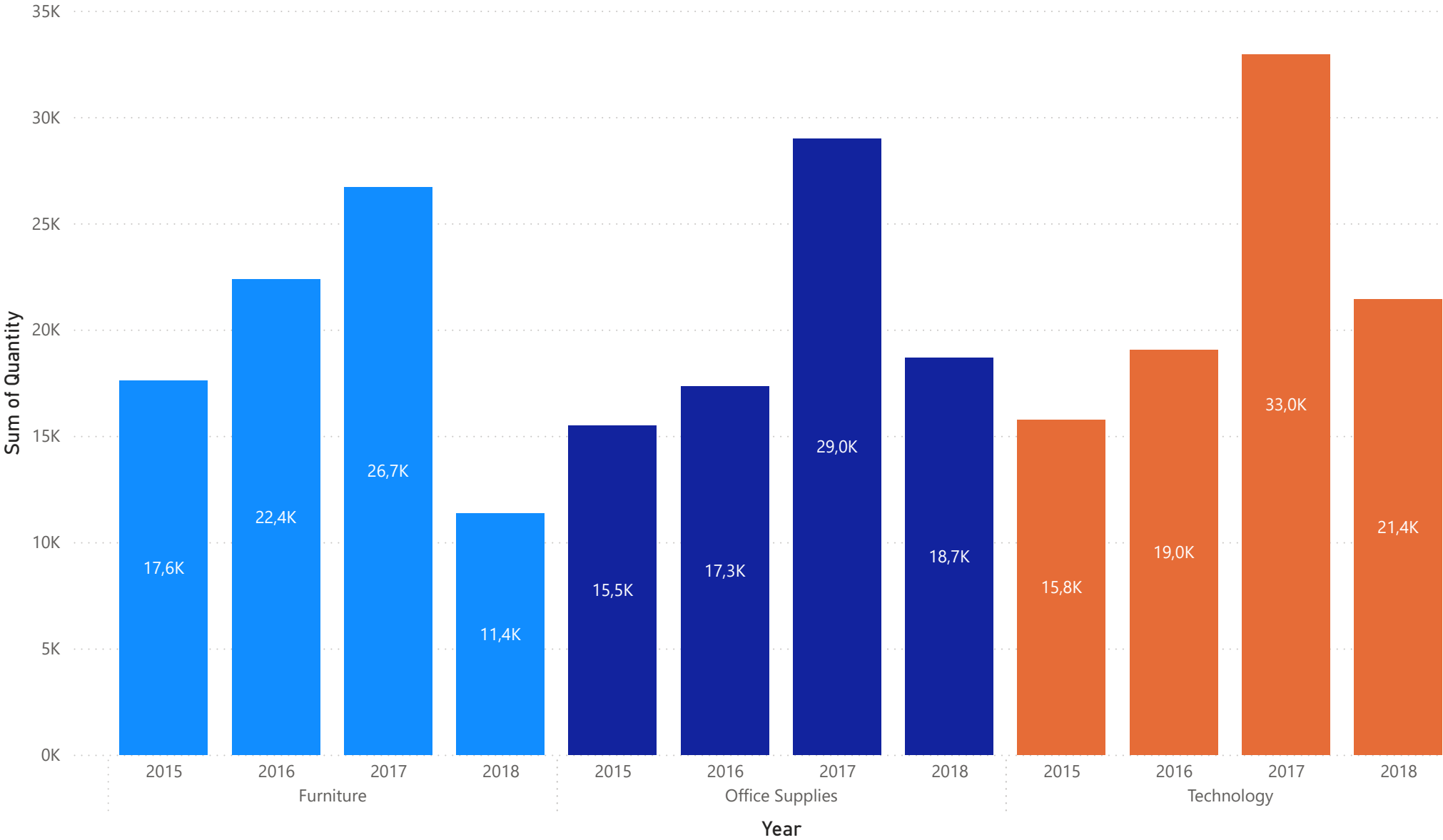
Investigate the specific needs and purchasing behavior of the Corporate segment to understand their lower order frequency but significant sales contribution. Tailor sales approaches accordingly.

Explore opportunities to grow the Home Office segment, potentially through targeted marketing or product offerings that cater to their unique requirements.



