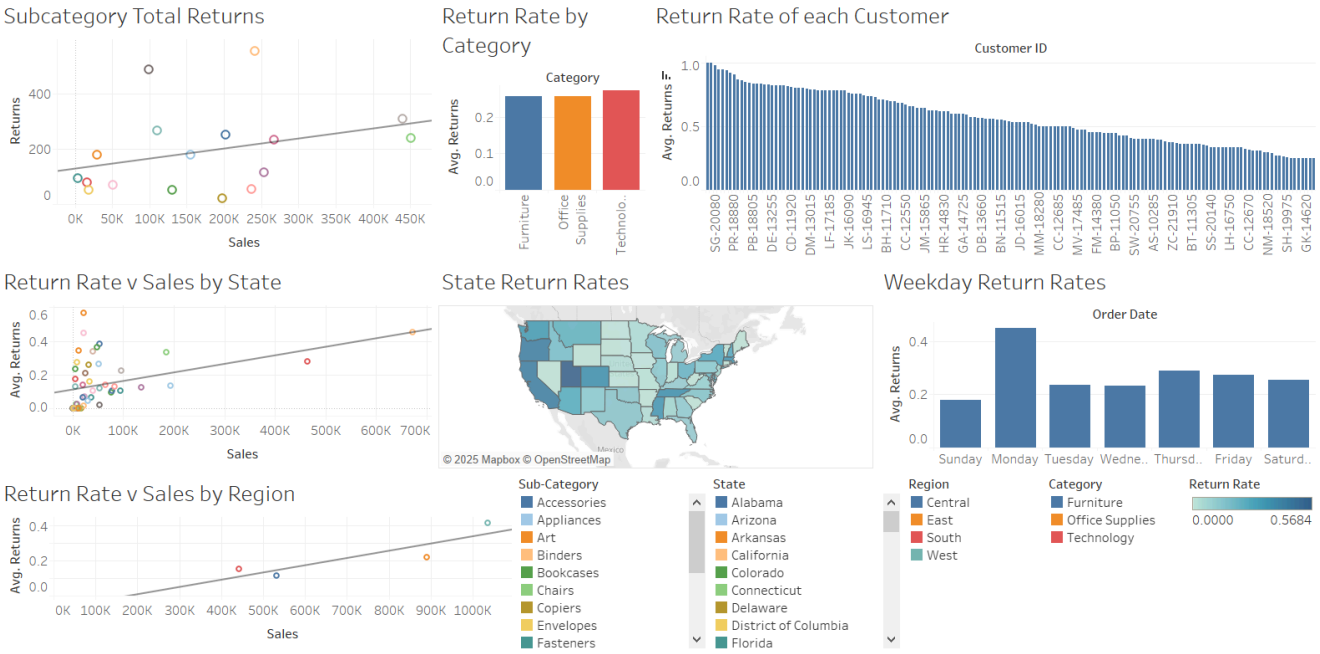
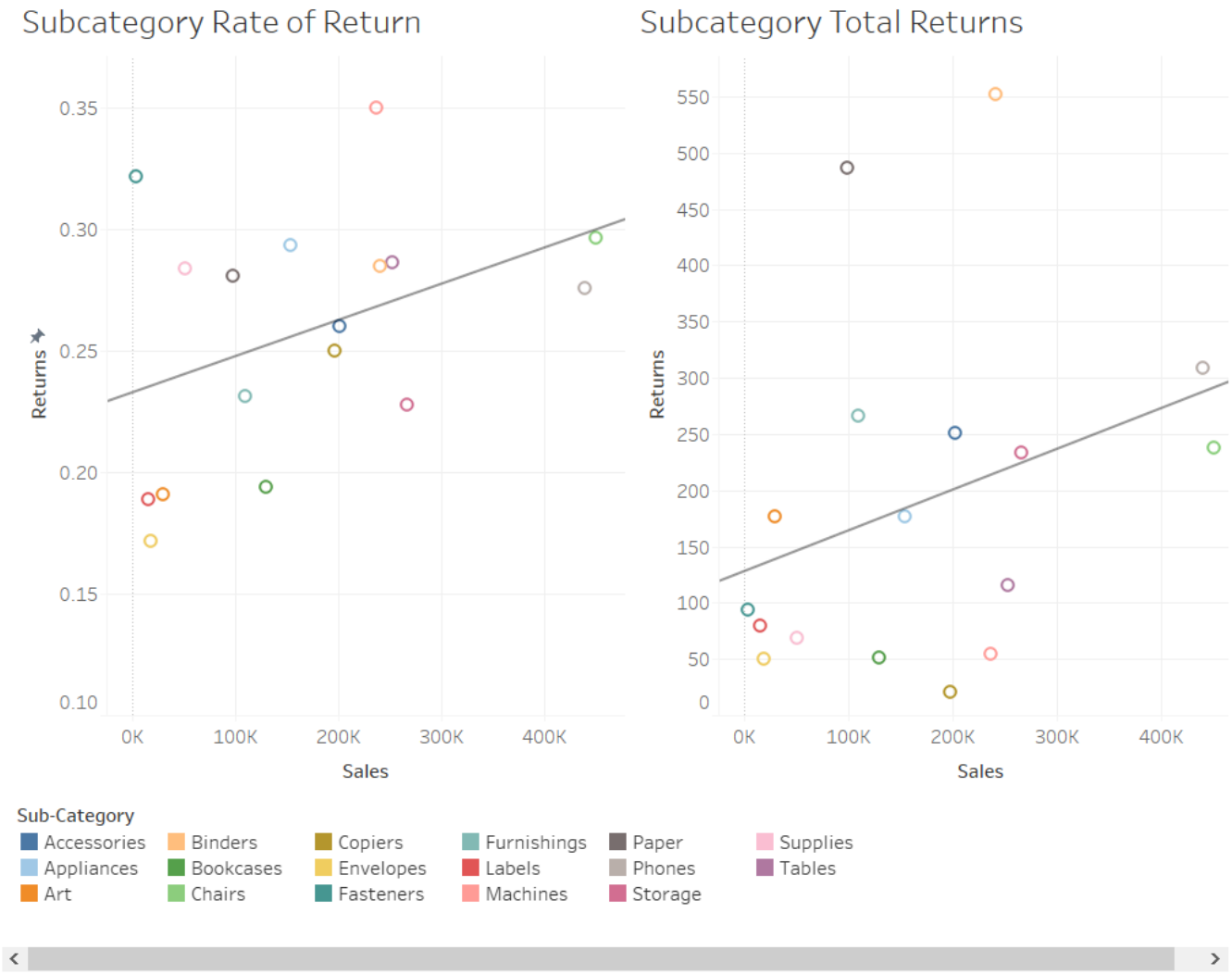
