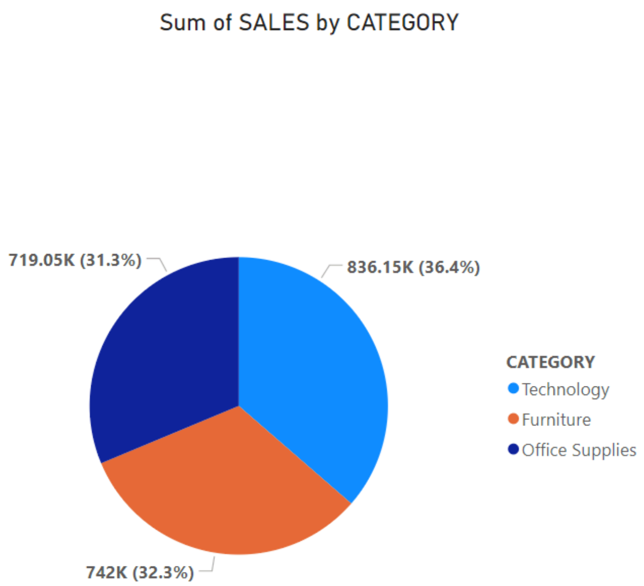
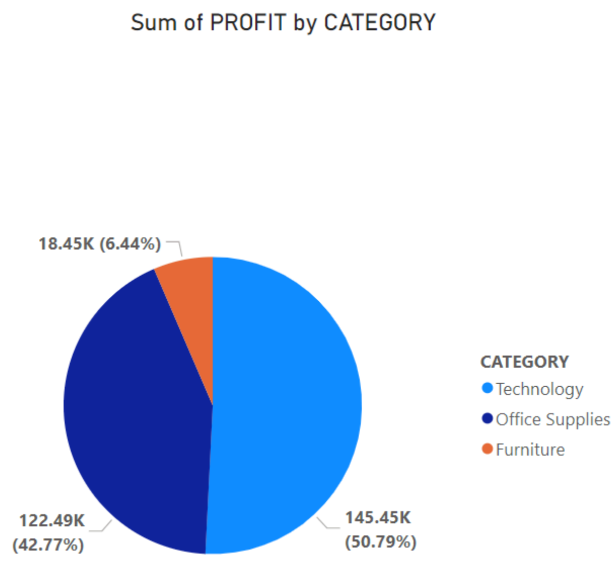
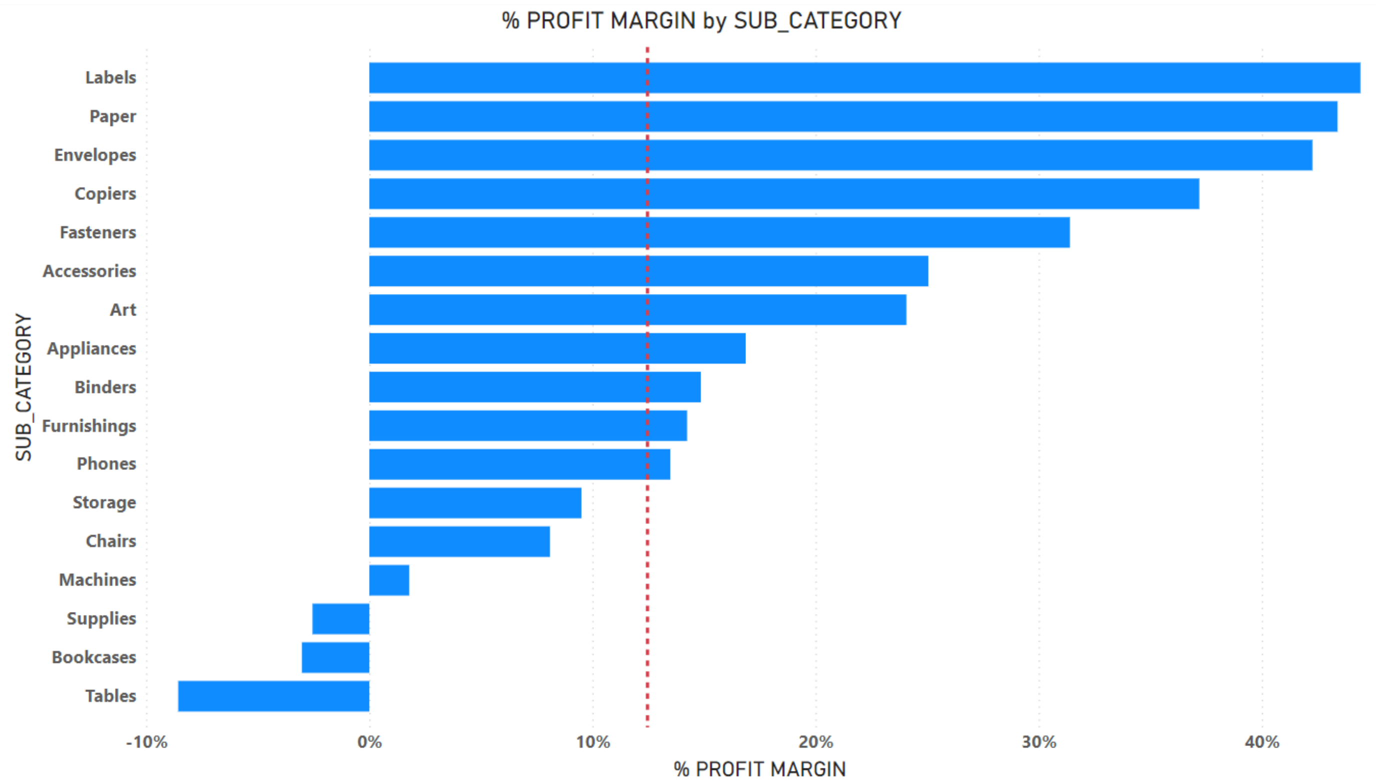
PRODUCT ANALYSIS