# Category with the most units sold in 2015, 2016, 2017 and 2018.

Category Furniture Office Supplies Technology



Inference :

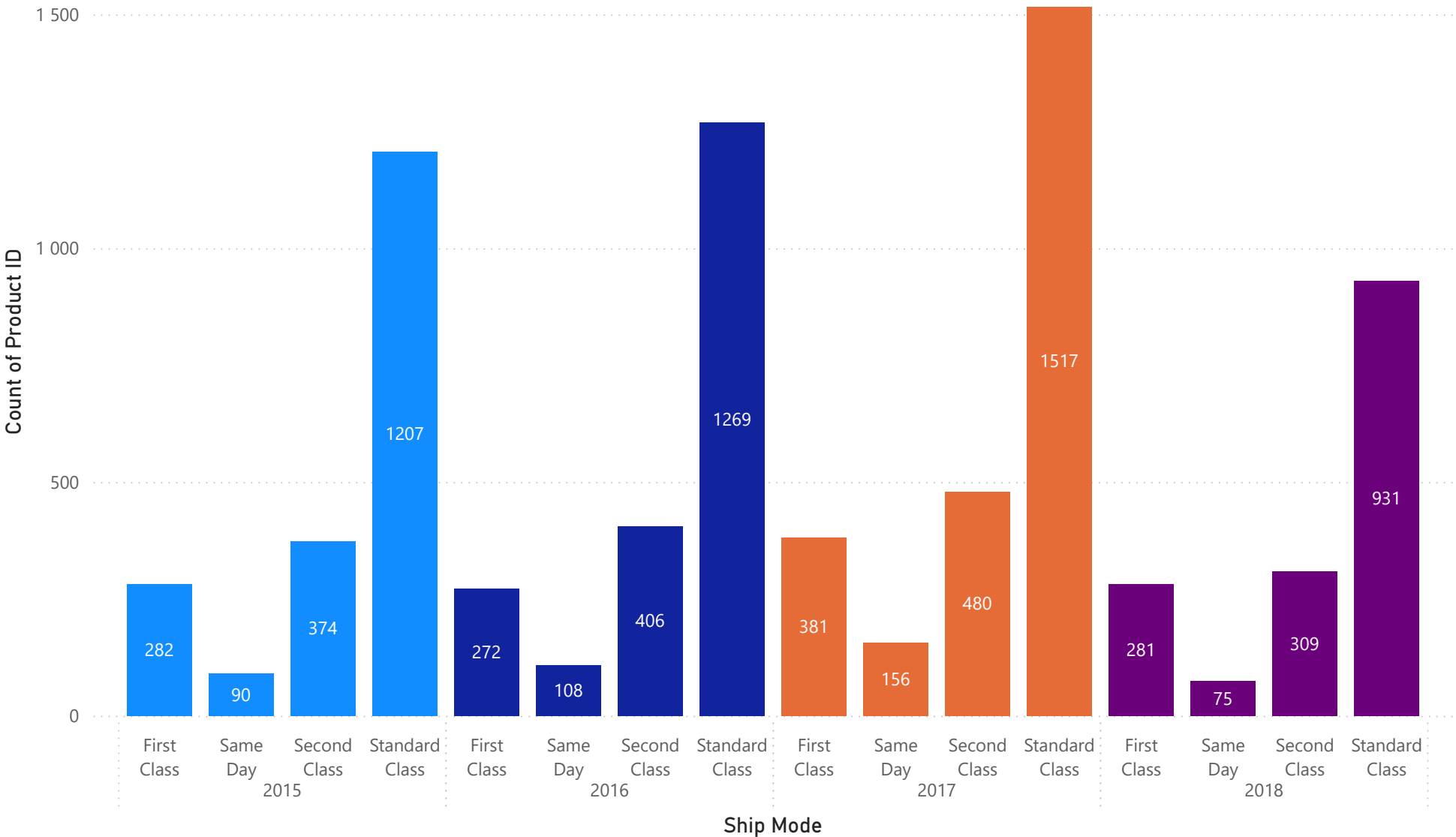
The Technology category has the highest overall unit sales, with 2017 and 2018 showing the highest sales figures across all categories. In 2016, Furniture led in unit sales, closely followed by Technology.

Actionable Insights :

Analyze the sales data from 2017 to identify the factors that contributed to the high unit sales (e.g., specific promotions, marketing campaigns, economic conditions). Replicate successful strategies from 2017, if applicable, and adapt them to current market conditions. Also, investigate why furniture was leading in 2016 and how it can be improved.

# Sum of Quantity by Ship Mode and Year

Year ● 2015 ● 2016 ● 2017 ● 2018



Inference :

