Coursework on the subject of
ST2187 Business analytics, applied modelling and prediction
(2023-24)

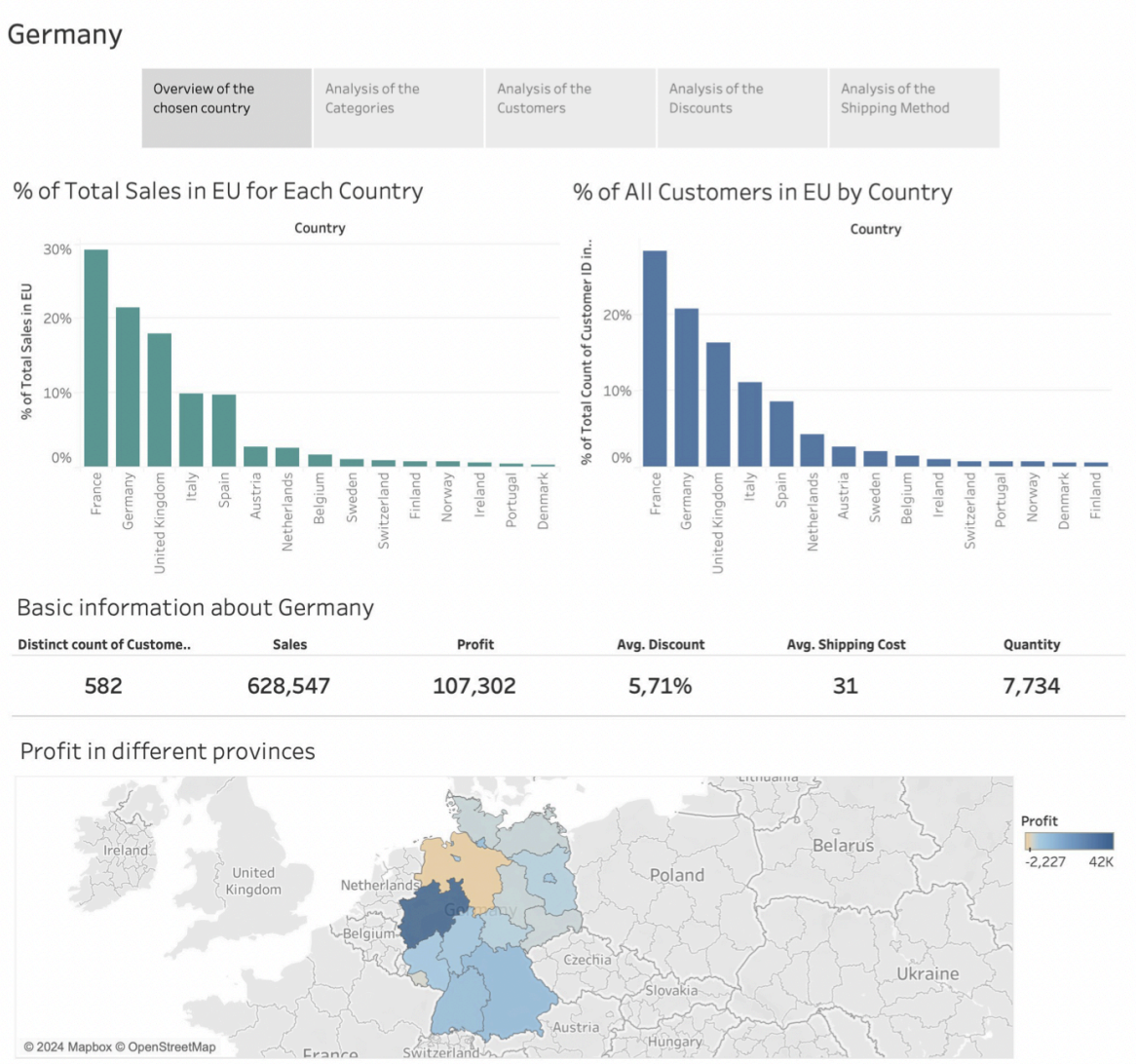
Student number: 220679381
Word count : 842

Summary

The German market is the second largest in all of Europe. Sales of almost all product categories are profitable, with the exception of 'Tables'. The 'Tehcnology' category is the most profitable of all. But as we have seen not all regions of this country are doing equally well. Having analyzed the market situation from different angles, we can offer solutions for business development and increasing sales. For example, we have seen a rather weak growth in the number of customers, which can be stimulated by developing and implementing campaigns. A more detailed description of the market situation on five key sides can be found in this paper.

