

Official Story

Title Page and Objectives	Average Return Rate Summary	Data Being Analyzed	Return Rates by Category & Sub-Categ..	Return Rates Based Shipping Method	Return Rates by Region and Shipping ..	Return Rates by Region and Shipping ..	Return Rates by Region and Shipping ..	Return Rates by Region and Shipping ..	Return Rates by Region and Shipping ..	Average Return Rate Conclusion
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Return Rate Analysis

The main goal of this project is to find out what may be causing high return rates at the superstore. This project uses exploratory data analysis of data the superstore gathered over four years to help determine what is causing high return rates. The average return rates were found for the following:

- State in U.S.
- Category
- Sub-Category
- Shipping Method
- Shipping Date by Month

These rates were all compared to determine what the highest rates could be attributed to and how they could be reduced.

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Main Findings

The average return rate was used to provide insight on what may be causing high return rates from the superstore.

The average return rate is the best measurement for this project as it helps us find which items are being returned most often. If the goal was to find out how the returns affect profits, finding the total cost of returns would be better. Finding the total number of returns helps us find the return rate and can be used to calculate other metrics.

Here are the main findings:

Machines, fasteners, and chairs had the highest return rates of all sub-categories, while technology had the highest return rate of the broad categories. Return rates were highest in the West region of the country. Same day delivery was the shipping method which had the highest return rates of the different methods.

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Data Explained

The quantitative data types used in this project are sales and average return rate, which was calculated using the returned orders data. The qualitative data analyzed with the average return rate was the state, category, sub-category, shipping method, and shipping date of each order. The data used in this analysis was gathered from the superstore over a four year period.

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Return Rates Sub-Category & Category

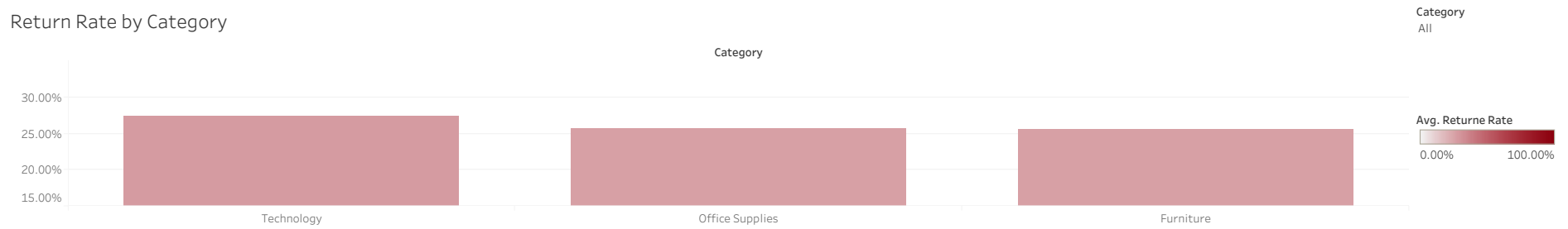
This dashboard shows the average return rates for each category and sub-category.

- Return Rate by Category (Top)
- Return Rate by Sub-Category (Bottom)

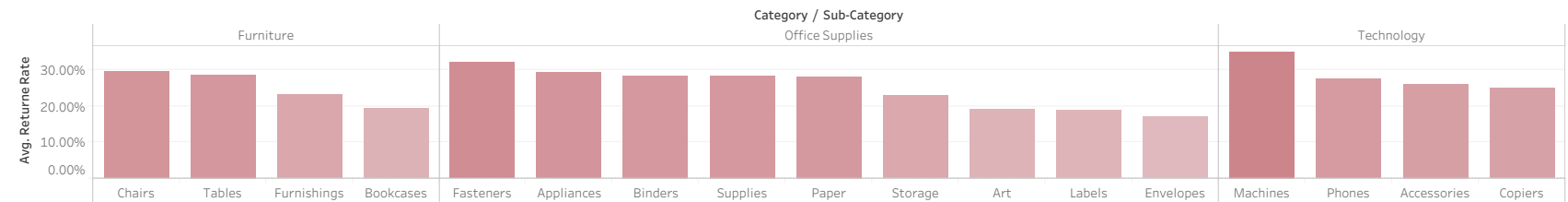
Each category can be focused on individually using the category filter on the right side of the dashboard.

The average return rate for each category is around 25%, so any sub-categories at or above that average should be further inspected.