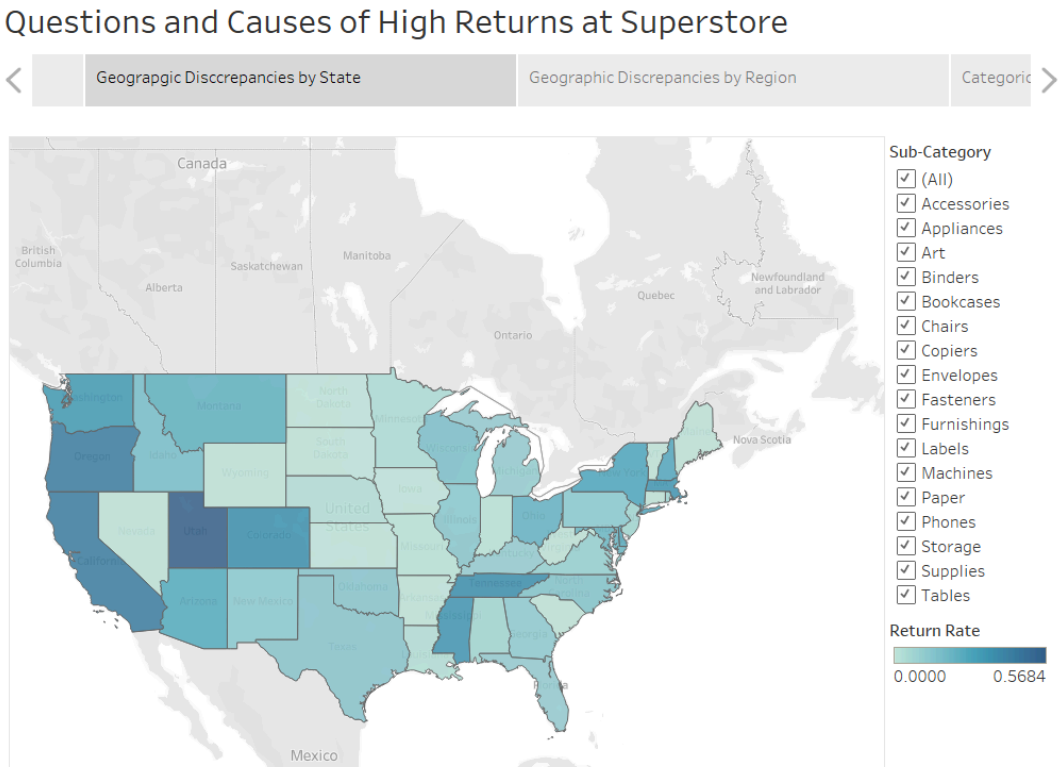


