Sprint 5 Project Presentation

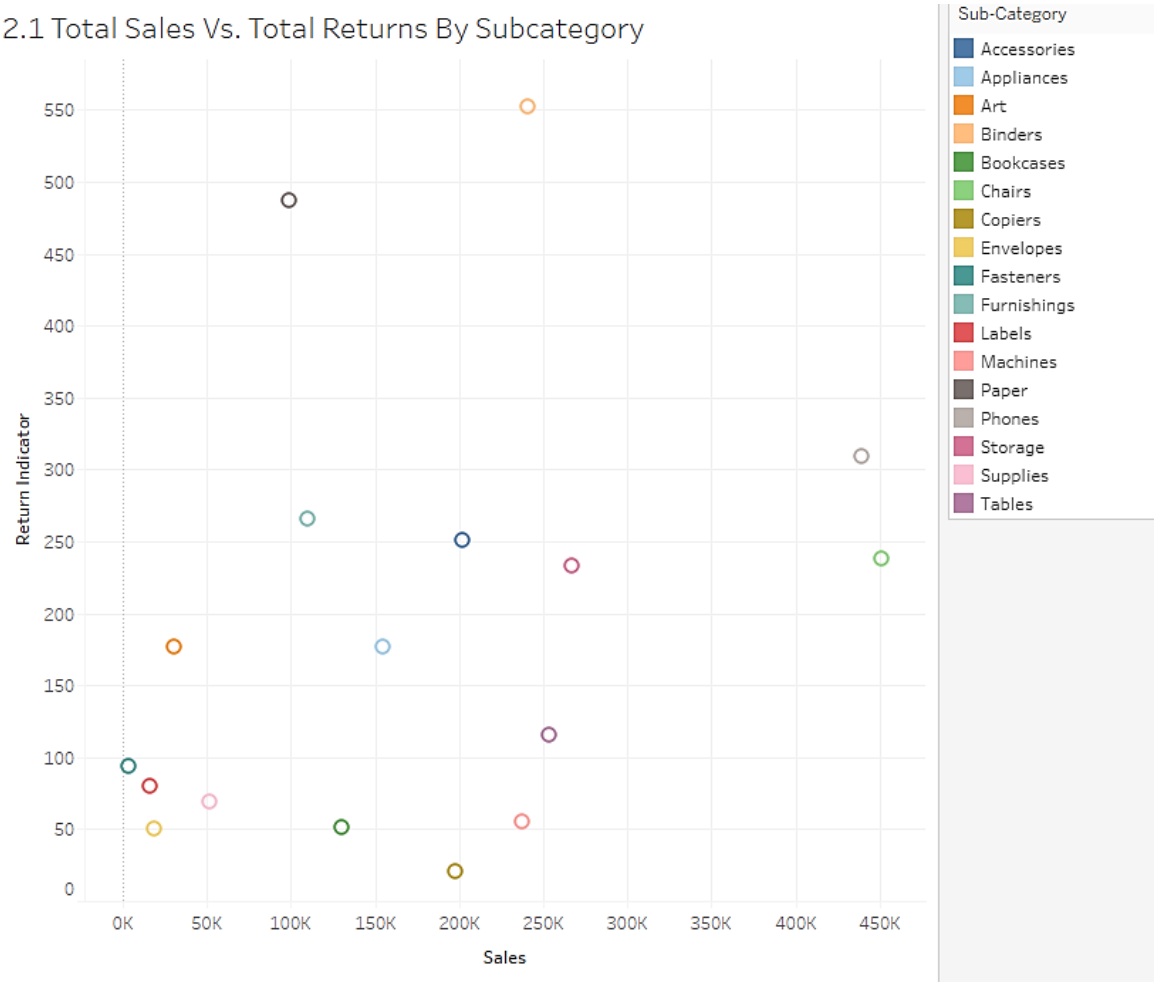
Summary of Returns Analysis

Returns should be measured by the return rate since it highlights the proportion of items being returned relative to total number of returns. On the other hand, total returns only shows the absolute number of returned items, which can be misleading when return volumes across different timeframes and product categories are compared. Therefore, it is better to use the rate of returns when trying to find the average rate of return, whereas the total number of returns is better for total count of returns.

The key causes of returns are the product category, time of the year, and the geographical location among other factors.