Return Rate by Category

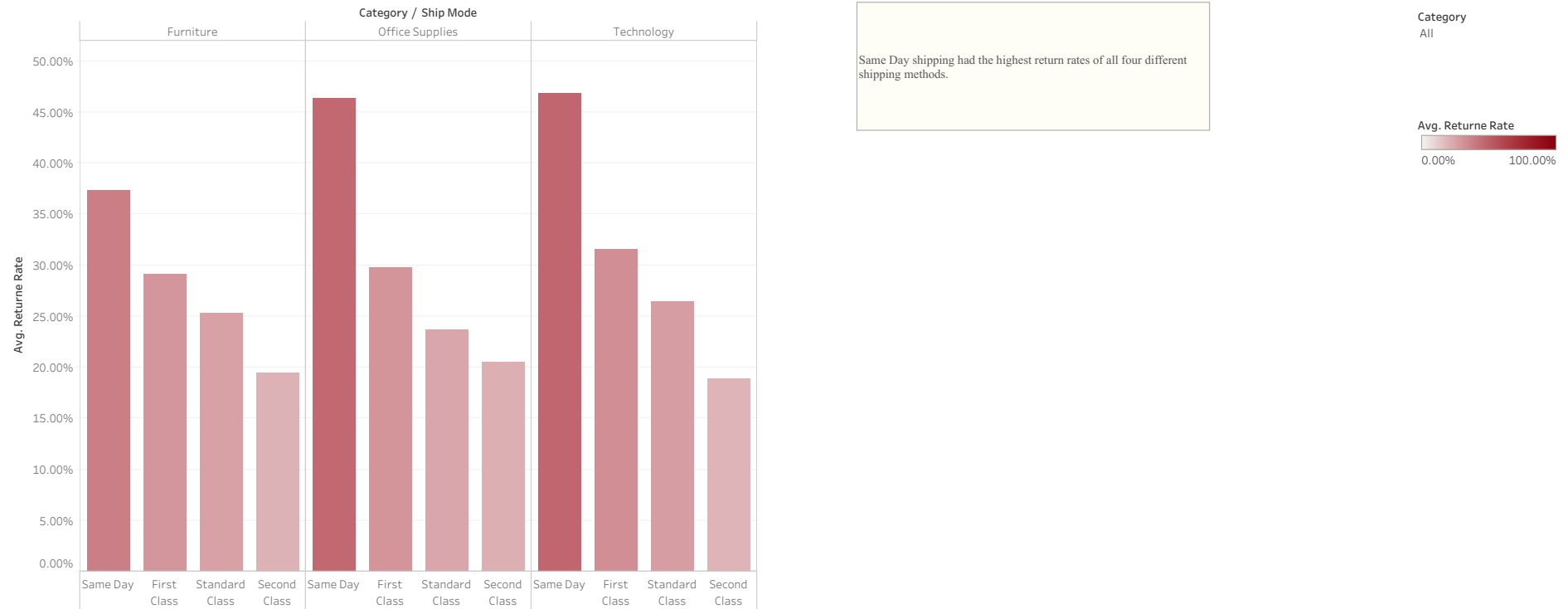


Return Rate by Sub-Category



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Return Rate by Region

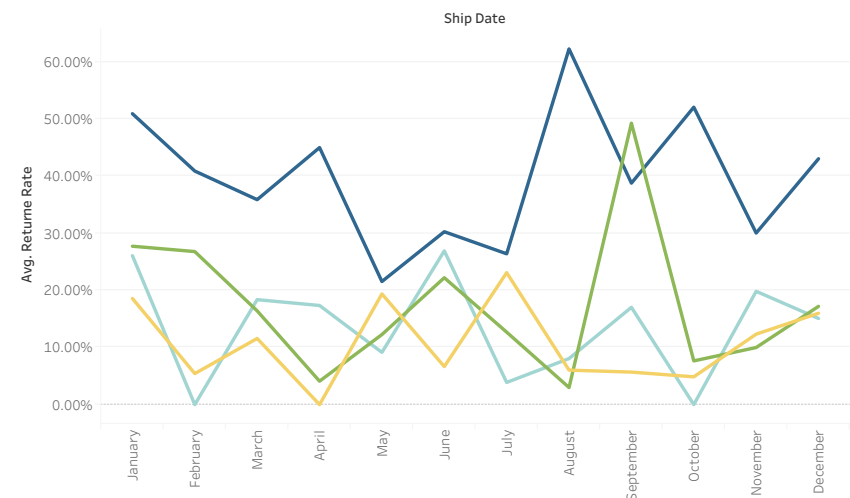
The West region had the average return rate throughout most of the year.