I'm opening with an overview of the full dashboard. This covers the main scope of the analysis in an attempt to find what is causing returns for Superstore. The first three charts ranging downward on the left represent scatters plotting the rate of return or total returns against different dimensions like the subcategories of our products, state of delivery, and region of delivery. The top center graphs the return rate of the different main product categories we sell. Top right shows the return rate for all our customers who purchased products during the analysis period. We intended only to show the highest return rates here to see if they are only a select group of customers who partake in the largest quantity of returns. In the center is map which depicts the rate of return by state. We will be returning to this map so make note now. And lastly, on the bottom right, we depict the return rates by day of week to see if there are serious outliers in the timing of these returns. Also, below the weekday returns chart is a legend with corresponding color coding for each of the graphs, mainly useful for the scatters and the state return rate charts.



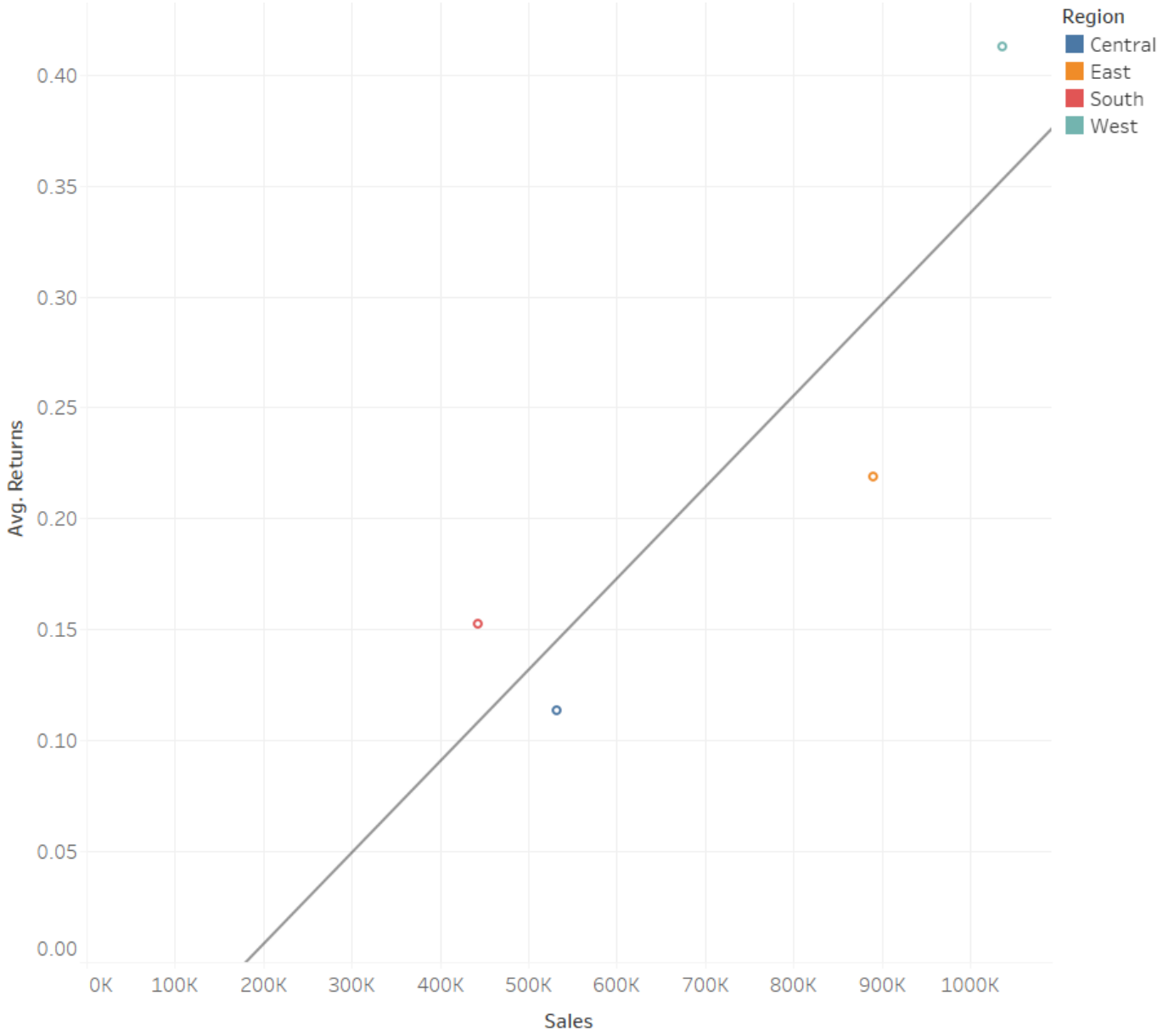
Firstly, preceding the discussion of causes or possible further analysis, let's discuss whether we use the rate of return or the total returns as the best metric for understanding the issues. I will focus on three subcategory points within both charts to underline my determination. The subcategory fasteners has a high rate of return at around 33% but has a low number of returns in total. The rate of return is able to show us that an issue with the product or delivery method of certain products regardless of the amount sold or total sales of that product range. The same could be said of machines; a high rate of return with less total returns. The use of return rate is more important but in all likelihood it is just as important to utilize both to get the whole story.

