

Super-Store Data Analysis



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A Portfolio Project (Tableau)



Introduction

This report showcases an in-depth analysis of the **Superstore** dataset using Tableau, focusing on key business metrics such as sales performance, profitability, and customer segmentation. The Superstore dataset is a widely used sample dataset, containing transactional information about products, customers, regions, and orders. Through data visualization and interactive dashboards, this analysis aims to uncover actionable insights into sales trends, product categories, and regional performance. By leveraging Tableau's powerful analytics tools, the report highlights the potential to inform strategic business decisions through data-driven storytelling.

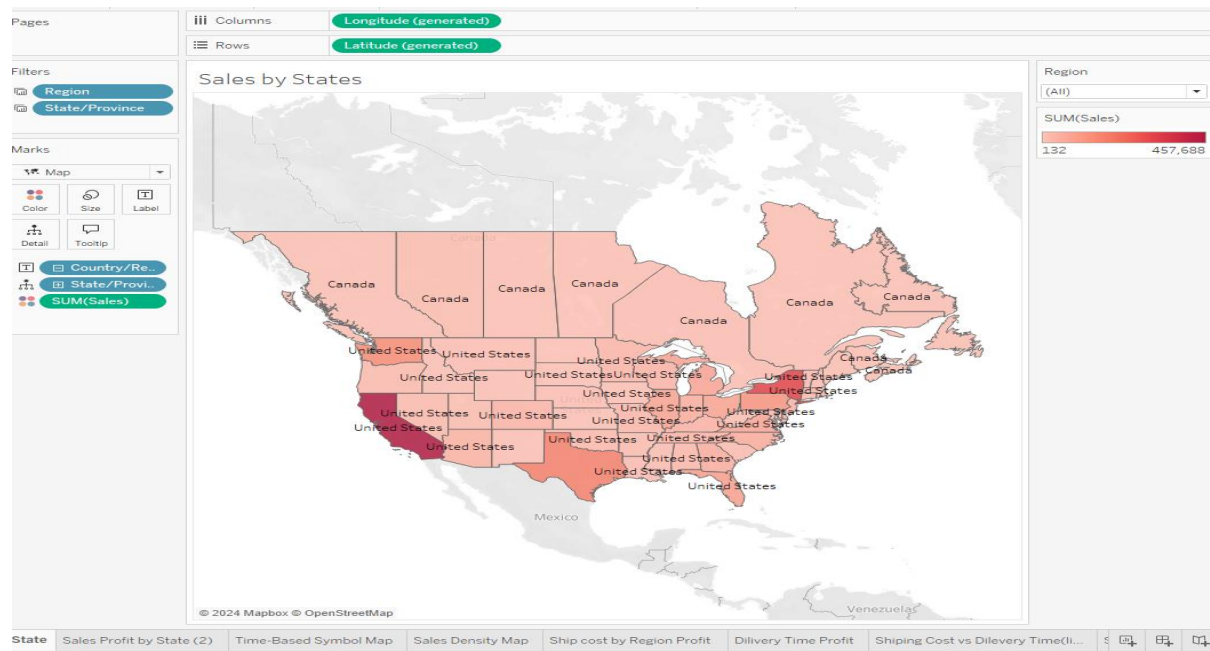
In all screen shots which I will provide a company name tag and email which will you seen that is for prove to all work is from me not a copy paste.

State/City-wise Sales Analysis:

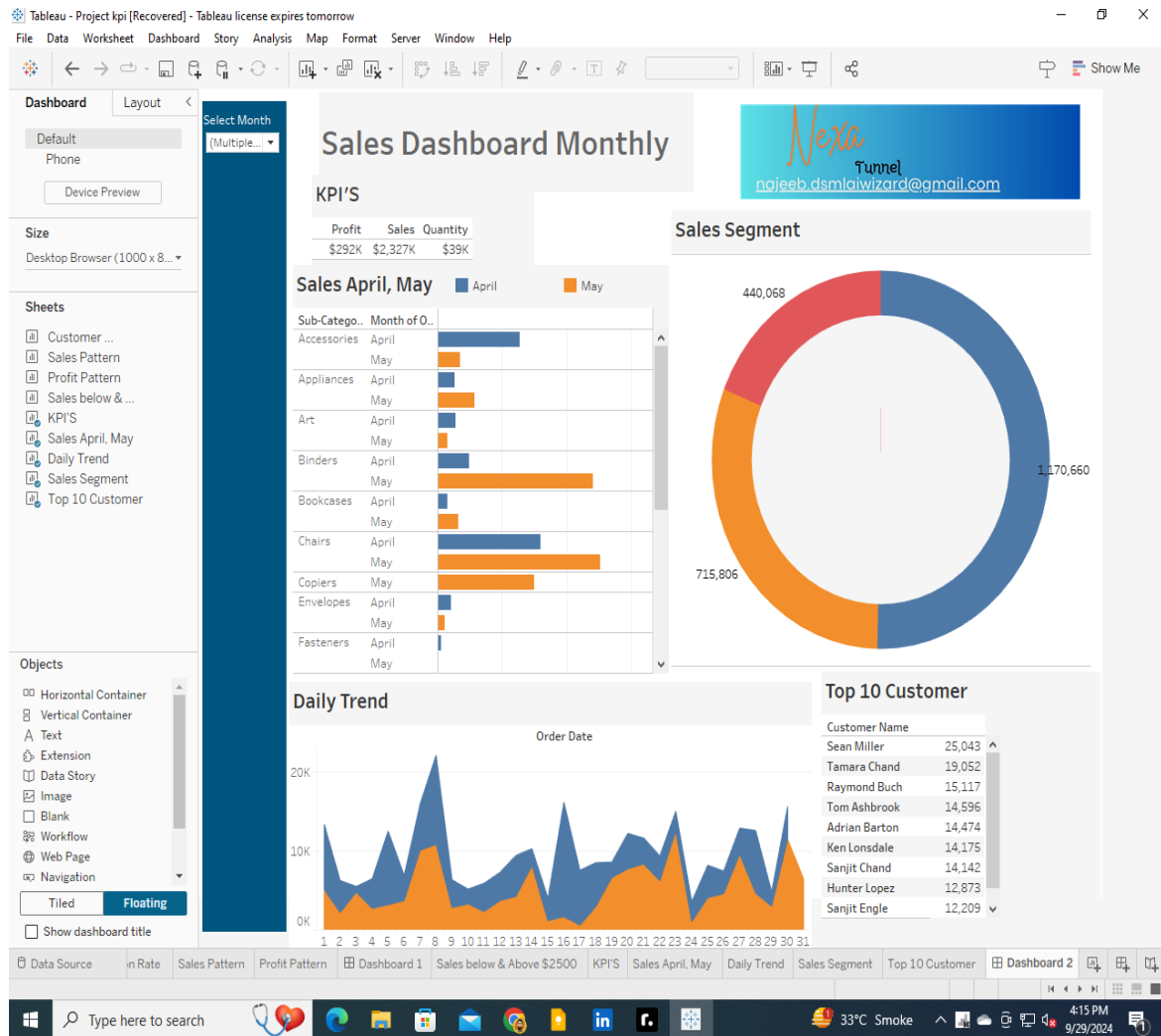
In this section, I analyze the sales performance across different states and cities within the Superstore dataset. By breaking down sales figures geographically, we can identify high-performing regions and areas with potential for growth. This analysis not only highlights the states and cities that contribute the most to overall sales but also helps in understanding regional patterns in consumer behavior. Using Tableau's visualization capabilities, we can observe trends, pinpoint top-performing locations, and identify regions that may require strategic attention to boost sales.