Table of content

Overview of the data



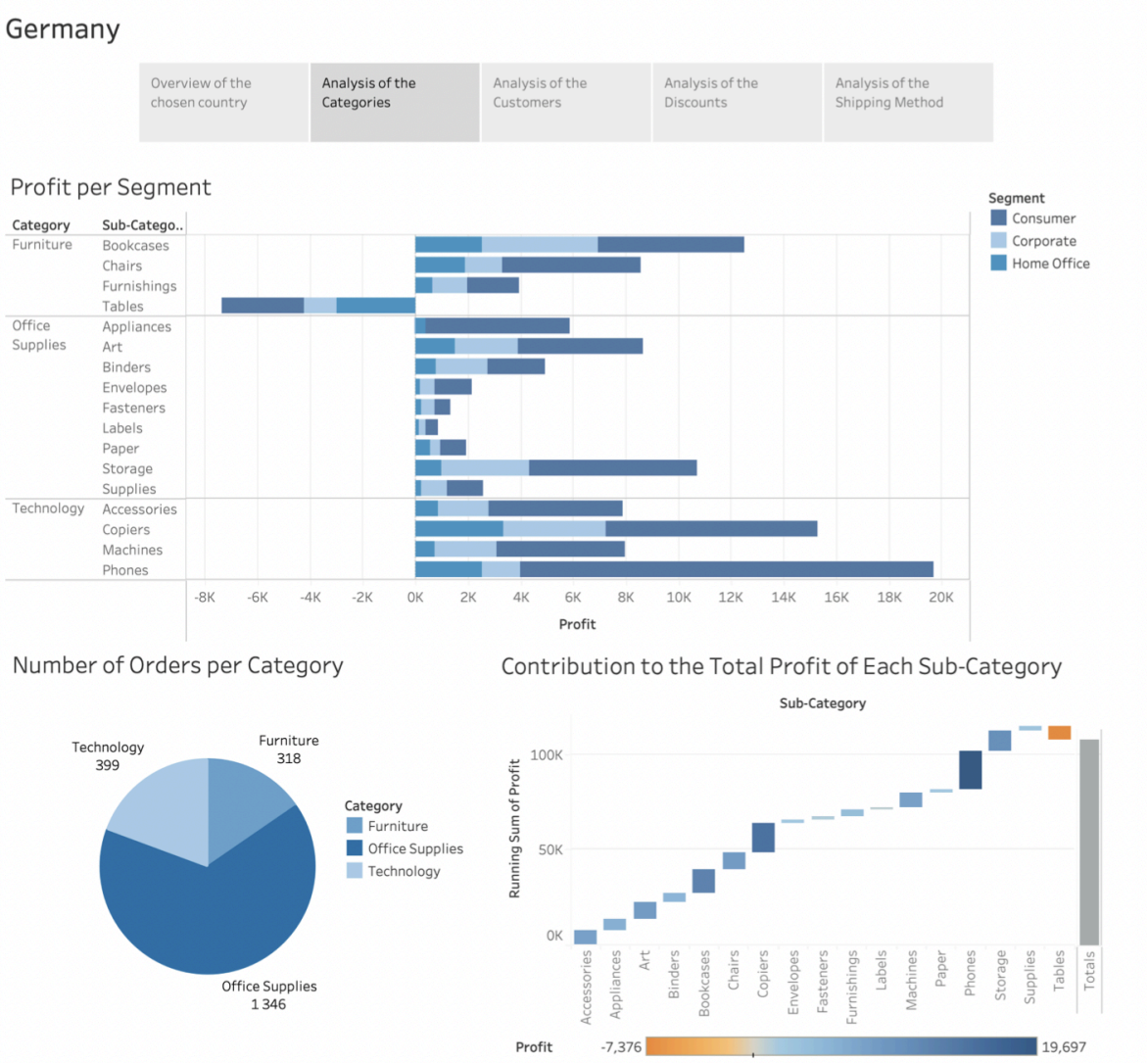
In order to understand what you have to work with, you need to study the dataset and highlight important nuances. The European market was chosen for further analysis. Let's look at the distribution of shares of total sales of the entire EU market by countries included in this region. From the graph it is clear that France occupies the largest part of the market in terms of sales - almost 30%, in second place is Germany with a little more than 20%. Moreover, these same two countries have the most customers, with France having about 30% of all EU customers and Germany about 20%, as can be seen on the far right of the graph above.