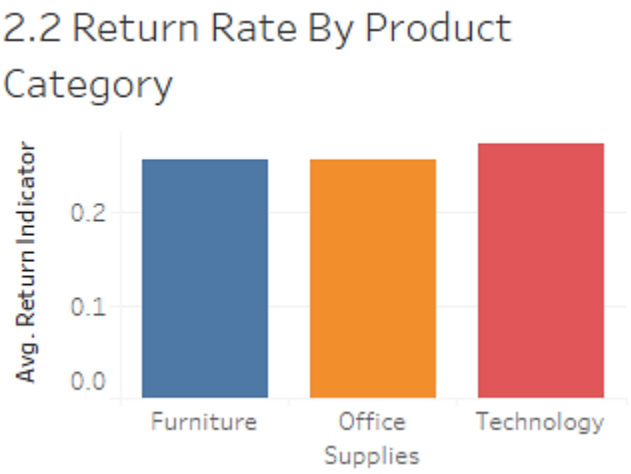
Overview of 2.1 Total Returns Vs. Total Sales By Sub-Category

This visualization shows the correleation between total returns and total sales by subcategory. According to the chart, there does not seem to be a strong correlation between high a number of sales and the number of returns. The subcategory with the highest returns is Binders followed by Paper. However, there are several subcategories between them that have significantly lower total returns than binders and paper, so there seems to be a stronger correleation between total returns and subcategory than total returns and total sales.



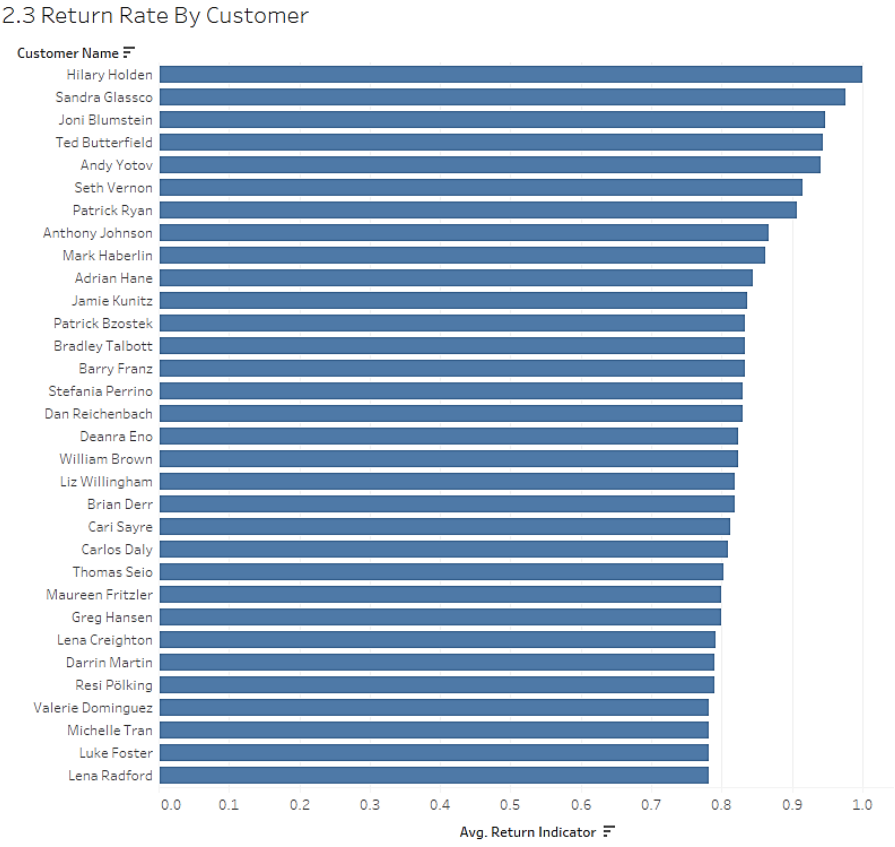
Overview of 2.2 Return Rate By Product Category

This visualization shows the correlation between the return rate and product category. Products from the Technology product category have the highest return rate, while the the other two categories have about the same return rates.