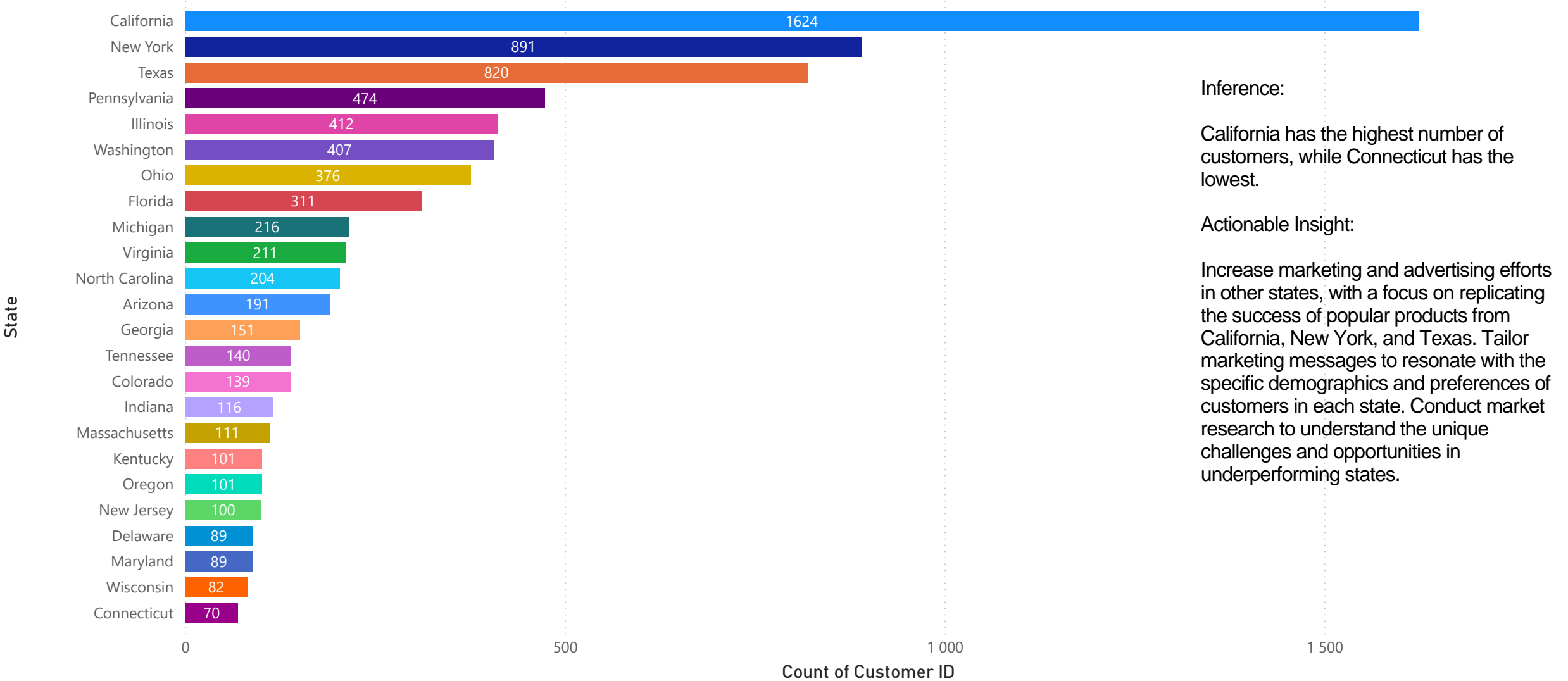
Standard Class is the most frequently used shipping mode across all years, indicating a strong preference for this option among customers.

Actionable Insights:

Investigate the reasons for the popularity of Standard Class shipping. Is it cost, speed, or reliability? Consider offering promotions or incentives for other shipping modes to diversify shipping options and potentially increase revenue (e.g., faster shipping for a premium price, discounts on slower shipping for cost-sensitive customers). Analyze shipping costs and delivery times for each mode to optimize pricing and service offerings.

# The state with the most customers

State California New York Texas Pennsylvania Illinois Washington Ohio Florida Michigan Virginia North Carolina Arizona Georgia Tennessee Colorado Indiana Massachusetts