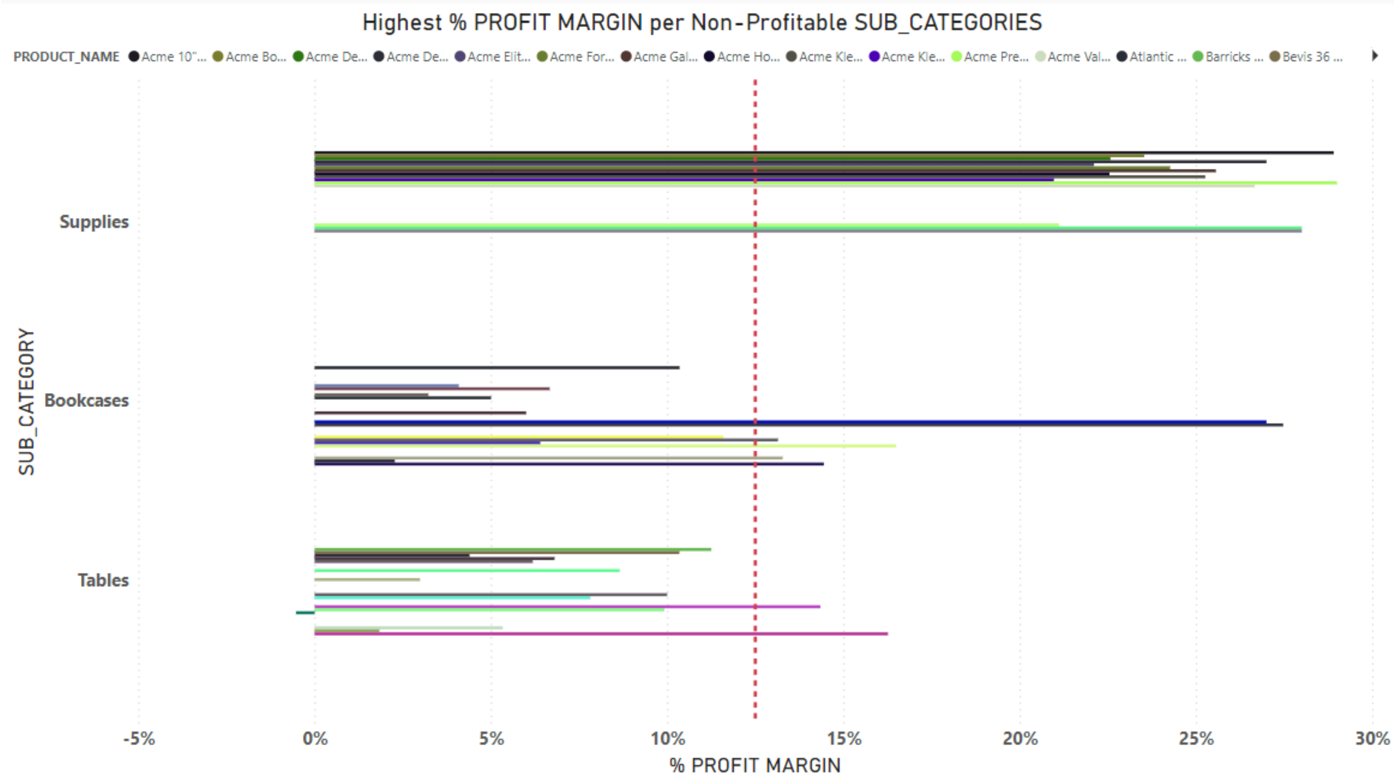
When we visualize the sales and profits across different product categories, we observe that sales are evenly distributed among furniture, office supplies, and technology.
However, when we dig deeper into the profit margins, it's clear that furniture has a significantly lower margin compared to office supplies and technology.

Given this insight, let's take a look at the sub-categories and their respective margins:



The bar chart provides a clear picture of the profit margins across different product sub-categories. Notably, we're seeing exceptionally high profits, particularly within the Office Supplies category. Additionally, half of the sub-categories in the Technology category are also performing well in terms of profits.
However, the chart also highlights a concern: sub-categories within Furniture have consistently negative profits, with three of them even resulting in losses.