The West region had the highest average return rate throughout most of the year.

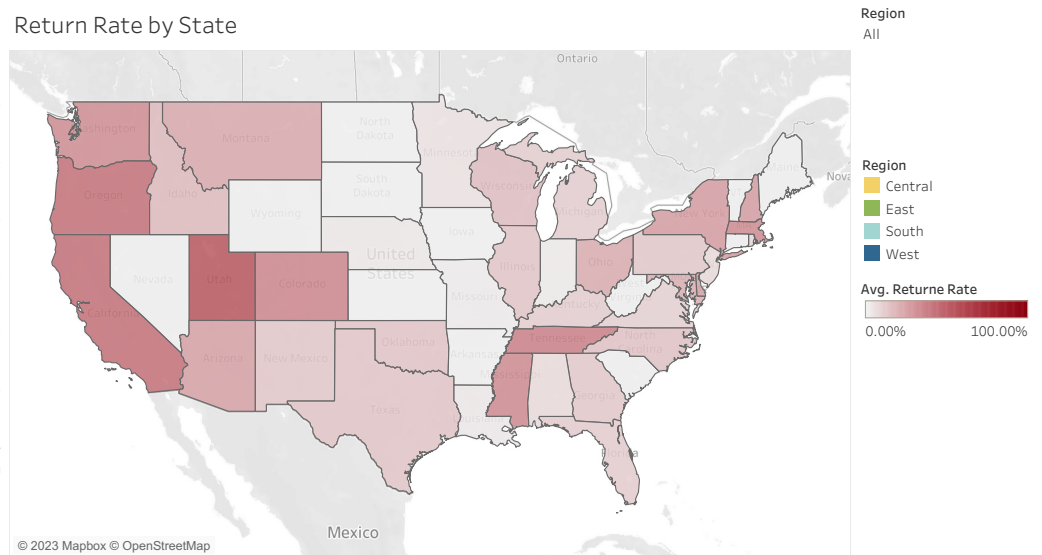
-Return Rate by Shipping Month and Region (Left)
-Return Rate by State in U.S. (Right)

Use the **Region** list filter to focus on one specific region or all of them at once.

Return Rate by Shipping Month & Region



Return Rate by State



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Return Rate by Region

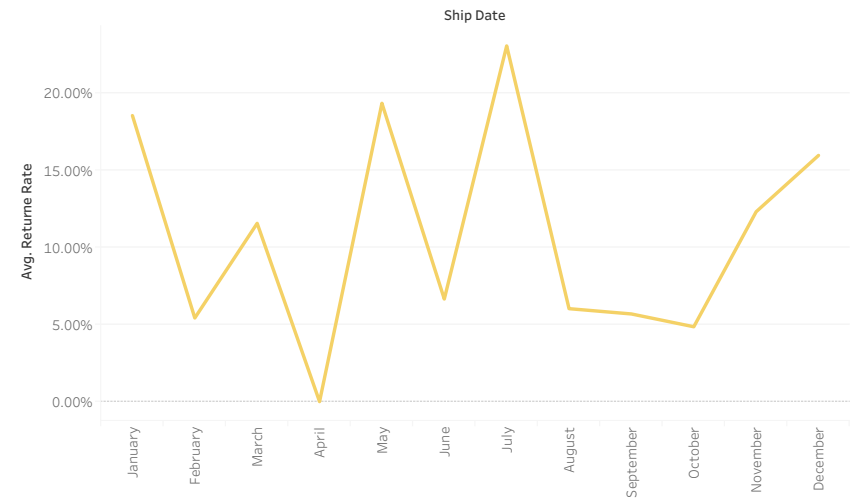
The West region had the average return rate throughout most of the year.

The Central region had low average return rates throughout most of the year.