Thus, with a brief explanation of why return rate is more important for our studies let's use it on a more focused tour geographically of our deliveries and see one of the main issues and possible causes of the undesired returns.

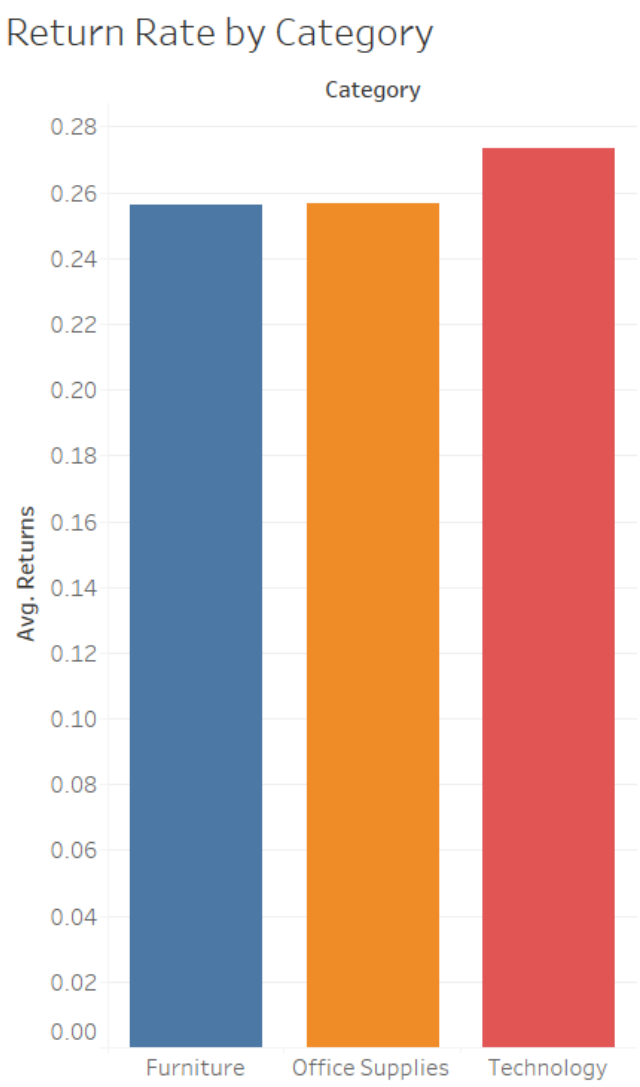


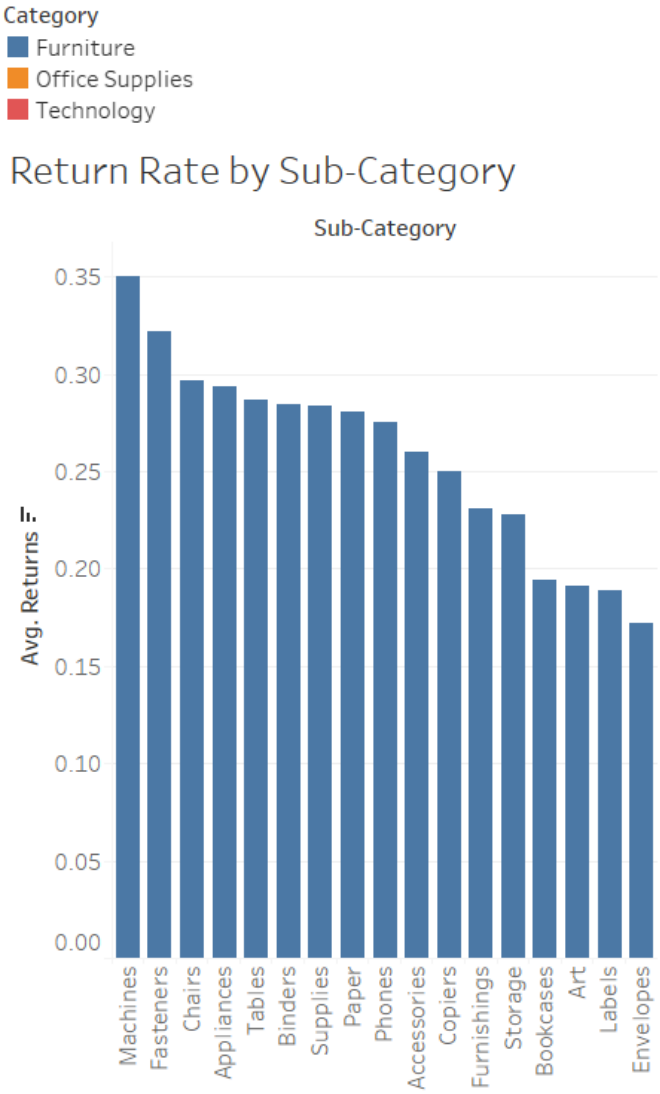
Along with subcategory return rates, I think this to be where most further analysis needs to be centered on. Some of the highest discrepancy in the data of comparative return rates crop up here in the state by state average return maps. There are a handful of states like Utah, California, Oregon, Tennessee, Mississippi, Colorado, and Washington which are showing much higher return rates than the rest of the states.

We will see region data on the next side.



This does seem to be a regional problem as well. The states in the west region generally have a higher return rate than the rest of country, by around 18% to the next highest. However, the regional return rate does generally follow the trend of the rest of the regions. The individual states are having an outsized impact on the data but the regional increase in the return rate is still important to remember.





Moving on to another area of possible returns causes. This is the a category and subcategory breakdown of the return rate. What is striking here to me is the indifference of rate between the larger categories, only around 3% total. Thus, the analysis gets refined to subcategories to find the culprits. And here, using the highs of the category return rate of ~27% we can single out all the subcategories that are returning at a higher rate. This includes phones, paper, supplies, binders, tables, appliances, chairs, fasteners, and machines. If we return to the subcategory scatters for return rate and total returns we see that two are especially egregious mainly fasteners and machines which have low total returns and very high return rates. Fewer of these items are purchased and much more of them are returned.