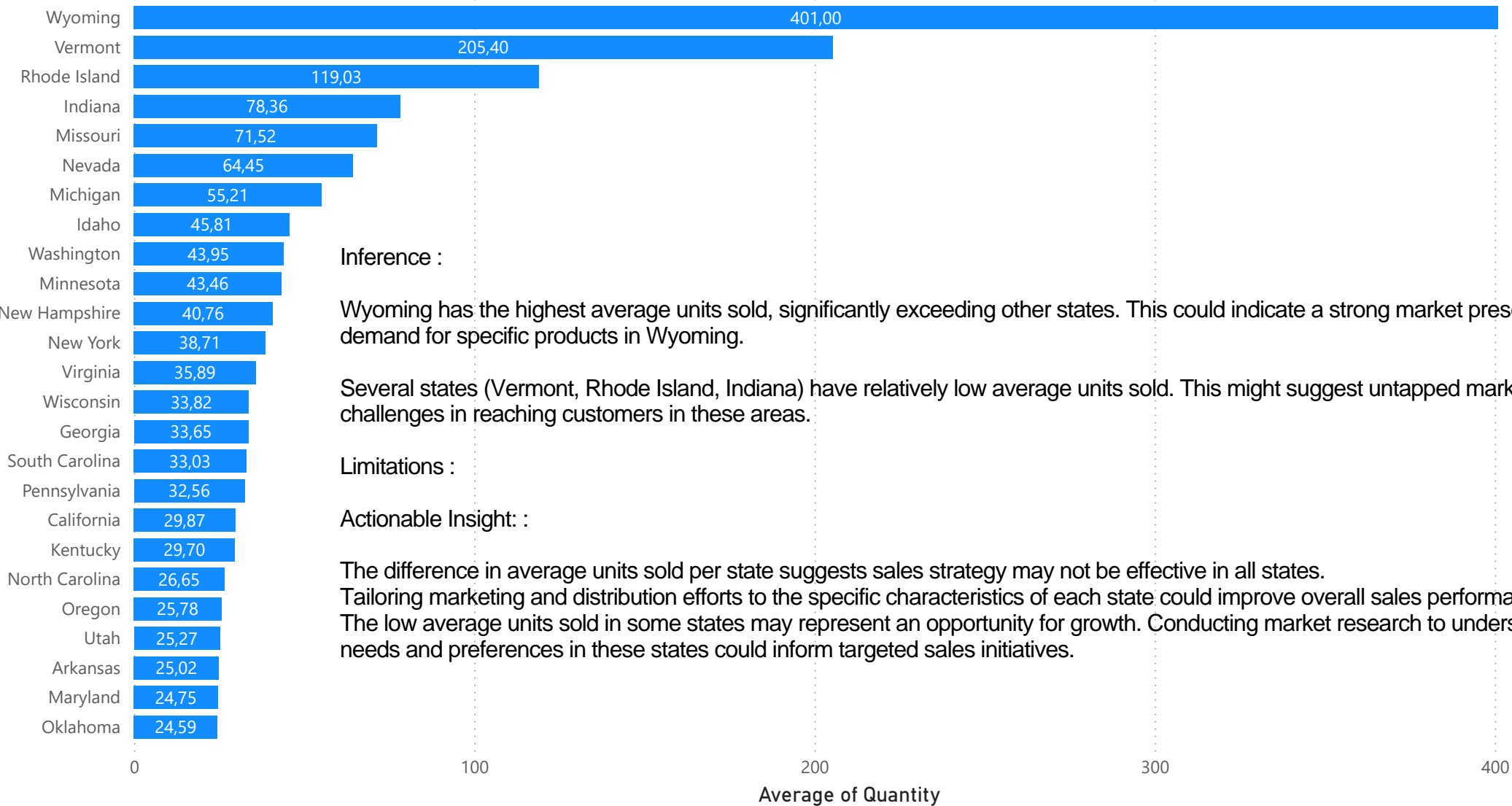


Inference:  
California has the highest number of customers, while Connecticut has the lowest.

Actionable Insight:  
Increase marketing and advertising efforts in other states, with a focus on replicating the success of popular products from California, New York, and Texas. Tailor marketing messages to resonate with the specific demographics and preferences of customers in each state. Conduct market research to understand the unique challenges and opportunities in underperforming states.

# Average units sold per state.

State



Inference :

Wyoming has the highest average units sold, significantly exceeding other states. This could indicate a strong market presence or high demand for specific products in Wyoming.