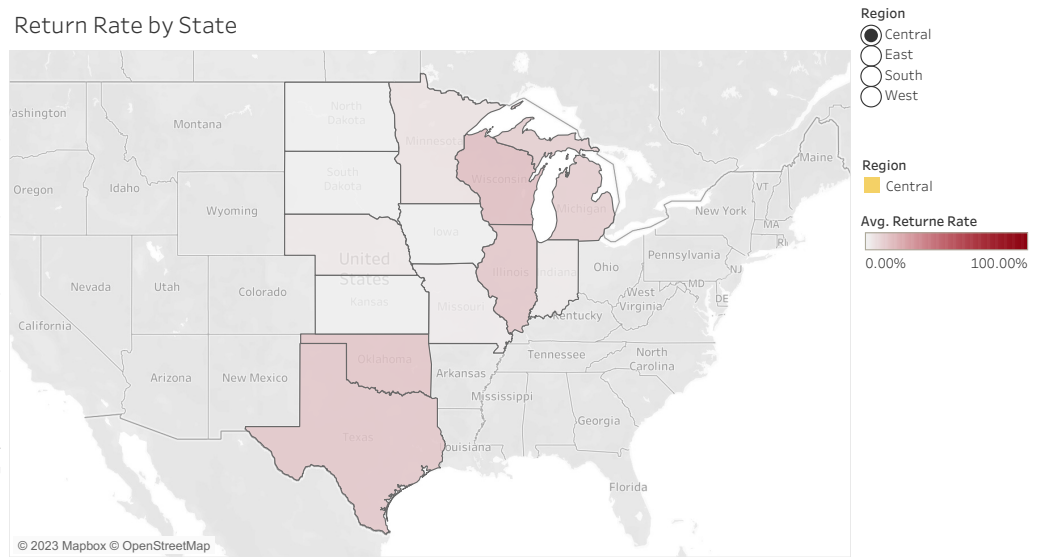
-Return Rate by Shipping Month and Region (Left)
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Return Rate by Shipping Month & Region



Return Rate by State



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Return Rate by Region

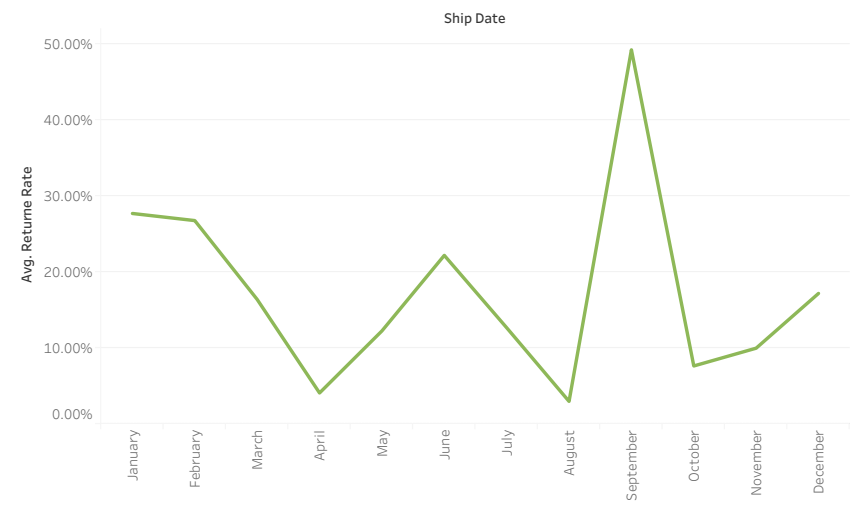
The West region had the average return rate throughout most of the year.

The East region had the second highest average return rates with a spike in September.

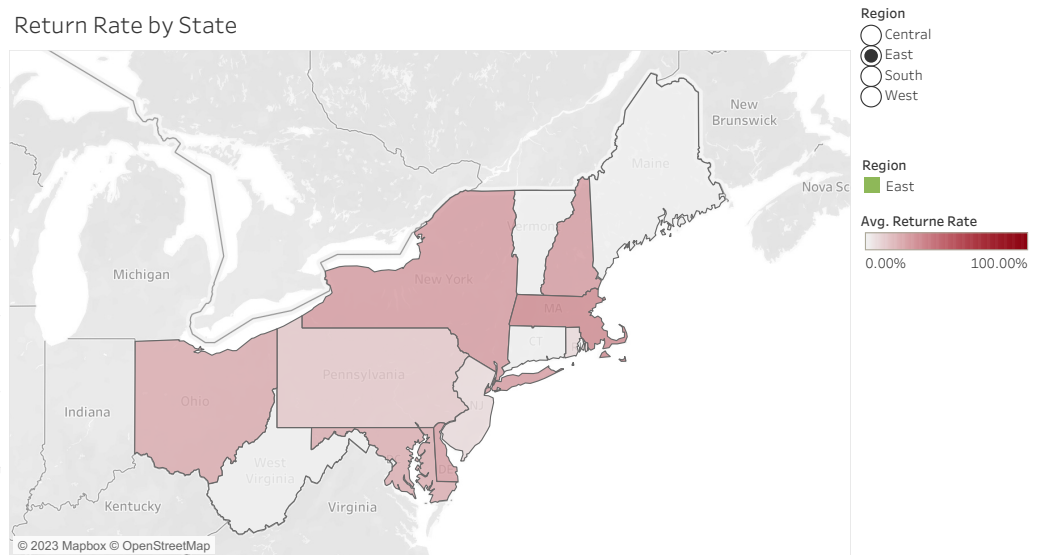
-Return Rate by Shipping Month and Region (Left)
-Return Rate by State in U.S. (Right)

Use the **Region** list filter to focus on one specific region or all of them at once.