Note:

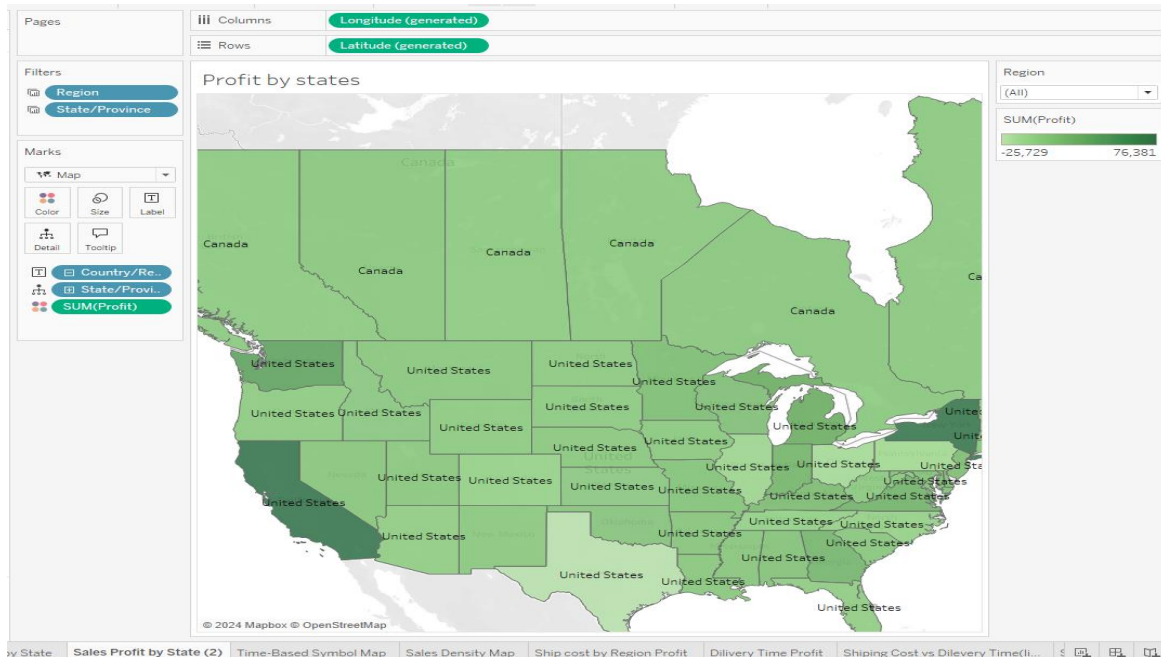
I want to show you only dashboards and some sheets here, and I am not completely leaving it to you what comes out of this analysis, I will describe the valuable points that emerge from the data analysis at the end.