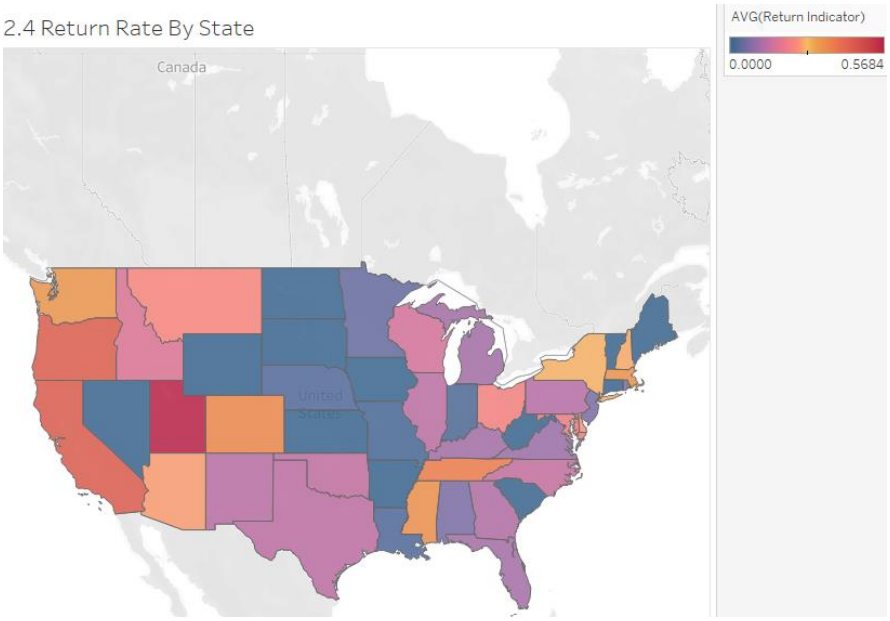
Overview of 2.3 Return Rate By Customer

This visualization shows the correlation between the return rate and customers ordered more than once, it is sorted in descending order by the customer name. The first seven customers have the highest return rates, with Hilary Holden being the customer with the highest return rate of 1.



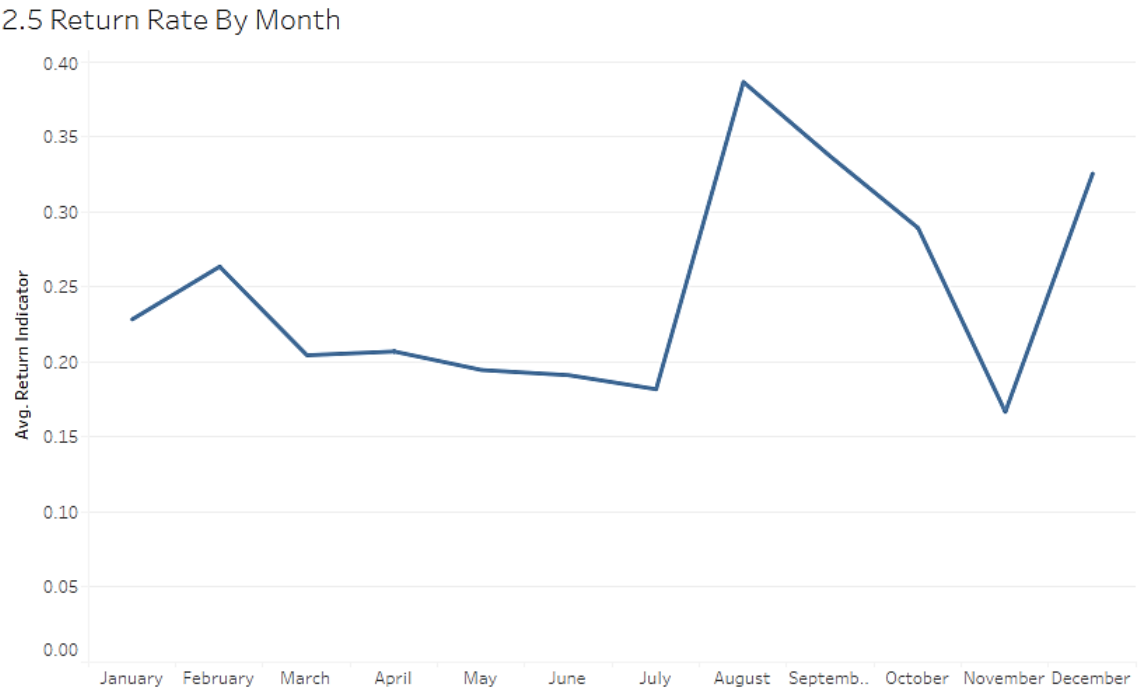
Overview of 2.4 Return Rate By State

This visualization correlates the return rate to states of the United States of America. The states in the Western part of the US have some of the highest return rates in the entire US. Utah, specifically, has the highest return rate followed by California and Oregon.