In my paper I will be analyzing Germany using this data.

As you can see from the bottom graph which shows the profit level of each province, the southern regions make more profit than the northern regions. The most profitable province is North Rhine-Westphalia, which neighbors, interestingly enough, the lowest profitable

province, Lower Saxony. The state of Bremen is not prevented from being much more profitable than the Lower Saxony that surrounds it.

Analysis of the categories



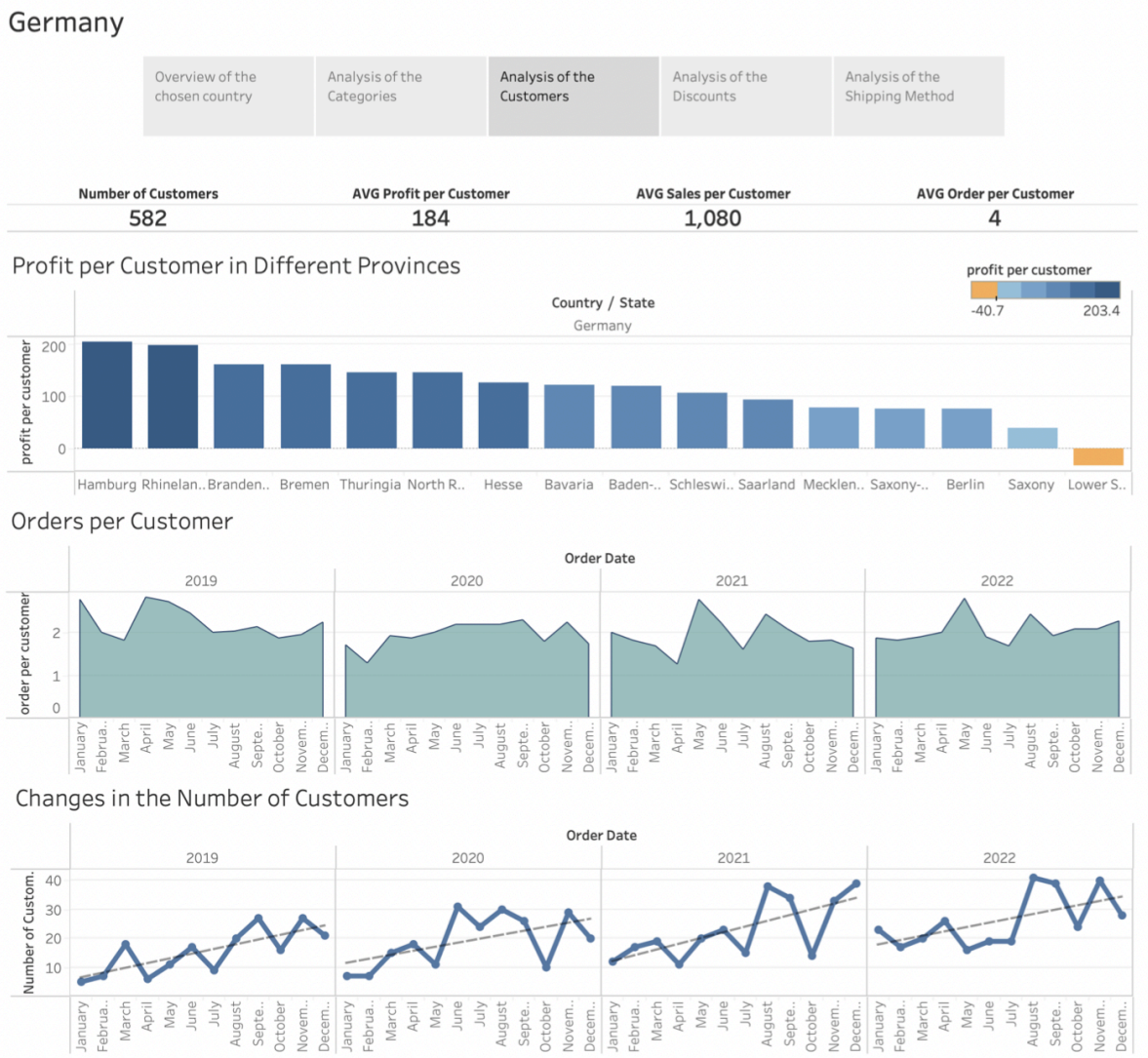
One of the important steps is to analyze categories and subcategories. The 'Office supplies' category accounts for the most orders, but the 'Technology' category, namely the 'Phones' subcategory, generates the most revenue.