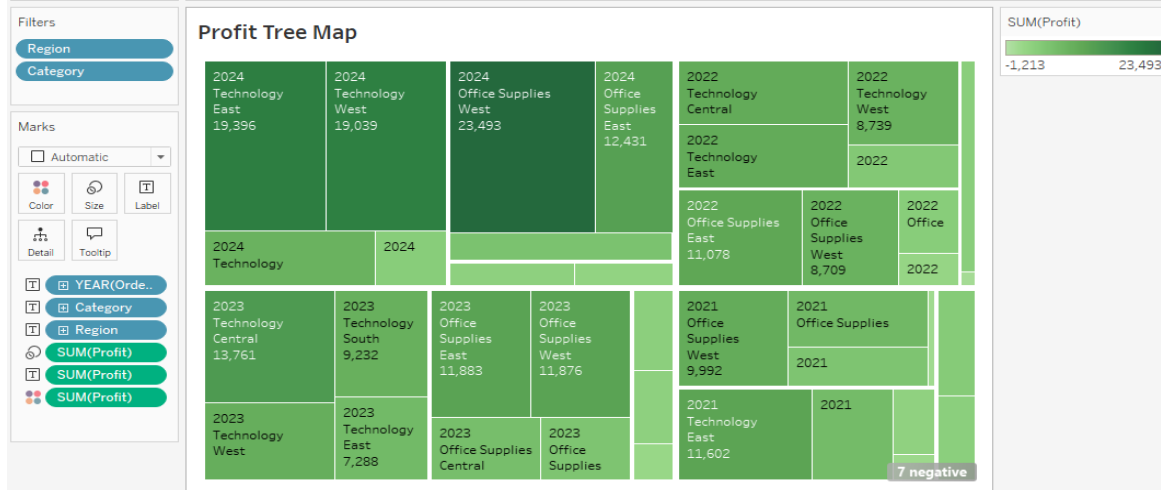
Sales for Month April and May KPIs (Dashboard):



States\cities profit analysis (map):

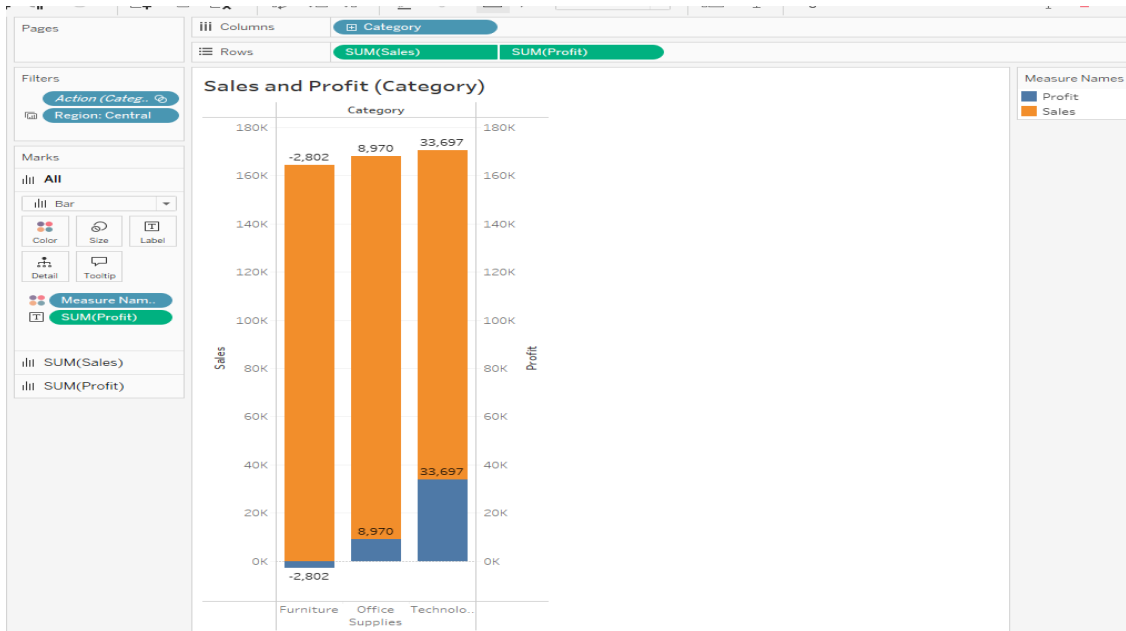
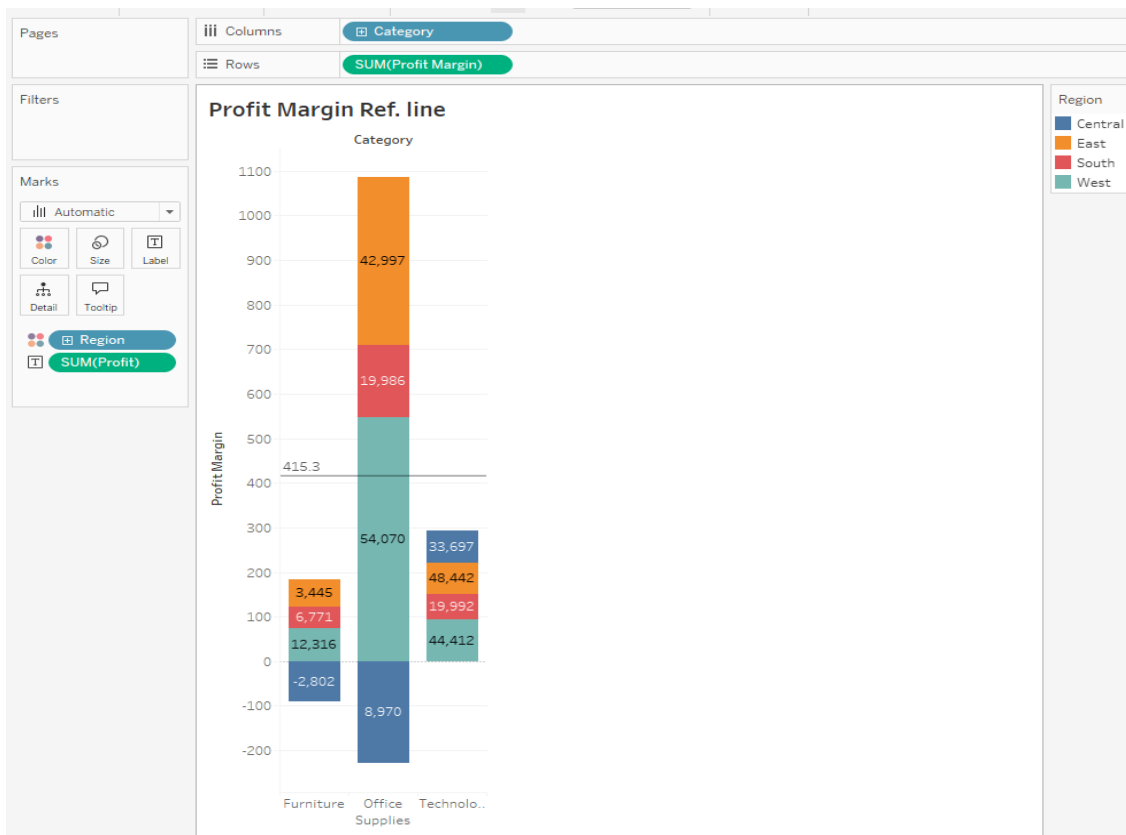