Suggestions for Further Analysis/ and Implementation of Current Analysis

Possible further analysis can begin around the dates of shipment and order dates as compared with the problem areas as determined above. Is there a correlation between states receiving packages much later than they need them? Our products are no longer needed by the time they arrive? I would focus further within this question to subcategories of smaller items, especially ones that could be found in retail stores.

In terms of implementation, a detailed study needs to be taken to find data and testimony from our customer base as to why products are returned so frequently out of the western region and specifically the states with the high return rates. Is this a function of the location of our main distribution center? Are packages being damaged at a higher rate as they make their way to local distribution centers in each state? Using the filters on the state returns map, it is not evident that any subcategory of products are overwhelming contributors to the high return rates. It seems that the locations themselves are the issue. However, disregarding location but remaining with possible issues with shipping, there are increases in return rate with certain product subcategories. It could be that subcategories of products which are fragile or are difficult to package are becoming damaged in transit. Thus the greater distance to the western states, if that is the case, is incurring more damage over time by virtue of the longer time in transit.

We need more customer feedback to determine this. Returns should be prompted by a section that allows the customer to explain exactly why, in proper recordable subcategories, that they felt the need to return the product. This will allow us to determine if the products are faulty, thus a problem of specific product ranges or if it is an issue with our delivery system e.g. packaging and transit.