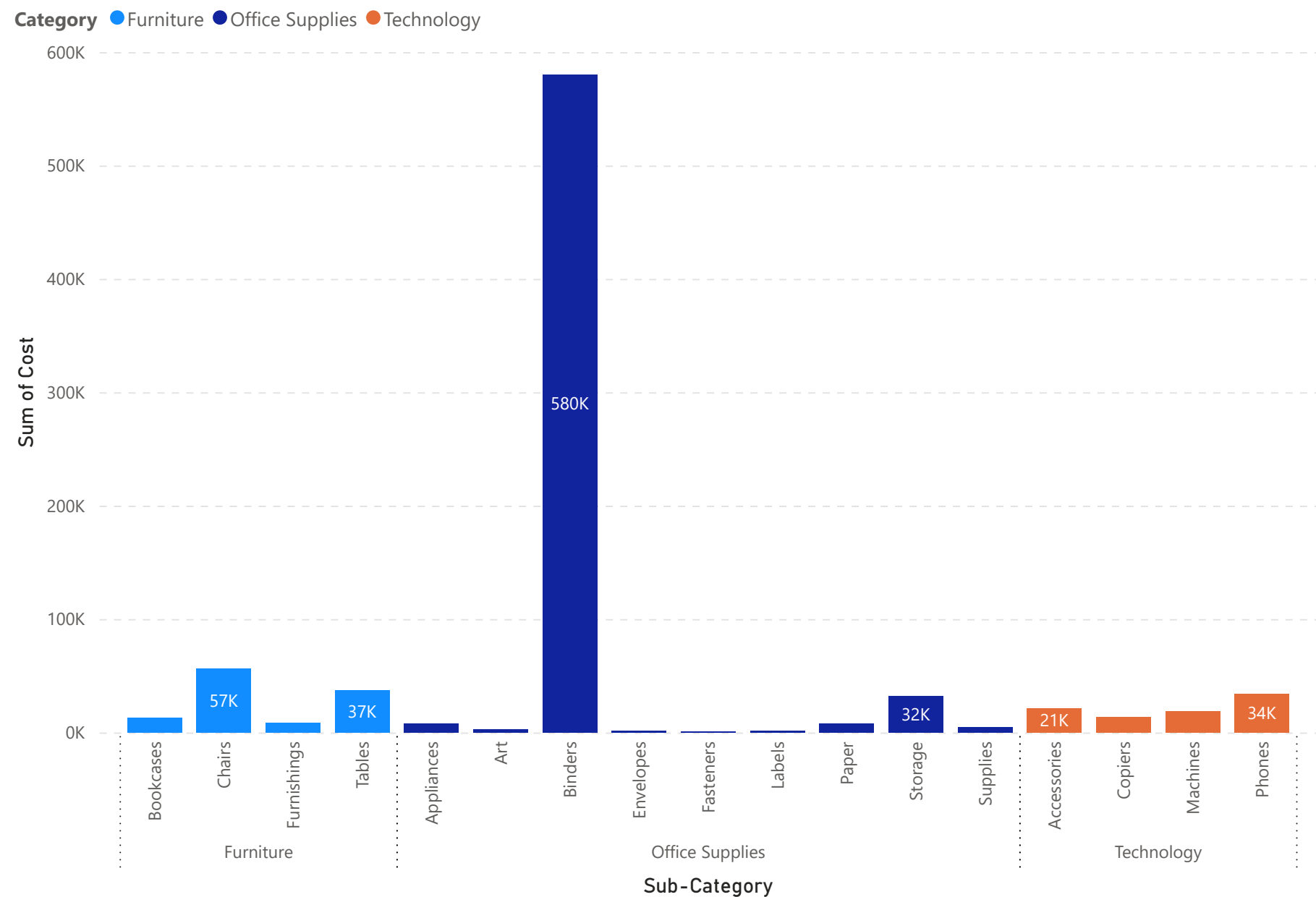
Several states (Vermont, Rhode Island, Indiana) have relatively low average units sold. This might suggest untapped market potential or challenges in reaching customers in these areas.

Limitations :

Actionable Insight: :

The difference in average units sold per state suggests sales strategy may not be effective in all states. Tailoring marketing and distribution efforts to the specific characteristics of each state could improve overall sales performance. The low average units sold in some states may represent an opportunity for growth. Conducting market research to understand customer needs and preferences in these states could inform targeted sales initiatives.

# Total costs per category and sub-category



## Inference :

Within the Furniture category, Chairs represent a significant portion of the total costs. This could be due to factors such as material costs, manufacturing complexity, or transportation expenses.

In the Office Supplies category, Binders contribute substantially to the overall costs.

For the Technology category, Phones and Machines appear to be major cost drivers.

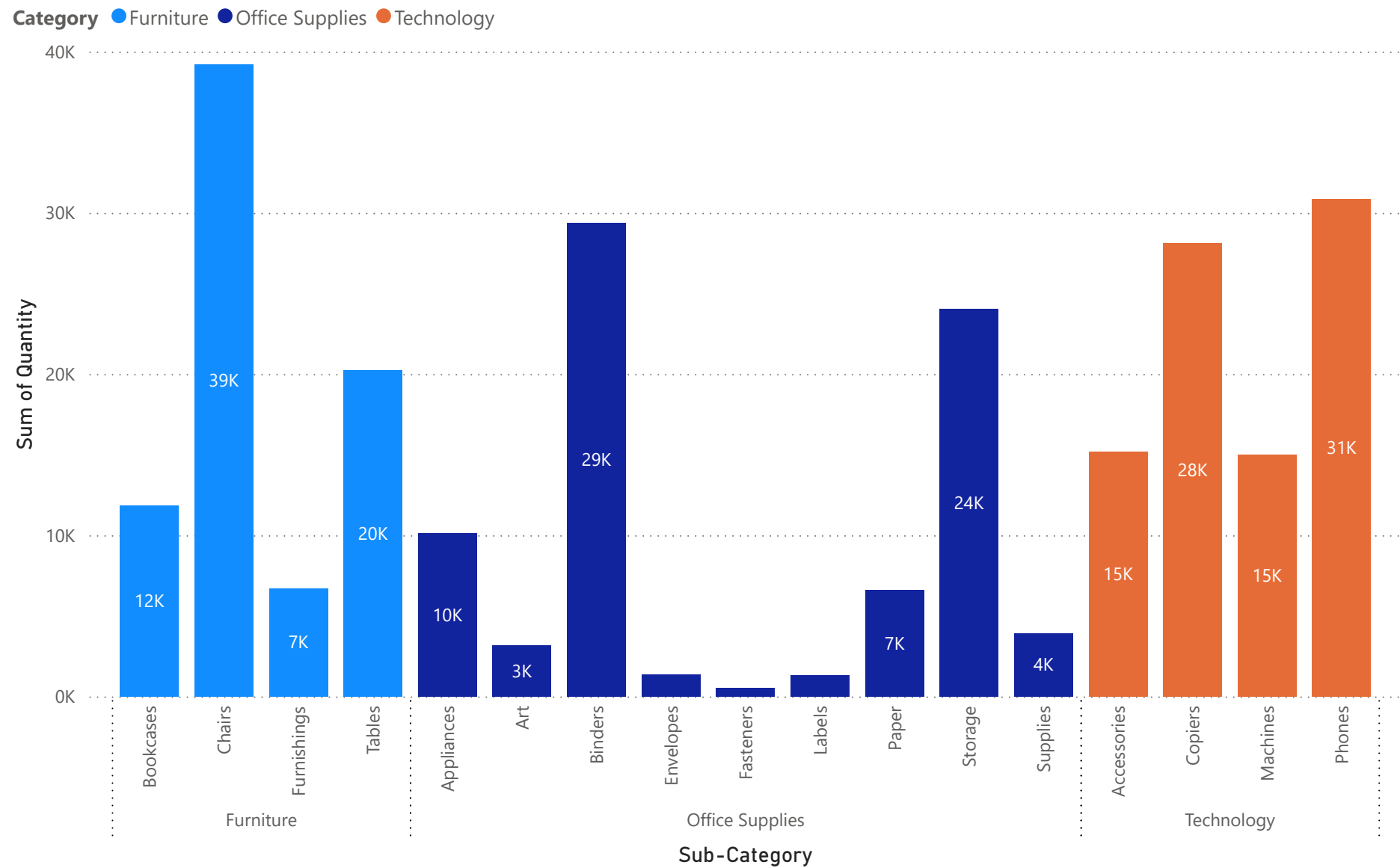
## Actionable Insight :