Profit tree map by category:



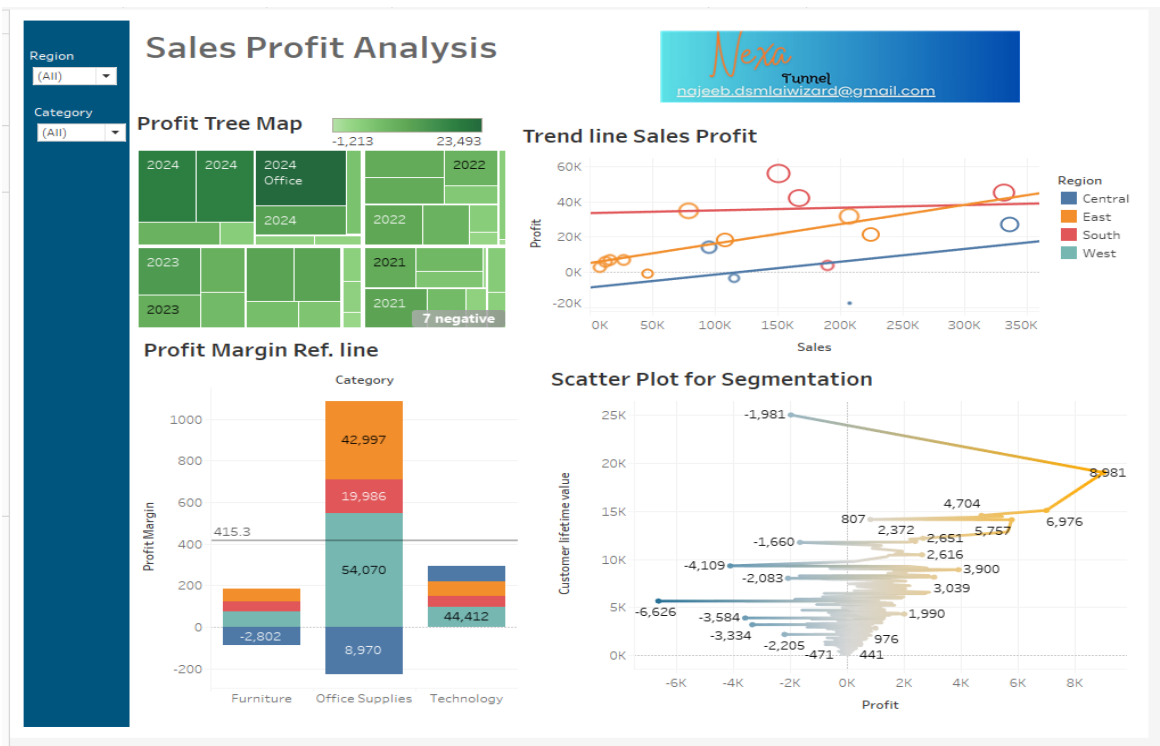
The figure above shows us a comparison between profit by the Product names, the most profitable category is Technology and Office supplies chairs, and most non profitable is Binders and Machine. So, from this figure we can find out what make they non profitable.

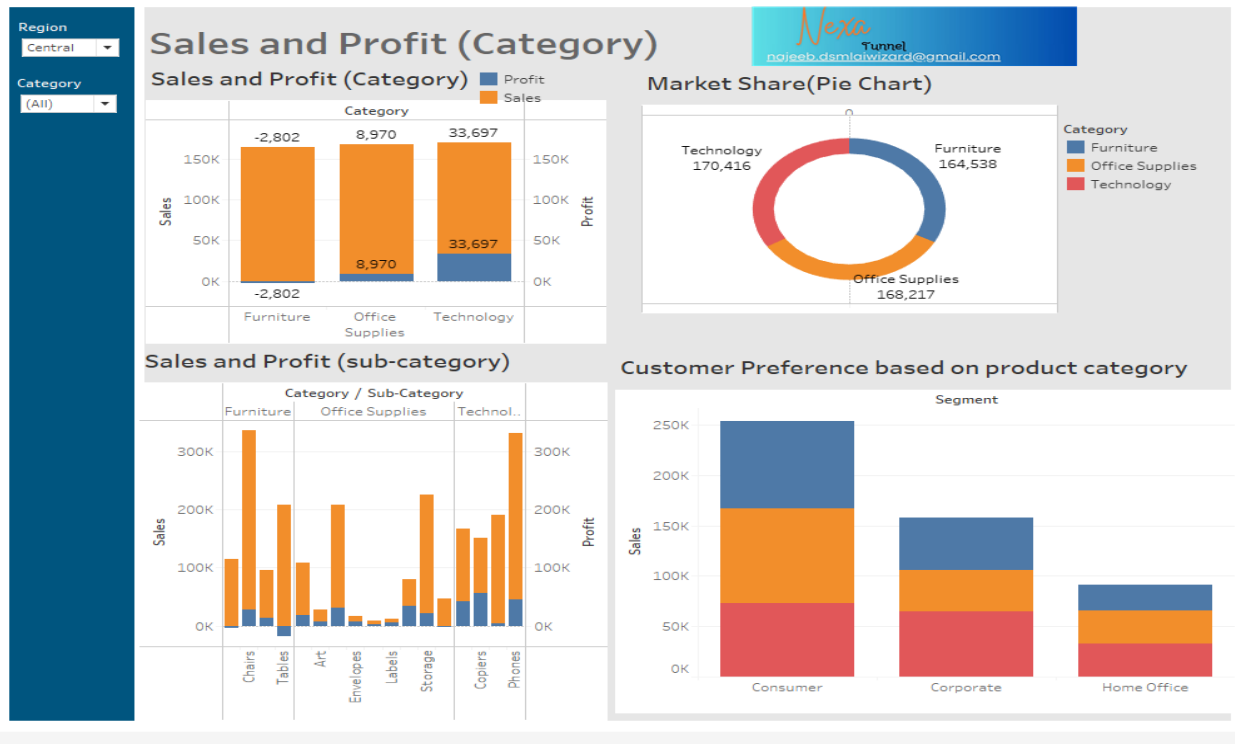
Profit Margin and Sales-Profit(Bar) by category:



The figures above show us a comparison between profit and sales by the category names, the most profitable category is Technology and Office Supplies, and less profitable is Furniture. So, from this figure we can find out what make they non profitable.

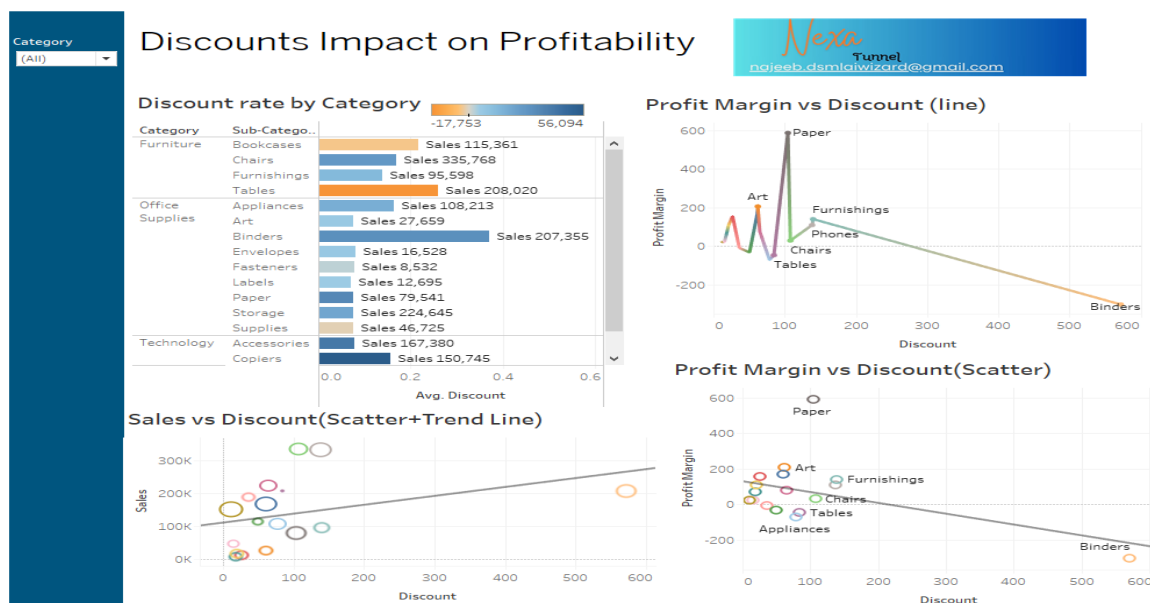
Sales Profit Analysis (Dashboard):





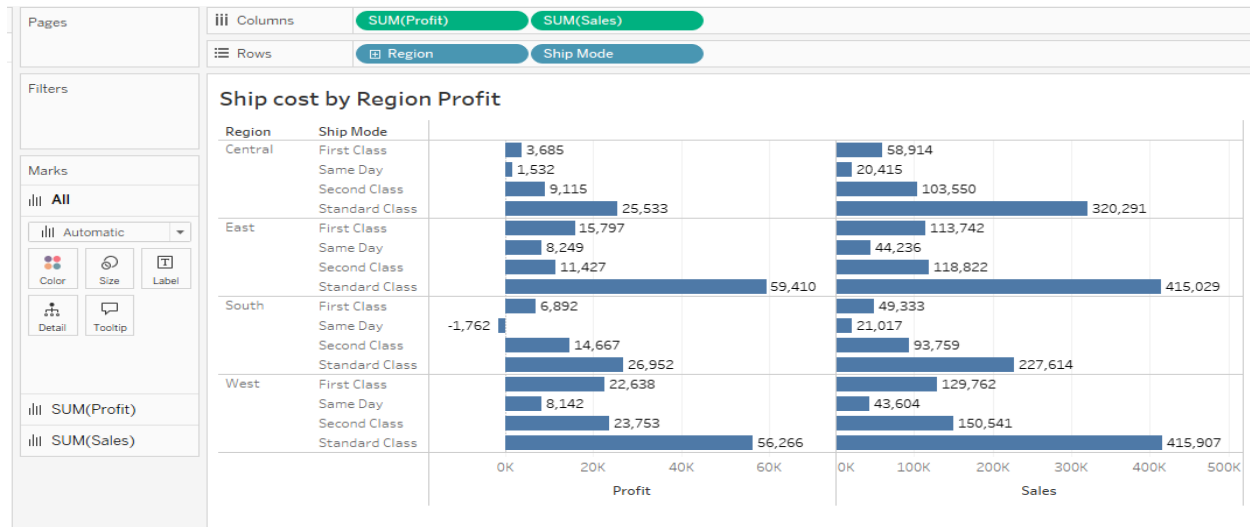
The figure above shows us a comparison between profit and Sales by the Product names and market segment, the most profitable category is Technology and Office supplies we can see the sub category, and most non profitable is Furniture. So, from this figure we can find out what make they non profitable.