Given this insight, let's take a look at the items within the three sub-categories where the company is losing money:



Analyzing the profit margins of the top 15 products in non-profitable subcategories reveals interesting trends.
The low profit margins are evident in Tables and Bookcases. Even the 15th highest-margin item in Tables is being sold at a loss, highlighting a significant profitability challenge within this category.
Surprisingly, Supplies show high margins on many items, but the overall sub-category operates at a loss. This inconsistency can be attributed to the fact that the most of the selling items within this sub-category are being sold at a loss.
As a result, the sub-category's overall profit margin is adversely affected.

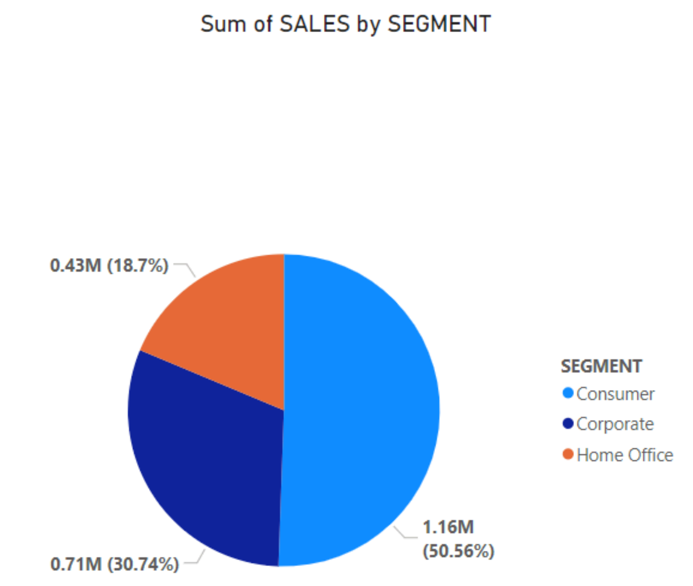
This is easily provable with a simple visualization of the table of products sold within the sub-category:

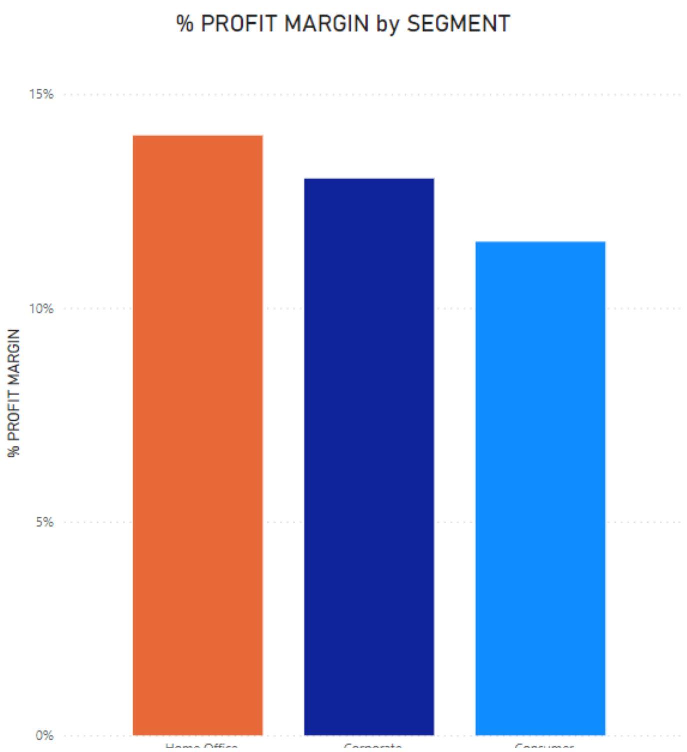
SUB_CATEGORY	PRODUCT_NAME	Sum of QUANTITY	DISCOUNT	Sum of PROFIT	% PROFIT MARGIN
Supplies	Acme Serrated Blade Letter Opener	3	20.00%	-1.81	-23.75%
Supplies	Acme Rosewood Handle Letter Opener	5	20.00%	-3.77	-23.75%
Supplies	Serrated Blade or Curved Handle Hand Letter Openers	7	20.00%	-4.18	-23.75%
Supplies	Compact Automatic Electric Letter Opener	5	20.00%	-107.38	-22.50%
Supplies	Martin Yale Chadless Opener Electric Letter Opener	10	20.00%	-1,499.06	-22.50%
Supplies	Martin-Yale Premier Letter Opener	8	20.00%	-17.52	-21.25%
Supplies	Premier Automatic Letter Opener	11	20.00%	-449.49	-21.25%
Supplies	Stiletto Hand Letter Openers	14	20.00%	-22.85	-21.25%
Supplies	High Speed Automatic Electric Letter Opener	3	20.00%	-786.01	-20.00%
Supplies	Acco Side-Punched Conventional Columnar Pads	15	20.00%	-7.81	-18.75%
Supplies	Premier Electric Letter Opener	6	20.00%	-104.27	-18.75%
Supplies	Staple remover	32	20.00%	-5.01	-4.52%
Supplies	Serrated Blade or Curved Handle Hand Letter Openers	2	0.00%	0.06	1.00%
Supplies	Acme Rosewood Handle Letter Opener	7	0.00%	0.28	1.00%
Supplies	Acme Serrated Blade Letter Opener	2	0.00%	0.06	1.00%
Supplies	Compact Automatic Electric Letter Opener	21	0.00%	50.11	2.00%
Supplies	Martin Yale Chadless Opener Electric Letter Opener	12	0.00%	199.87	2.00%
Supplies	Letter Slitter	4	0.00%	0.30	3.00%
Supplies	Martin-Yale Premier Letter Opener	12	0.00%	4.64	3.00%
Supplies	Premier Automatic Letter Opener	3	0.00%	21.63	3.00%
Supplies	Stiletto Hand Letter Openers	3	0.00%	0.86	3.00%
Supplies	High Speed Automatic Electric Letter Opener	8	0.00%	524.01	4.00%
Supplies	Premier Electric Letter Opener	18	0.00%	104.27	5.00%
Supplies	Acme Box Cutter Scissors	5	20.00%	3.07	7.50%
Supplies	Acme Office Executive Series Stainless Steel Trimmers	12	20.00%	6.17	7.50%
Supplies	Acme Titanium Bonded Scissors	5	20.00%	2.55	7.50%
Supplies	Fiskars Spring-Action Scissors	3	20.00%	2.52	7.50%
Supplies	Acme Elite Stainless Steel Scissors	3	20.00%	1.50	7.50%
Supplies	Acme Design Line 8" Stainless Steel Bent Scissors w/Champagne Handles, 3-1/8" Cut	2	20.00%	0.96	8.75%
Supplies	Acme Stainless Steel Office Snips	9	20.00%	4.58	8.75%
Supplies	Acme Tagit Stainless Steel Antibacterial Scissors	11	20.00%	7.62	8.75%
Total		**647**		**-1,189.10**	**-2.55%**