The high costs associated with Chairs, Binders, Phones, and Machines warrant further investigation. A detailed cost breakdown could reveal opportunities to negotiate better supplier prices, optimize production processes, or explore alternative materials.

Comparing cost structures across categories could inform strategic decisions about product focus. For example, if the Technology category has higher costs but also higher profit margins, it might be a strategic area for investment.

The data may need to be analyzed further for more correlations.

# Total quantity per category and sub-category.



Inference:

Chairs have the highest sales quantity within the Furniture category. This suggests strong demand for chairs, which could be due to their necessity or competitive pricing

Binders also have a high sales quantity within the Office Supplies category.

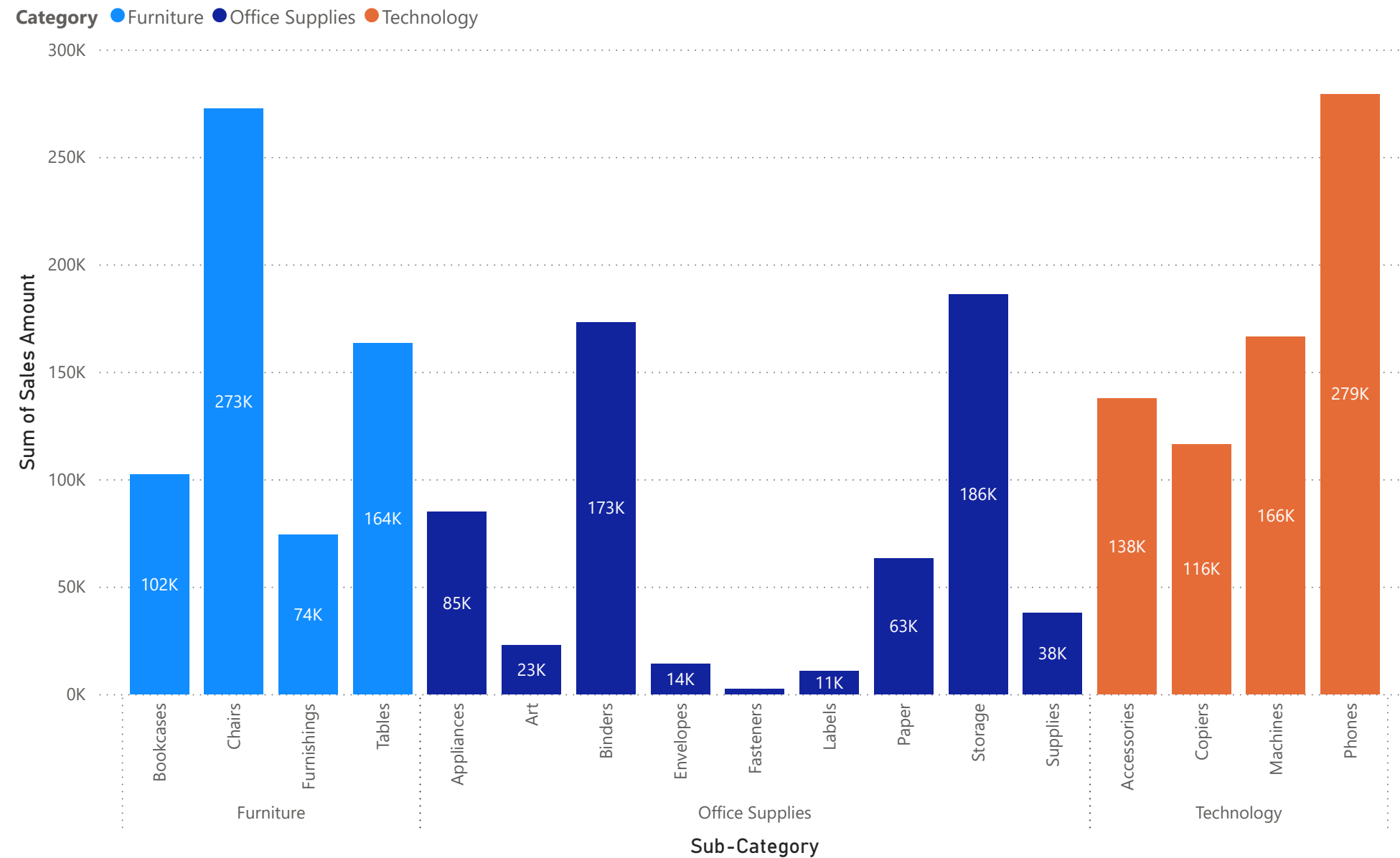
Phones and Accessories show significant sales volume in the Technology category.