Discount impact on profitability (Dashboard):

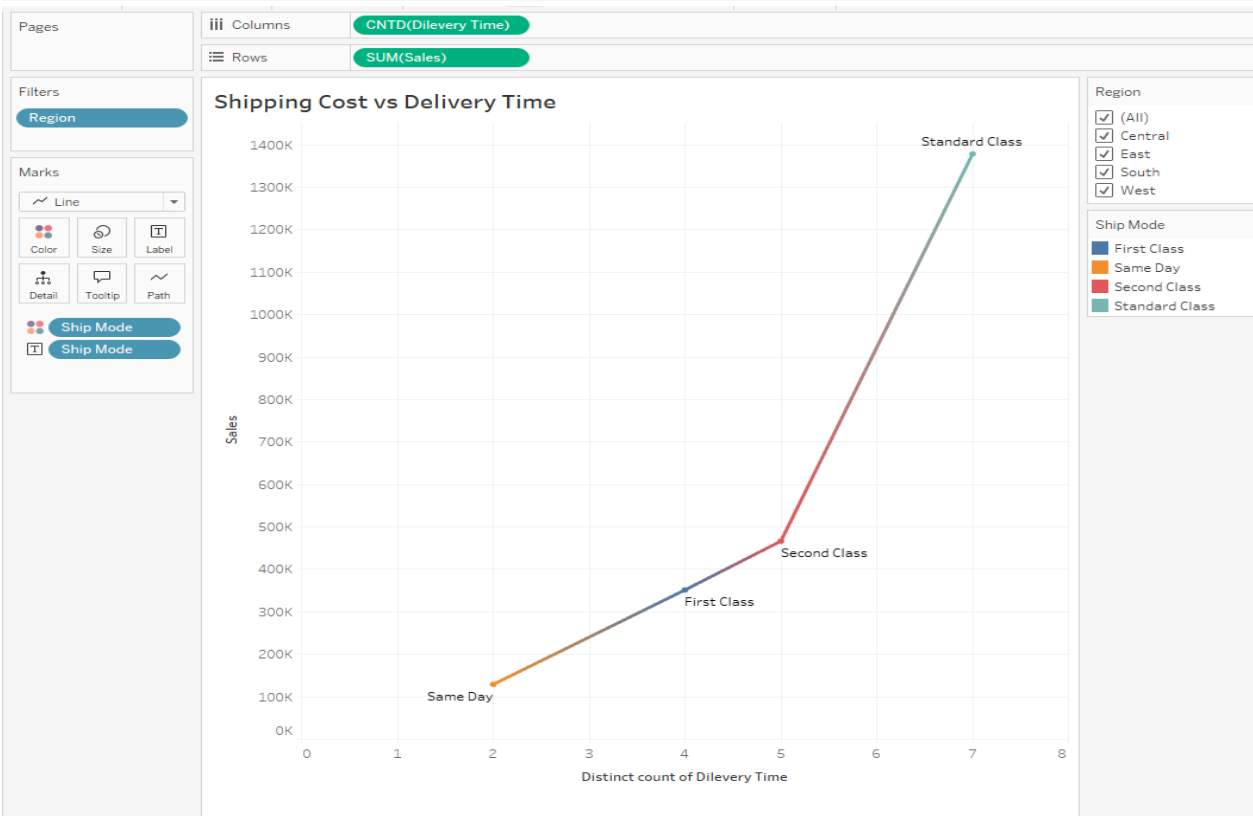


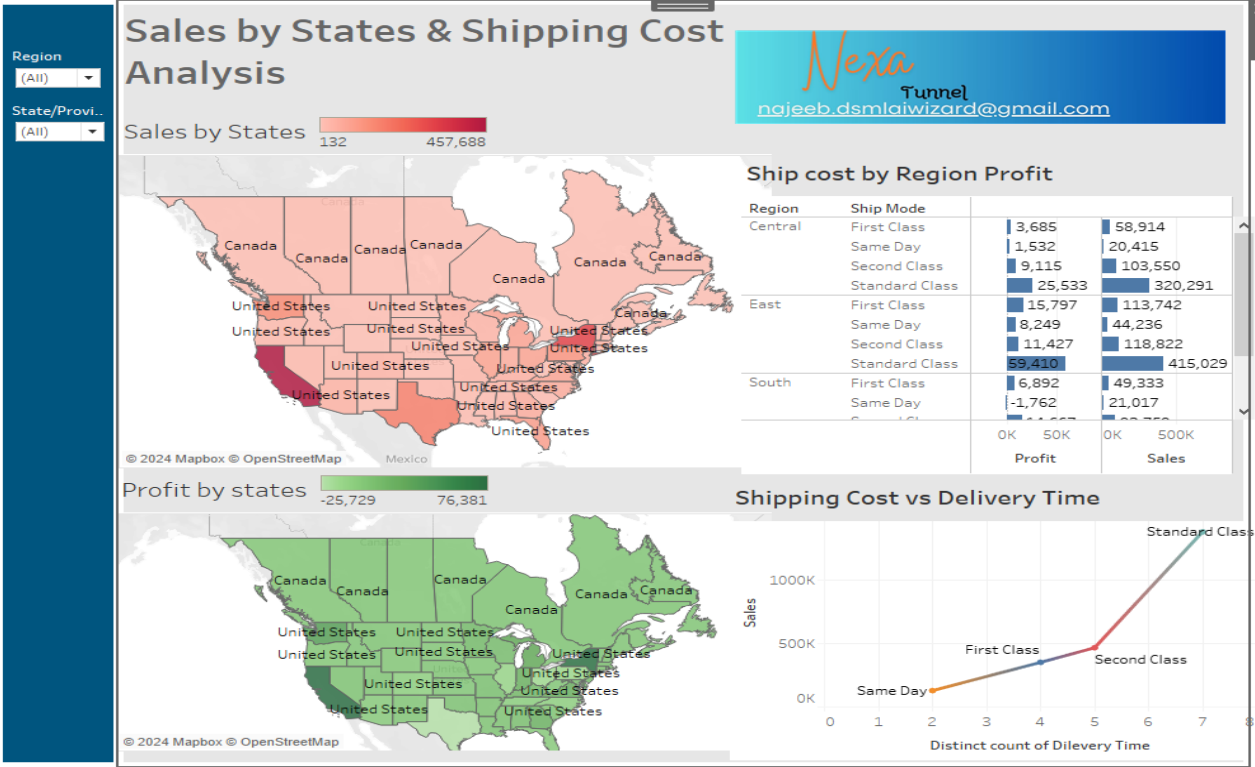
The figure above shows us a comparison between Profit and Discount impact, the most profitable category is Technology while giving discount on it, and most non profitable is Furniture while giving Discount on it. So, from this figure we can find out what make they non profitable.

Shipping cost and delivery time analysis:

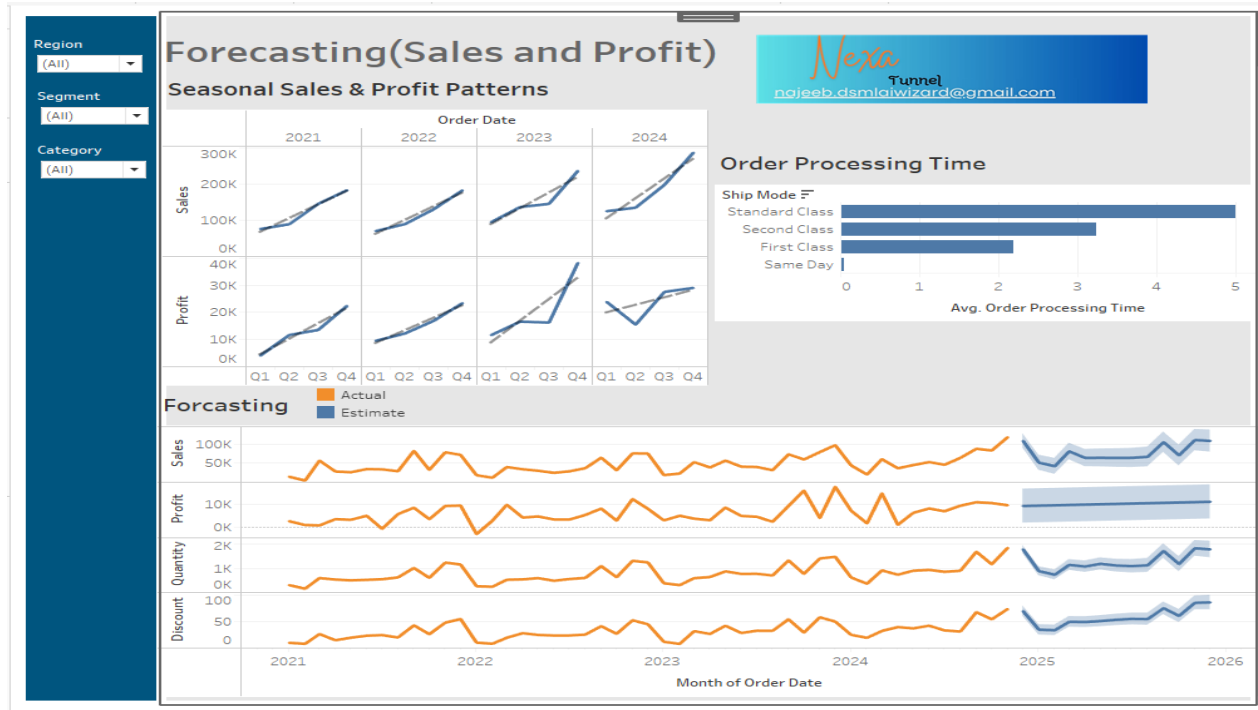


The figure above and below shows us a comparison between Profit and Shipping cost by the Region names, the most profitable Region is west and east, and most non profitable Regions is south and central. So, from this figure we can find out what make they non profitable.





Forecasting (dashboard):



By analyzing historical sales and profit data, we can forecast the company's performance for the upcoming year. Forecasting helps us identify expected trends and seasonal patterns, allowing for proactive decision-making. For instance, based on last 3 years data, we anticipate a steady sales increase in the first two quarters, driven by strong demand in the Technology category, particularly in the West region. However, the third quarter may see a dip due to lower seasonal demand. This forecast allows the business to adjust inventory, plan marketing campaigns, and allocate resources efficiently. Understanding these projections gives management a clear roadmap for maximizing growth and mitigating risks throughout the year."