The only subcategory that makes a loss is 'Tables', which belongs to the 'Furniture' category, even though the other subcategories in this category make quite a lot of profit.

It should also be noted that the main customer is the 'Consumer' segment. Even for goods that seem to be in demand in the 'Corporate' segment.
The overall profit is at a fairly high level, as all but one subcategory contribute to its increase.

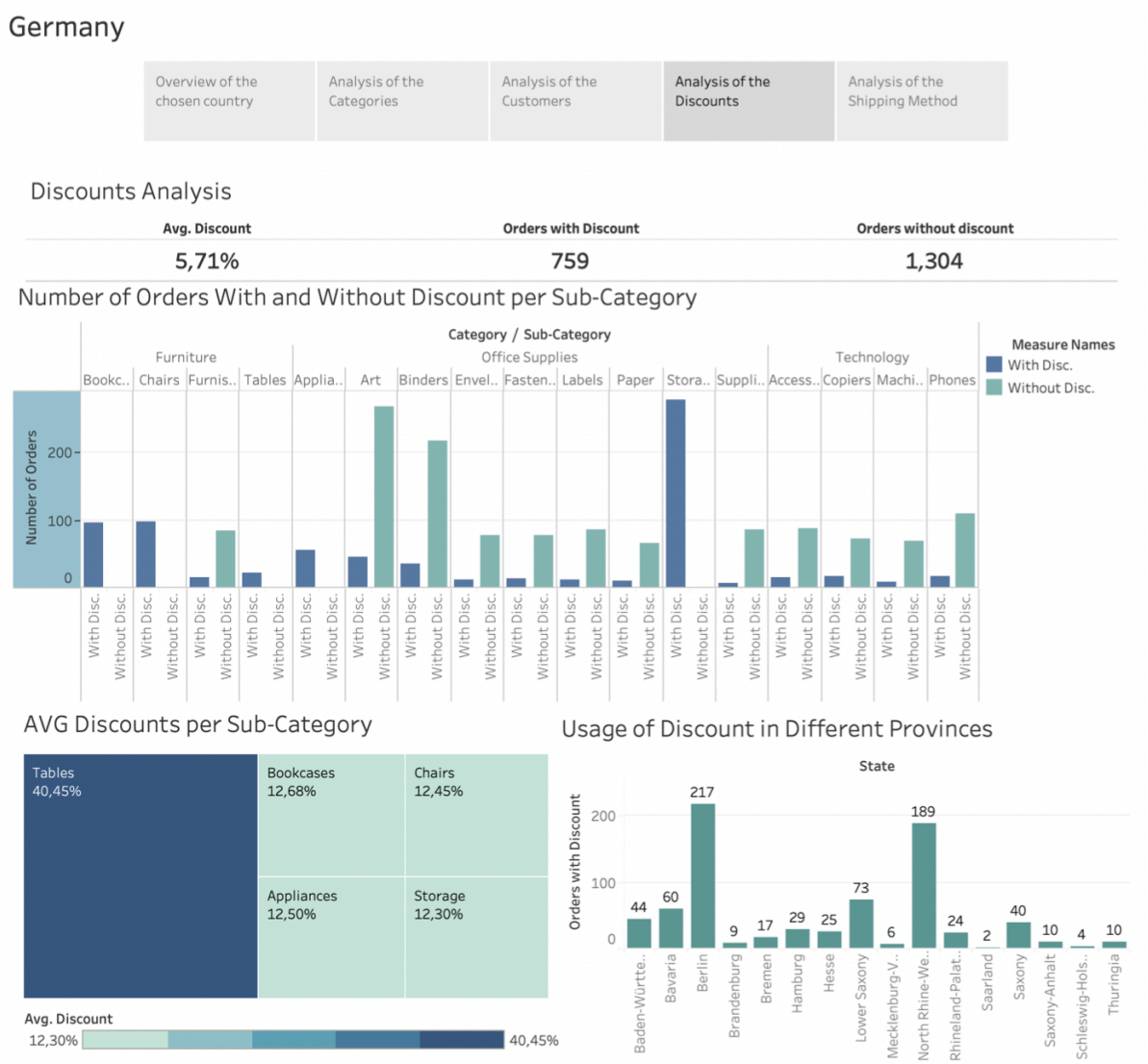
Based on these graphs we can conclude that companies specializing in the sale of goods from the category 'Technology' should consider the German market as a good profit opportunity, as well as there is a good profit for companies producing fittings, except for tables (the sale of tables in Germany brings losses).
As for companies already operating in the German market, I would advise them to take steps to increase their sales share to the 'Corporate' segment, especially in the 'Office supplies' category, as these are potentially large customers that can increase their profits a lot.

Analysis of the customers



There are only 582 customers in Germany, and each of them has already placed an average of 4 orders. The state of Hamburg is first in terms of the average profit per customer. However, as we saw earlier, it is not one of the top states with the highest profits, since it is quite small in size and does not have a lot of people living there. But companies should pay attention to this area, as according to the data, residents of this province are willing to spend a significant amount of money on purchases, which could bring a good profit to the company.
In addition, there has been a trend towards an increase in the number of buyers. Unfortunately, this increase has been quite small, with about 20 new customers per year. However, the average number of orders per customer per year is around 2.
Given this current situation, it would be advisable for companies to launch an advertising campaign to attract new customers and encourage existing ones to make purchases. For example, a campaign could be 'Call a friend and get an N% discount', which would encourage long-term customers to make more purchases and attract new ones.