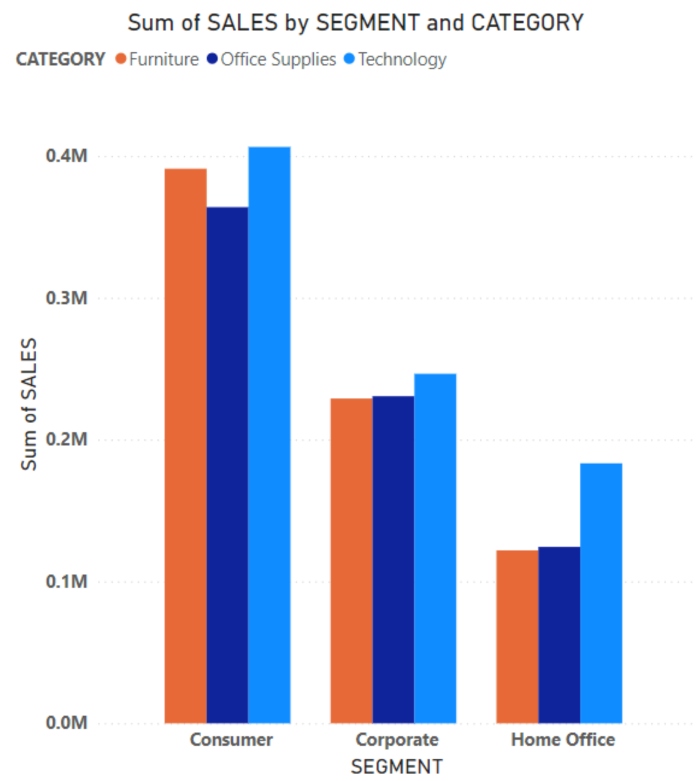
We can see that the profit margin of the Supplies subcategories is negative (-2.55%).
We can see that many products that sell in large quantities result in a negative profit margin. These negative and very low profit margins are all associated with discounts.

All these insights we gained from making the product analysis will help us make recommendations that will help the company's strategic decision-making. An entire section will be dedicated to the recommendations.