Actionable Insights:

The high sales volume of Chairs, Binders, Phones, and Accessories suggests that these sub-categories are important revenue drivers. Ensuring adequate inventory and optimizing pricing strategies for these products is crucial.

Note : Comparing sales quantity with profit margins may also reveal sub-categories with high sales, but have lower profitability

# Total sales per category and sub-category.



Inference :

Chairs contribute substantially to the overall sales revenue within the Furniture category. which supports the observation I made in the previous graph where chairs was leading in sales.

Binders are an important revenue generator in the Office Supplies category.

Phones are a key revenue driver within the Technology category.

**Note:**  
This analysis is only focused on sales revenue. It's important to consider profit margin of each sub-category.

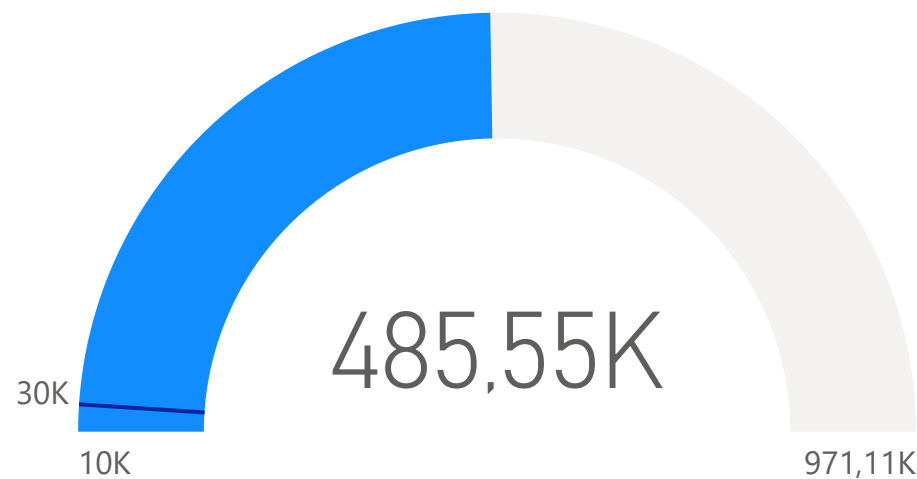
Moreover, Potential outliers in the Sales Amount column, identified via IQR, could impact these results. See the Limitations section at the end.

**Actionable Insights:**

The consistent contribution of Chairs, Binders, and Phones to both sales quantity and revenue highlights their importance to the business. Maintaining a strong product offering and effective marketing for these sub-categories is important.

Analyzing sales overtime would also help by revealing whether the revenue generated by these subcategories is growing, declining, or stable.

Sales: Minimum \$10,000 and target \$30,000



Select year to see how the business performed against its target

Year

2015

2015



Inference :

In the pre-selected year of 2015, the company not only met but significantly surpassed its sales target of \$30,000, achieving \$485.55K in sales. This indicates a strong performance in 2015.

The substantial overachievement suggests effective sales strategies, high demand for products, or favorable market conditions during that year.

The products that were selling the most in 2015 was the furniture with 17,6 k followed by Technology with 15.8k and Office supply with 15.5 k units sold that year (shown in one of the previous graphs).