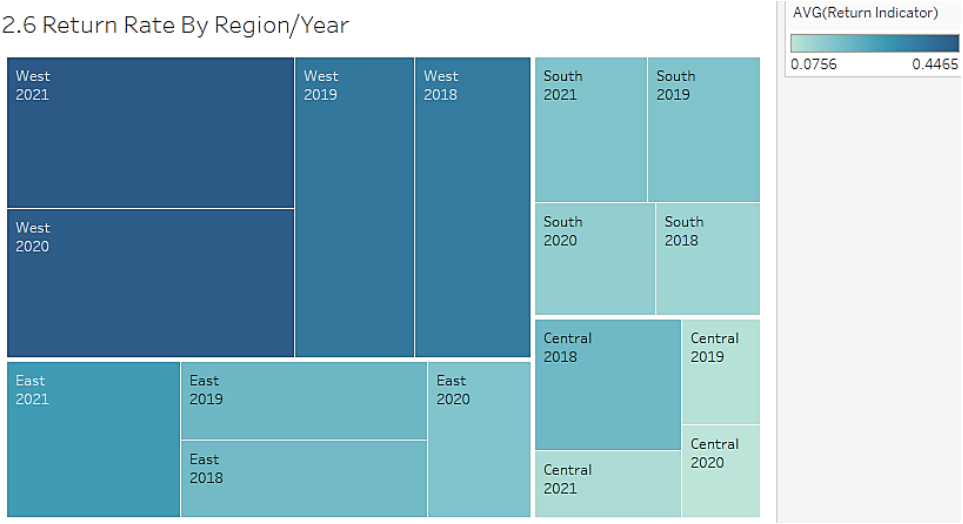
Overview of 2.5 Return Rate By Month

This visualization shows the correlation between return rate and order month. The months with the highest return rates are August and December, which coincide with the start of a new school year/college year and the middle of the school year/college year. December is also the month of highest gift purchases for Christmas.



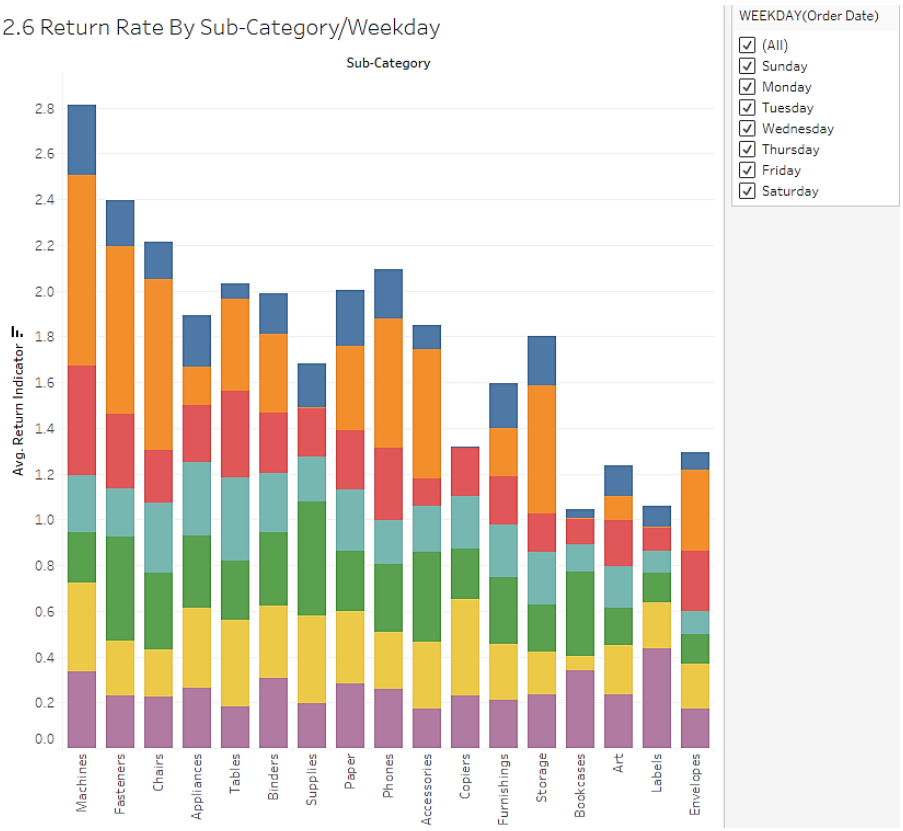
Overview of 2.6 Return Rate By Region/Year

This visualization shows the return rate for region and order year. The region and years with with highest return rates is the West region in 2020 and 2021 followed by 2019 and 2018.