CUSTOMER SEGMENT ANALYSIS







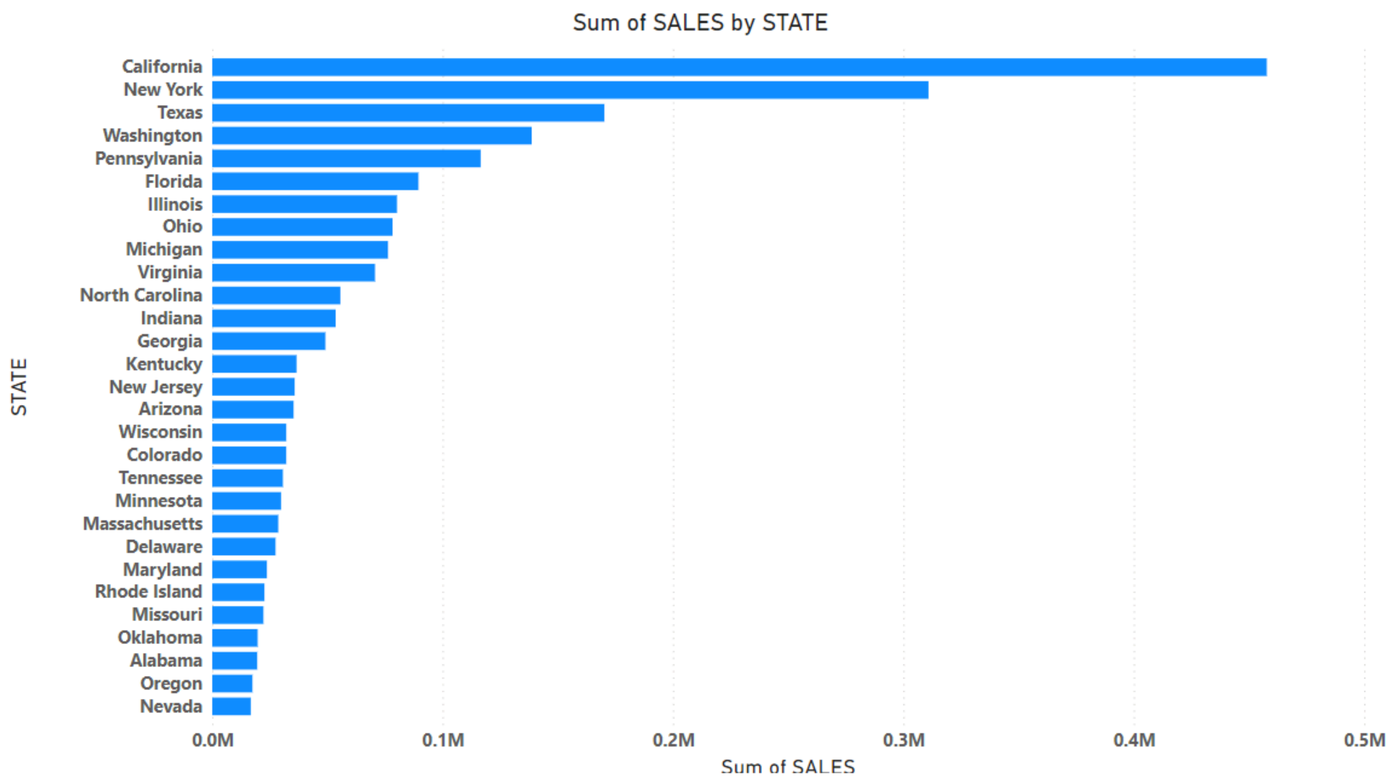
When we examine the customer segments at the Superstore, it is clear that the Consumer segment is contributing the most to sales.

The Consumer segment has a slightly lower profit margin compared to Corporate and Home Office. This is most likely due to the high volume of sales it's doing in Furniture which, as we saw in the product analysis, has the lowest profit margin out of all the categories of products.
Another insight is that, regardless of the customer segment, a major portion of the sales comes from Technology products. On average, Technology products have a high profit margin, contributing positively to the overall profitability.

All these insights we gained from making the customer segment analysis will help us make recommendations that will help the company's strategic decision-making. An entire section will be dedicated to the recommendations.