Market Segmentation and Profit Improvement Strategies for Superstore

Tips to Improve Superstore's Profit:

1. **Optimize Product Pricing:**
 - a. Analyze pricing strategies for low-margin products **Furniture** and adjust to improve profit margins.
 - b. Offer targeted discounts on high-demand products (like copiers, phones, binders) to boost sales volume without significantly impacting profit.
2. **Enhance Customer Retention Programs:**

- a. Implement loyalty programs for high-value customers and offer exclusive discounts to repeat buyers.
 - b. Personalize marketing efforts based on past purchase behavior to encourage repeat purchases and improve customer lifetime value.
- 3. Improve Inventory Management:**
- a. Ensure high-demand products are always in stock to avoid missed sales opportunities.
 - b. Reduce inventory of underperforming products and allocate resources to top-selling categories.
- 4. Target Underserved Regions:**
- a. Focus marketing efforts in low-performing regions, such as the **Central** and **South** regions, to stimulate demand.
 - b. Adjust product offerings to match regional preferences and customer needs.

Weak Points Causing Less Sales and Profit:

- 1. Low Sales in Certain Regions:**
- a. The Central and South regions underperform compared to the West and east resulting in lower overall sales and profit.
 - b. Weak regional marketing strategies and less product availability could be contributing factors.
- 2. Low Profit Margins in the Furniture Category:**
- a. The **Furniture** category has lower profit margins due to high shipping costs and fewer sales compared to Technology and Office Supplies.
- 3. Inefficient Shipping and Order Fulfillment:**
- a. High shipping costs, particularly for large products, reduce profitability.
 - b. Delayed deliveries may lead to decreased customer satisfaction and retention, impacting repeat purchases.
- 4. Lack of Targeted Discounts:**
- a. Discount strategies are not well-optimized, leading to lower profit margins without significant sales growth in certain regions or product categories.

Final Summary for My Portfolio:

"In this analysis, I explored key business performance areas, including sales trends, profitability, and customer segmentation. Sales performance showed strong growth in the Technology category, particularly in the West region, while Furniture lagged behind due to lower margins.

Customer segmentation revealed that high-value repeat customers contribute significantly to overall profits, suggesting that targeted retention strategies could further enhance business growth. Based on the insights, I recommended increasing marketing efforts in high-profit regions, optimizing shipping logistics to reduce costs, and focusing on customer retention programs. By implementing these strategies, the business can achieve sustainable growth in sales, profit, and customer satisfaction."

This summary provides a concise narrative for decision-makers and stakeholders reviewing the portfolio, highlighting critical findings and actionable insights from your analysis.

How I Performed the Analysis and Created Calculated Fields

To perform this detailed analysis on Superstore's data, I utilized Tableau's powerful features to create calculated fields and visualizations that helped me uncover insights. Here's how I approached the process:

1. Data Preparation:

- a. I started by exploring the **Superstore dataset**, ensuring that the data was clean and ready for analysis. I checked for missing values and ensured all the fields were properly formatted.

2. Creating Calculated Fields:

- a. To gain deeper insights, I created several **calculated fields**:
 - i. **Profit Margin**: To calculate the percentage of profit from sales, I used the formula $\text{Profit} / \text{Sales}$ and visualized this to identify which products and regions had higher profitability.
 - ii. **Customer Lifetime Value (CLV)**: Using the sum of sales from repeat customers, I calculated the potential long-term value of each customer.
 - iii. **Average Order Value**: To analyze how much customers spend on average per order, I created a calculated field with the formula $\text{SUM}(\text{Sales}) / \text{COUNTD}(\text{Order ID})$.
 - iv. **Discount Impact on Profit**: I created a field to measure how discounts affected profit margins using $\text{Profit} / \text{Discount}$ to identify the correlation between heavy discounting and profitability.
 - v. **Some additional calculated fields**:
 - YoY Growth:
 $(\text{SUM}([\text{Sales}]) - \text{LOOKUP}(\text{SUM}([\text{Sales}]), -1)) / \text{LOOKUP}(\text{SUM}([\text{Sales}]), -1)$
 - Customer life time value:
 $\{\text{FIXED} [\text{Customer Name}] : \text{SUM}([\text{Sales}]) \}$
 - Delivery time(days)
 $\text{DATEDIFF}('day', [\text{Order Date}], [\text{Ship Date}])$
 - Customer Retention:

IF COUNTD([Customer ID]) > 1 THEN 'Returning' ELSE 'New' END

3. Building Visualizations:

- a. I used Tableau's drag-and-drop interface to build insightful visualizations:
 - i. **Bar Charts:** For comparing sales and profit by category and region.
 - ii. **Heat Maps:** To identify high and low-performing areas based on sales and profit distribution across different regions.
 - iii. **Scatter Plots:** To analyze the relationship between discounts and profitability, which provided insights into the effectiveness of discount strategies.

4. Dashboards and Storytelling:

- a. I consolidated key metrics and visualizations into a **performance dashboard** using KPIs such as Total Sales, Profit, and Customer Retention Rate. This dashboard allows for easy monitoring of business performance at a glance.
- b. Lastly, I used Tableau's **Story feature** to create a narrative, presenting the findings step-by-step, starting from high-level trends like sales growth to more specific insights such as customer segmentation and regional performance.

Through calculated fields and visual analysis, I was able to draw actionable insights, helping to inform strategies for improving sales, profit, and customer satisfaction. This methodical approach ensures that the analysis is data-driven and provides a solid foundation for decision-making.

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