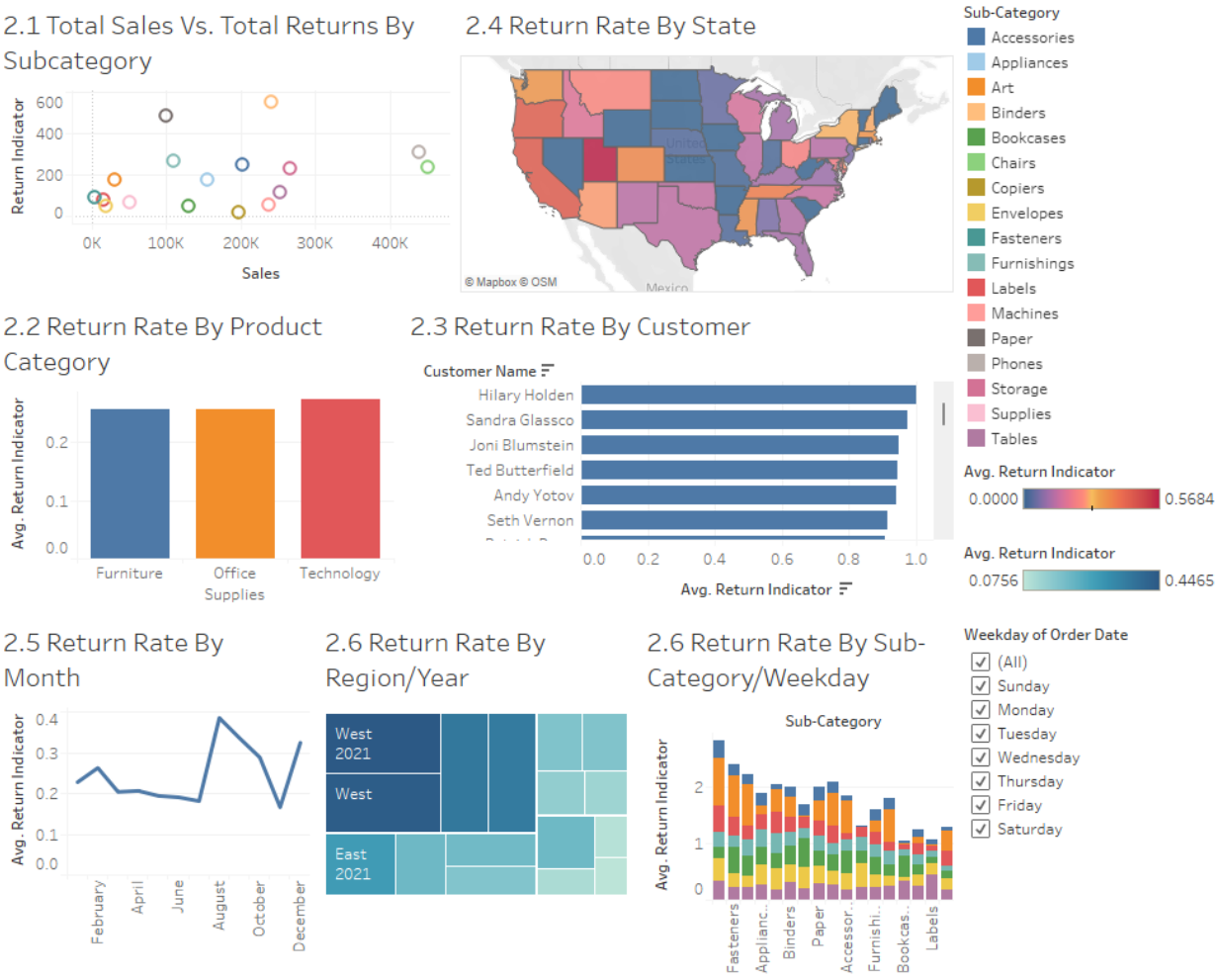
Overview of 2.6 Return Rate By Sub-Category/Weekday

This visualization shows the return rate for subcategory and weekday of order date. The subcategory with the highest return rate is Machines on Mondays and Tuesdays followed by Fastners and Chairs on the same days. The return rate is highest on Mondays, Fridays, and Saturdays and for subcategories Machines, Fastners, and Chairs.



Dashboard Implementation Demonstration

This dashboard can be interpreted by hovering over the data to see each data point's information. The legends and filters also helpful. Certain aspects of the charts' data (root causes) can be focused on by selecting them in the filters. By applying the weekday filter, we can identify that the return rate is highest for subcategories on Mondays, especially Machines. Once we identify the root causes, we can plan how to decrease the return rate due to those causes.



Conclusion: Implementation of Dashboard

The superstore should get rid of products that belong in the Binders and Paper subcategories. Additionally, the store should reduce products in the Technology category. August and December should be months were the superstore should offer the most discounts and offers on products to encourage customers to keep their purchases. The superstore should try to ask/survey customers like Hilary Holden and Sandra Glassco to find out how their shopping experience can be improved.The store should place more focus on the types of products being offered in Utah, California, and Oregon since customers may have different preferences. Lastly, the store should reduce the number of machines and fastners being sold since they have high return rates on weekdays.