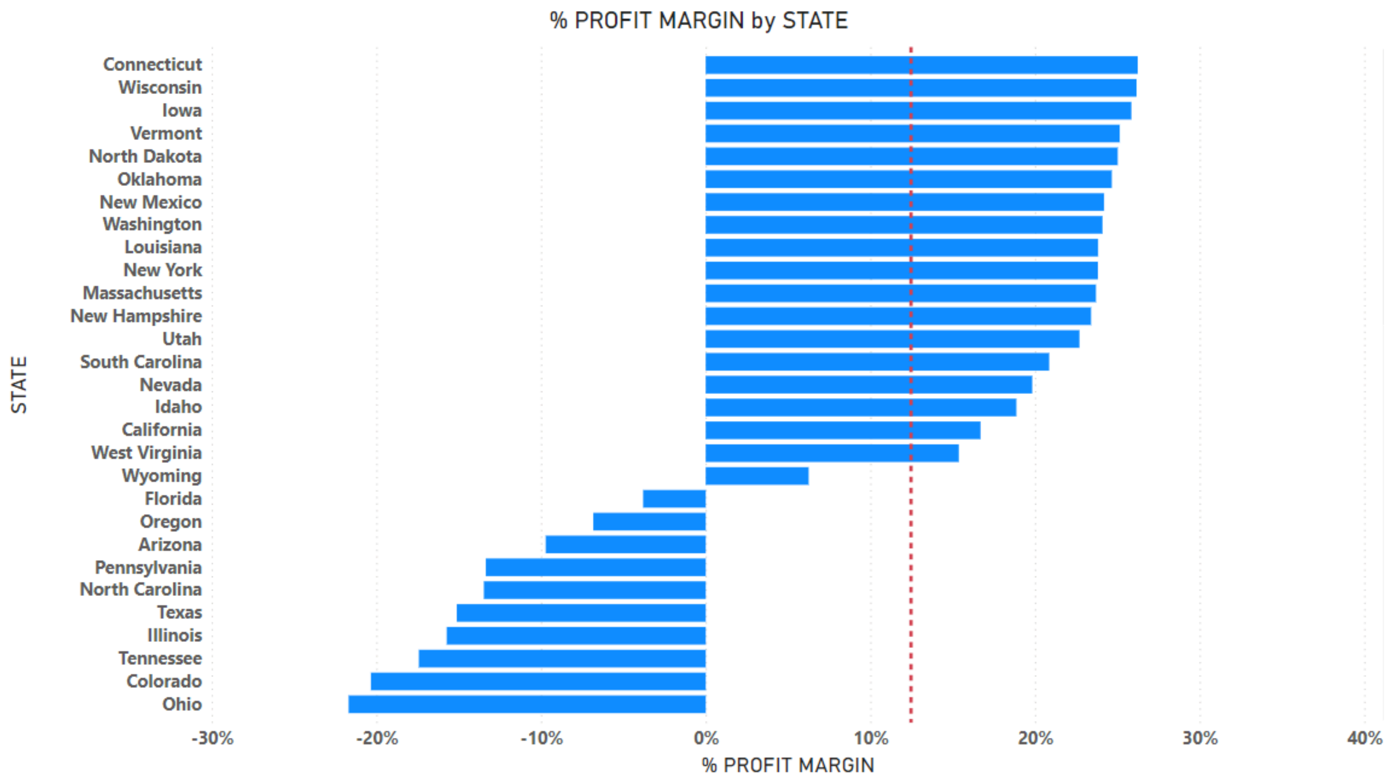
GEOGRAPHICAL ANALYSIS

Let's examine the states that make the most sales:



The difference in sales across states reveal significant variations in the Superstore's market performance.
California leads the pack with sales amounting to $457,687.63, which is 50% higher than the second-highest state, New York. Moreover, New York's sales are approximately 80% more than those of Texas, which holds the third position.
This shows the importance of maintaining strong sales performance in California, New York, and Texas – the top three states in terms of sales. The company heavily relies on these geographical locations, as they contribute to most of the Superstore's revenue among the 49 states in which the Superstore operates.

Let’s now visualize the states with the lowest profit margin (the red dashed line represents the average profit margin made by the Superstore):

