

# COURSEWORK

EMFSS ST2187

BUSINESS ANALYTICS, APPLIED MODELING AND PREDICTION

STUDENT NUMBER:

**200693280**

## **The executive summary**

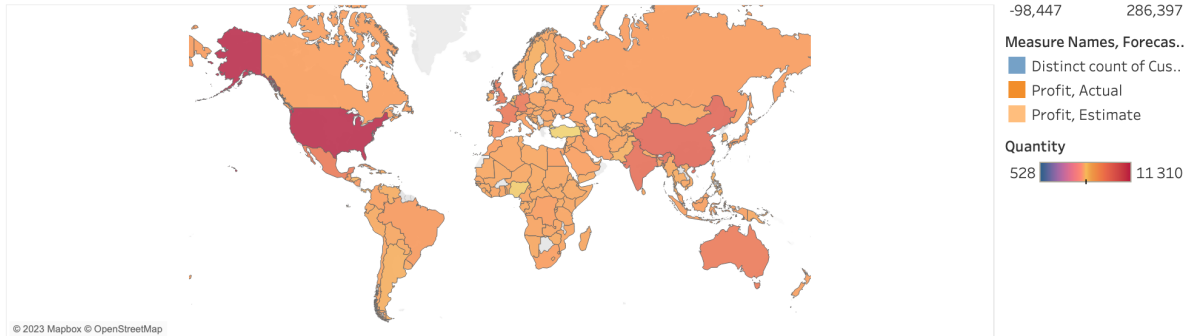
This report analyzes dashboards which provide information about customer interest in a company's products all around the world for the period of 4 years. Provided work shows us trends, profits, shipping costs, quantities and many more various graphs, charts and tables. In my work, I mainly focused on shipping costs, finding the dependence on discounts and profits, and solving problems with the largest negative profits. Also some weak spots of the company will be mentioned here and recommendations and strategies will be offered to improve profitability.

Table of contents:

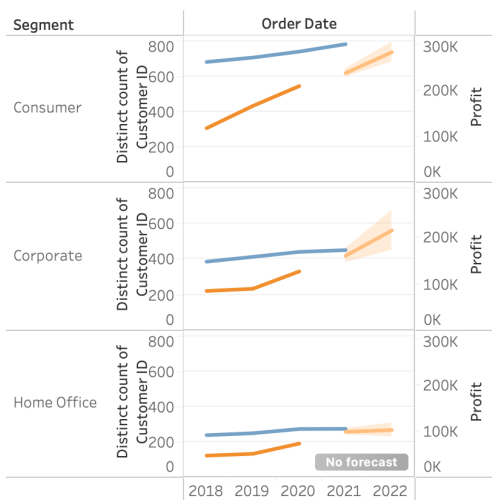
<b>Dashboard 1</b>	<b>2</b>
<b>Dashboard 2</b>	<b>3</b>
<b>Dashboard 3</b>	<b>4</b>
<b>Dashboard 4</b>	<b>5</b>
<b>Dashboard 5</b>	<b>6</b>

## Dashboard 1

Profit map



Amount of customers and profit graph



Quantity graph

		Segment		
Category	Sub-Catego..	Consumer	Corporate	Home Office
Furniture	Bookcases	4 300	2 622	1 388
	Chairs	6 319	3 706	2 311
	Furnishings	5 844	3 391	1 990
	Tables	1 539	1 016	528
Office Supplies	Appliances	3 138	1 872	1 068
	Art	8 712	4 657	2 932
	Binders	11 310	6 352	3 767
	Envelopes	4 346	2 515	1 519
	Fasteners	4 281	2 598	1 511
	Labels	4 909	2 591	1 822
	Paper	6 426	3 801	2 595
	Storage	8 670	5 145	3 102
	Supplies	4 233	2 705	1 605
Technology	Accessories	5 664	3 307	1 975
	Copiers	3 805	2 242	1 407
	Machines	2 557	1 399	950
	Phones	6 104	3 646	2 120