Return Rate by Shipping Month & Region



Return Rate by State



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Return Rate by Region

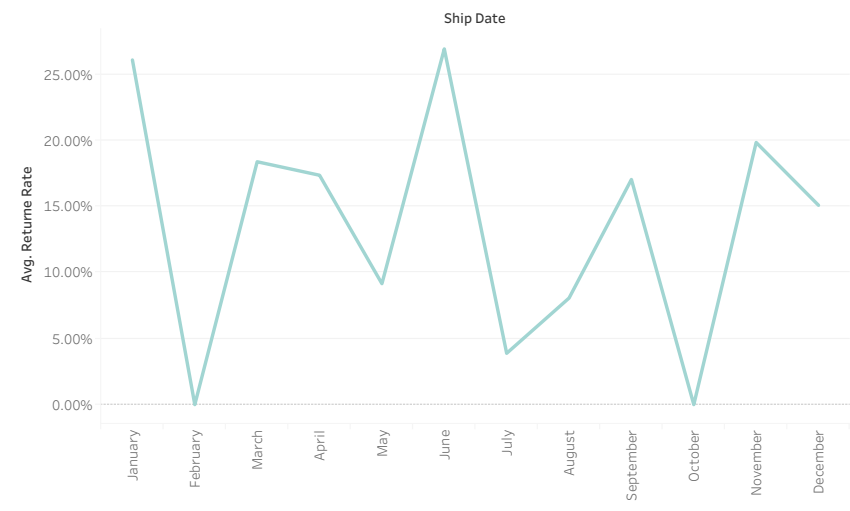
The West region had the average return rate throughout most of the year.

The South region had low return rates with virtually no returns February and October.

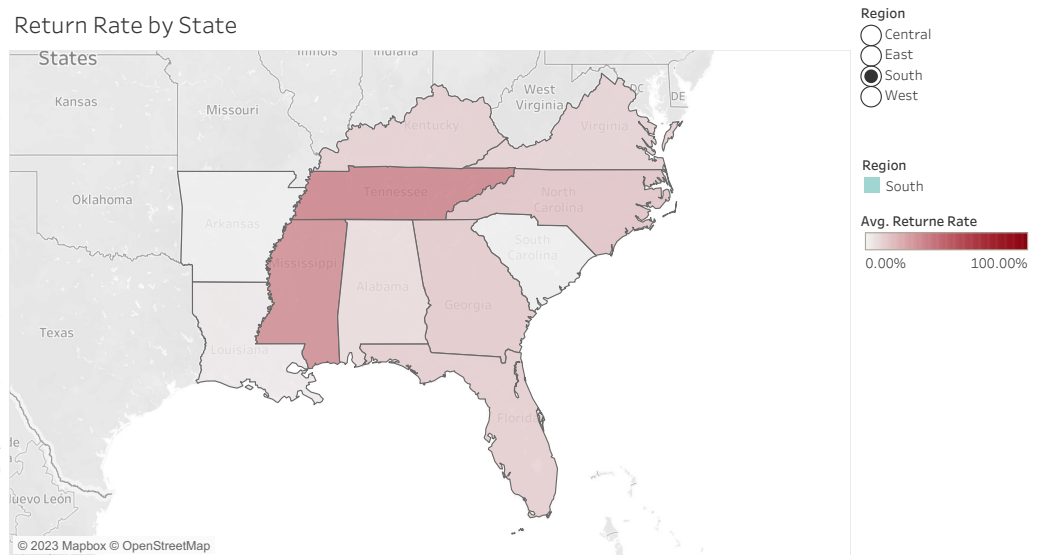
-Return Rate by Shipping Month and Region (Left)
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Use the **Region** list filter to focus on one specific region or all of them at once.