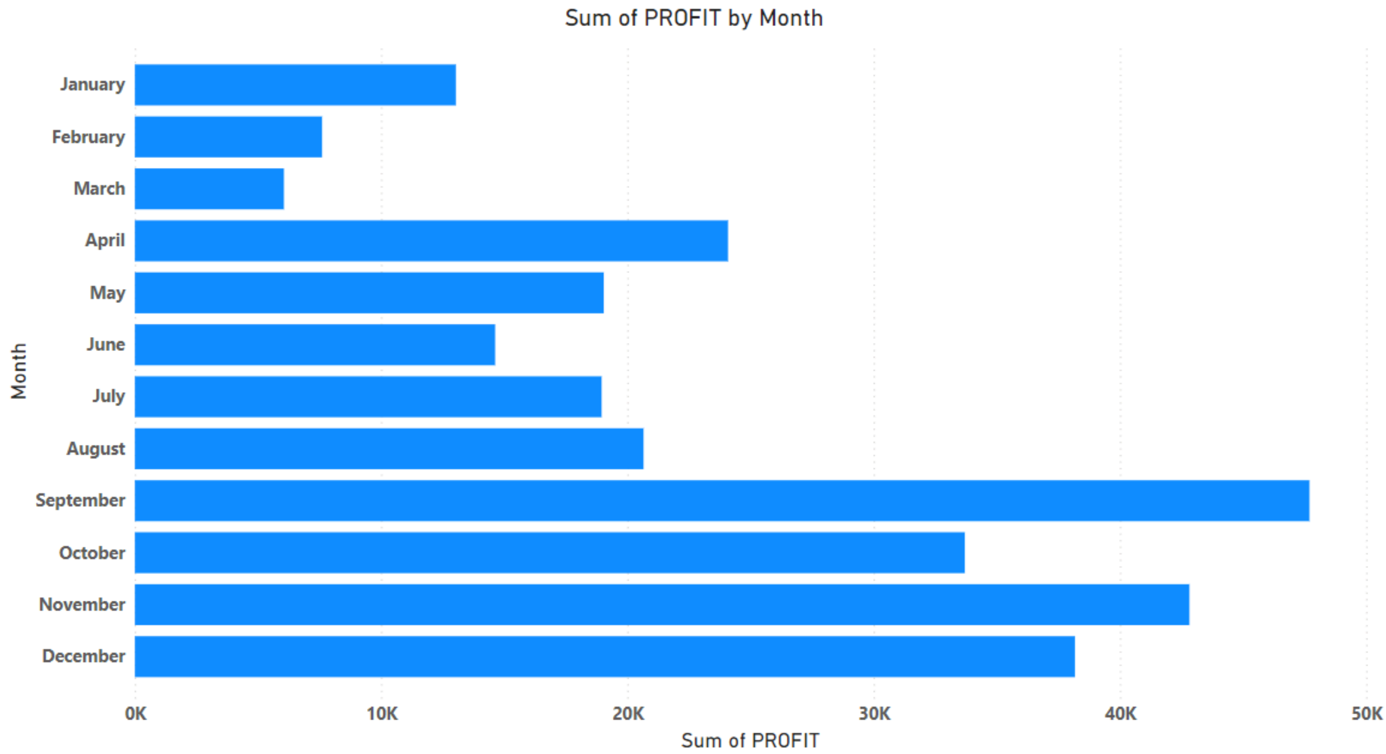


We see that a considerable number of states fall below the average profit margin, with some even experiencing negative margins.
Interestingly, the state of Texas, which is the third highest state in which sales occur, contributes to over a quarter of the total losses incurred by the company.

All these insights we gained from making the geographical analysis will help us make recommendations that will help the company’s strategic decision-making. An entire section will be dedicated to the recommendations.

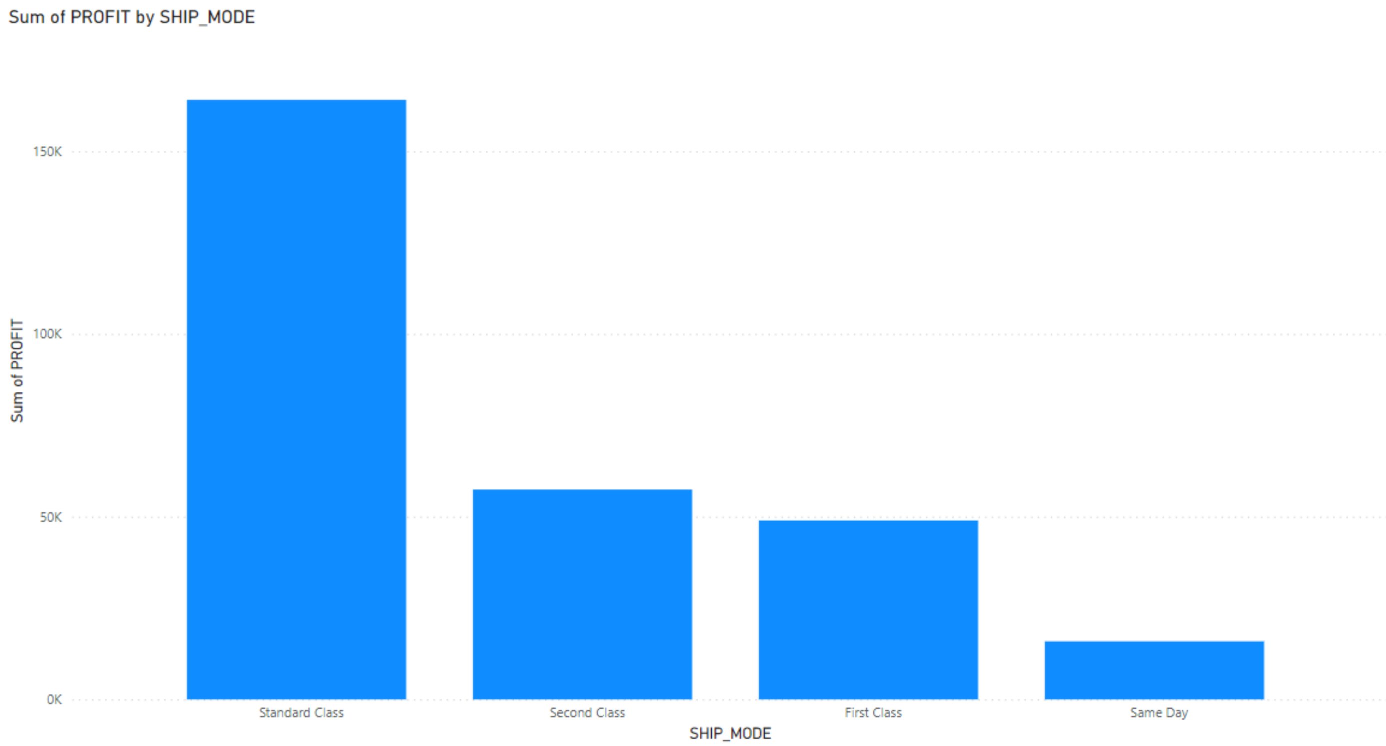
SALES DATE ANALYSIS

Let us now understand the absolute contribution of each month to the overall profit of the business:



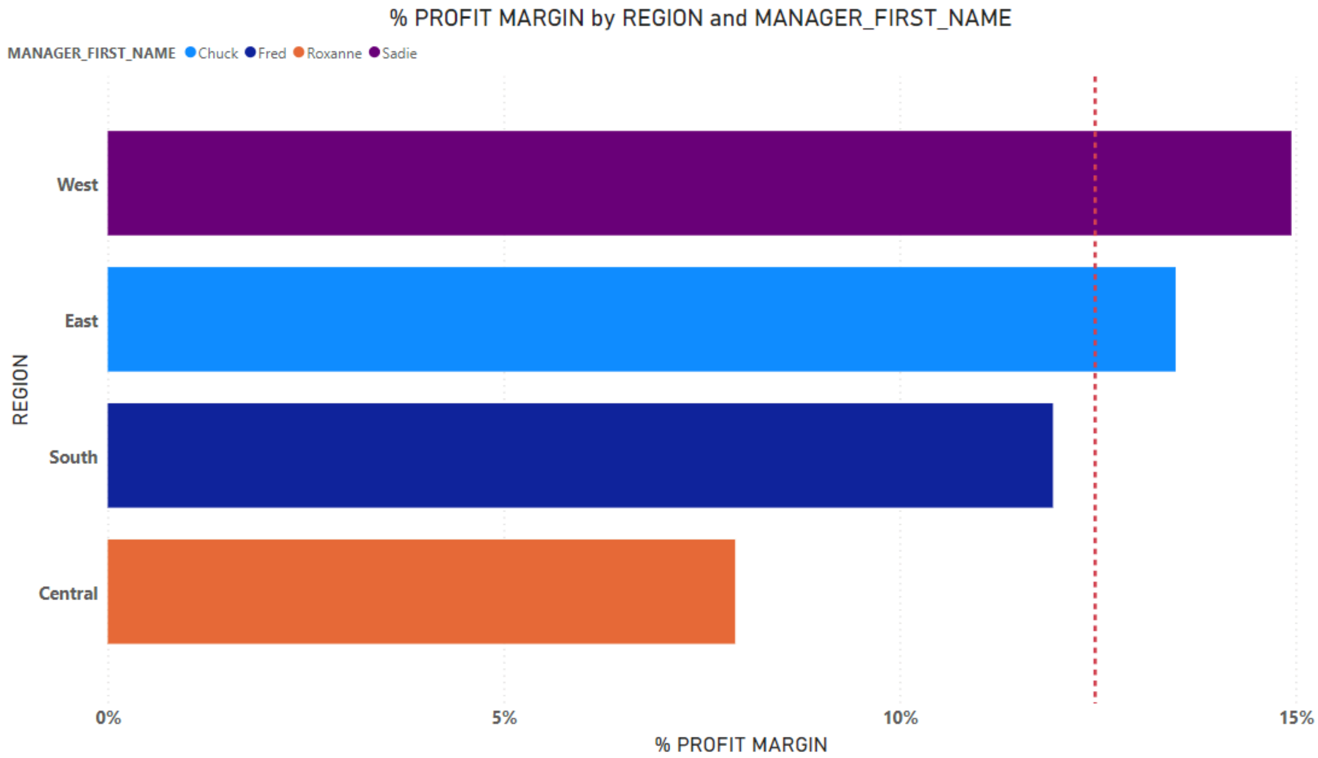
January, February and March show very low profits, suggesting a potentially slower start to the year in terms of revenue generation.
This trend may be influenced by various factors, including post-holiday consumer behavior, reduced spending in the early months, or seasonal patterns specific to the industry. Recognizing these slower periods at the beginning of the year is essential for businesses to adjust their strategies and allocate resources thoughtfully.

SHIPMENT MODE ANALYSIS



From this visualization, we can see that all four shipment methods generate profits for the company. So there is no incentive to give up on any one.

MANAGER ANALYSIS



The data on profit margins across different regions, managed by Sadie in the West, Chuck in the East, Fred in the South, and Roxanne in the Central region, reveals variations in regional profitability. Sadie's West region stands out with the highest profit margin at 14.94%, surpassing the company's average profit of 12.5%.

Chuck in the East follows closely with a profit margin of 13.48%, also above the company average. Fred in the South maintains a below-average profit margin of 11.93%, while Roxanne in the Central region has the lowest profit margin at 7.92%.

Recommandations

After having performed an analysis on products, customer segments, geography, monthly sales, and managers, we recommend the management of the company to:

- Reassess the discount strategy, especially in the Supplies sub-category where high-margin items are sold at a loss;
- Consider to stop selling unprofitable products, especially within Tables and Bookcases subcategories, where negative profit margins are observed;
- Explore strategies to diversify product sales within the Consumer segment, to reduce its dependency on low profit-margin Furniture products;
- Consider targeted marketing and promotions for Technology items to capitalize on their high-profit margins;
- Allocate additional resources and marketing efforts in its top-performing states, namely California, New York, and Texas, which collectively contribute to most of the Superstore's revenue;
- Analyze the factors causing low or negative profit margins in low-performing states. The company can:
    - Implement targeted strategies to improve profitability, such as adjusting pricing, refining product offerings, or optimizing supply chain operations;
    - Close its stores and stop operating in these states.
- The company should devise strategies to cope with the seasonal fluctuations in revenue, especially during the first quarter of the year, when sales are typically low;
- Evaluate the factors influencing the low profit margins in the South and Central regions. The company can:
    - Provide additional training and/or resources to these managers to help improve regional profitability;
    - Replace them with new managers.