Actionable insights:

Analyzing the performance against the \$30,000 target across all available years will provide a clearer picture of the company's overall sales trend and its ability to consistently meet its goals

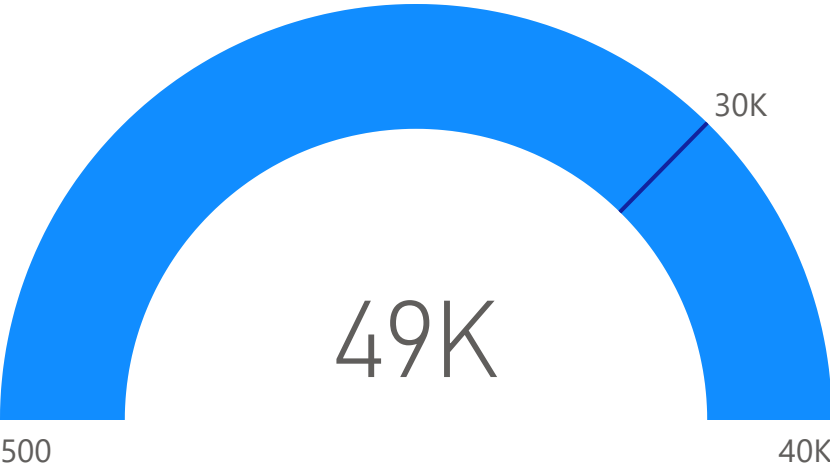
Note:

The report's interactivity allows for the analysis of performance against the same minimum and target for other years in the dataset. Open the actual project to see how the company performed against the target in the following years.

Moreover, Potential outliers in the Sales Amount column, identified via IQR, could impact these results. See the Limitations section at the end.



Units Sold: Minimum 500 and target 30,000 if maximum units for sale is 40000



Select year to see how the business performed against its target

Year ▼

☐ ☐

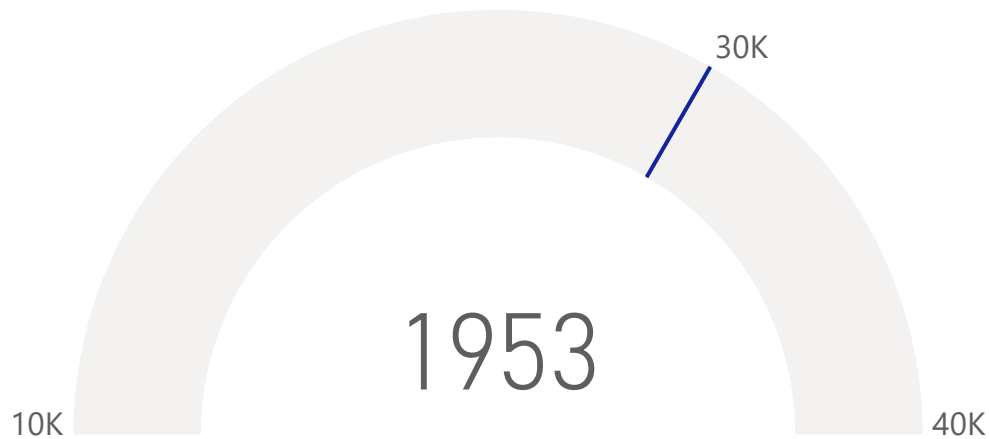
Inferences:

In 2015, the company sold 49,000 units, surpassing its target of 30,000 units by a significant margin of 19,000 units. This indicates strong sales volume performance in 2015.

Actionable insights:

The sales volume in 2015 also surpassed the stated 'maximum units for sale' of 40,000, which could indicate unexpectedly high demand, a revision in the actual maximum capacity, or a data entry anomaly. This requires an investigation.

Orders: Minimum 10,000 and target 30,000



Select year to see how the business performed against its target

Year

2015

2015



Inferences:

The company had way fewer orders than they had targeted in 2015. But they exceeded the target, this could imply the ordering of expensive products or buying in bulk.

Actionable insight:

Find out of how the orders compared to target in the other years, through the slicer in the actual project.

#### Limitations

1. For the "Sales Amount" column:

Upon noticing some rows with extremely high values, I implemented the IQR method using DAX to create a new column, "SalesOutlierCheck," to filter for potential outliers. This filter has two options and applies across all reports:

Option 1: "Without Outliers" displays the number of all sales, excluding potential outliers identified by the IQR method.

Option 2: "IQR Outliers" displays the number of rows identified as outliers by the IQR method.

Selecting both options will show all data.

In a work environment, I would need to send this information to the client for further clarification before attempting to drop any of these potentially outlier rows or drawing conclusions without complete information. If these values were confirmed as true outliers, most of the graphs might change noticeably, and the resulting inferences would likely need to be revised.

2. For the Cost Column:

Due to the lack of knowledge about the pricing structure of different items, it is hard for me to see if these are outliers; hence, I will continue with the project as is. However, if this were real work, I would have requested more information before attempting any modifications.