Return Rate by Shipping Month & Region



Return Rate by State



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Return Rate by Region

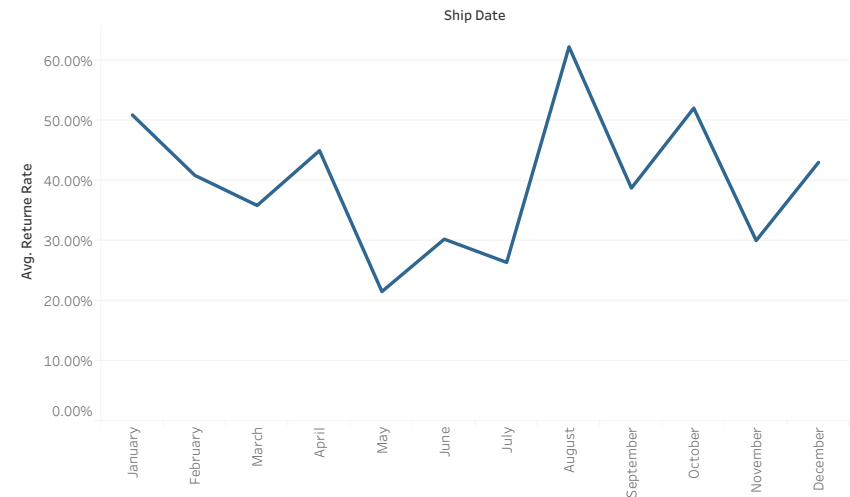
The West region had the average return rate throughout most of the year.

The West region had the highest average return rate throughout most of the year.

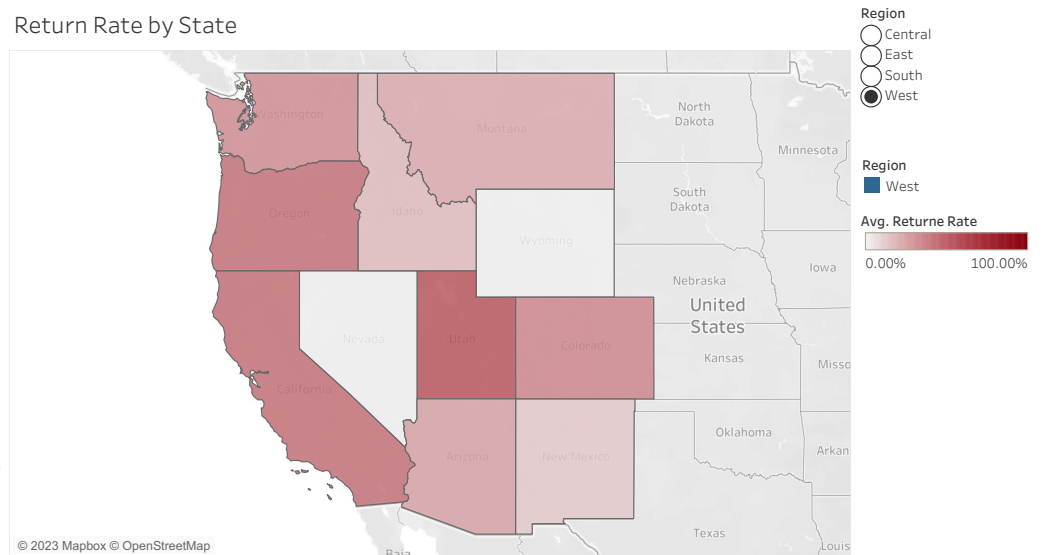
-Return Rate by Shipping Month and Region (Left)
-Return Rate by State in U.S. (Right)

Use the **Region** list filter to focus on one specific region or all of them at once.

Return Rate by Shipping Month & Region



Return Rate by State



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Conclusion & Recommended Actions

High return rates at the superstore can be attributed to many potential concerns. The following are the main points of interest found in the analysis that are leading to high return rates:

-The average return rate for each category is around 25%, so any sub-categories at or above that average should be further inspected. However, machines, fasteners, and chairs had the highest return rates of all sub-categories, and would be great starting points for decreasing average return rates overall. Diving deeper into specific products with high return rates could be most beneficial. Once uncovered, those products could be improved upon or removed from the store and replaced with a similar but higher quality product.

-The West region of the country stands out with the highest return rates throughout the year. Checking on operations, management, and product differences in the west that may be causing the higher return rates would be helpful.

-Same day delivery was the shipping method that had the highest average return rates of the different methods. It would be beneficial to investigate how the different shipping methods differ in their overall process. It is possible that the company that takes care of same day shipping does not treat products well during their delivery.