Analysis of the discounts

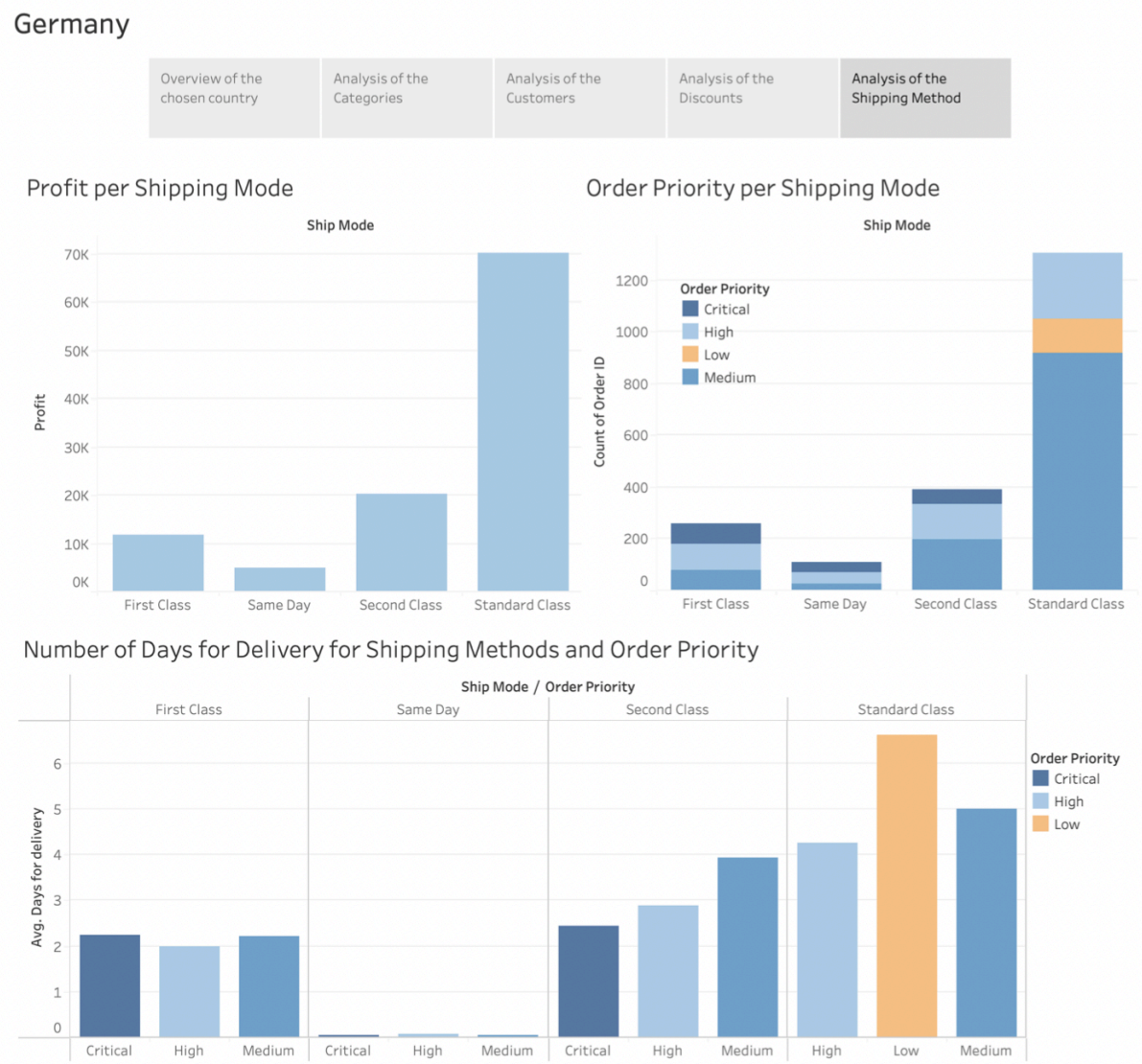


One-third of all orders are discounted. As you can see from the chart, the already familiar North Rhine-Westphalia is in second place in terms of the number of discounts, but despite this, as we have already learned, is the most profitable.

It is interesting to note that there are subcategories of goods in which orders are made only with a discount, so for example in the category 'Furniture' only 'Furnishings' are bought without a discount, and all other subcategories are bought only with a discount. These same subcategories have the highest average discount values. These groups of products are rarely bought due to their long life span, but they are still basic when furnishing a home or workspace.

I think sellers of product categories in which the profit is not so big (these subcategories can be seen in the section 'Analysis of the categories') and in which the number of orders with a discount is close to zero can think about increasing the number of discounts to attract customers.

Analysis of the shipping methods



In these graphs, we see a logical correlation between the order quantity graphs and the profit generated among the different delivery methods. Note that orders with critical priority level are not ordered by standard delivery class. But only standard class delivery is used to deliver low-priority purchases.

Based on the graph, the delivery works well, as the delivery time corresponds to the selected method.