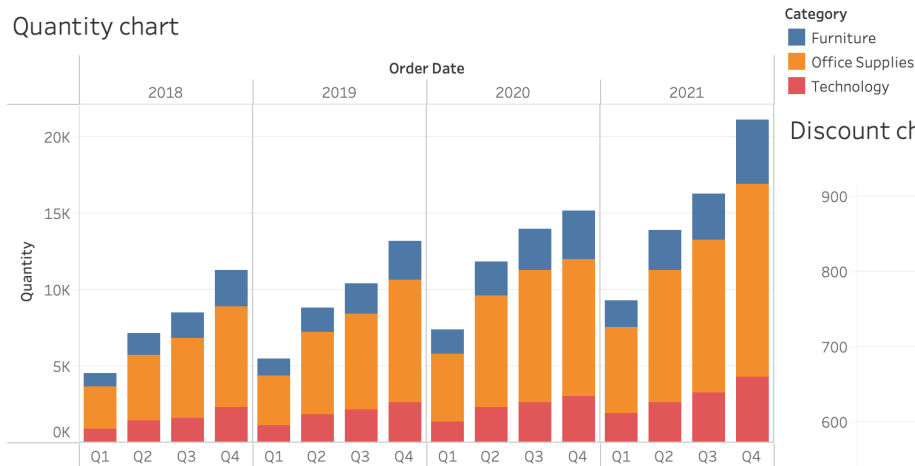
This dashboard shows us all the information about the interest of customers in our products around the world. It is not difficult to notice that the American market is the largest. It is also worth noting that quite a large number of buyers are observed in China, India and Australia.

The first graph shows us the number of clients and their growth in various trading segments. It also shows us the dynamic growth of income. The growth in the number of clients over the course of 4 years has not changed much, and therefore I do not observe much interest in its prediction. We can see a fairly clear trend in revenue growth. According to the forecast In 2021 in the corporate and Consumer segment we can see a sharp growth while in the Home Office segment we can observe a flat trend.

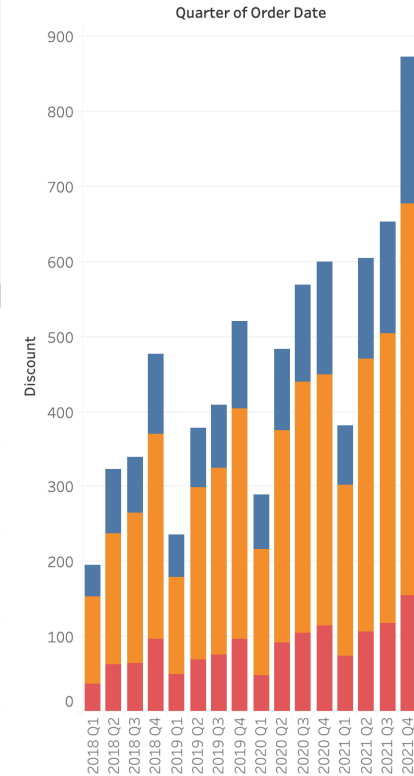
Furthermore, we see that the top selling items are binders, art, and storage. Also, we can see that Home Office has the quantitative advantage among other segments, which is illustrated on the Quantity graph.

## Dashboard 2

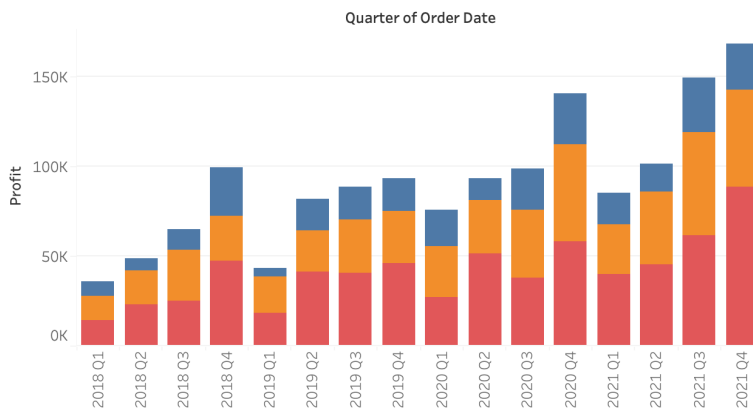
Quantity chart



Discount chart



Profit chart



On this graph we can observe seasonality. We can see a direct relationship between the first (quantity) and the second (profit) and third (discount) charts. We can also clearly see that in terms of quantity, office supplies outperform other segments, as was already mentioned in the previous dashboard, but if we compare it with the profit from sales, then the technology category is superior to office supplies, although they lose to them in quantity.

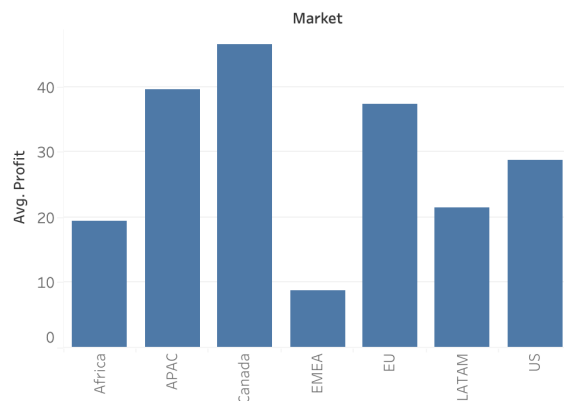
So in the first quarter we see the lowest sales relative to all the others. In the opposite case, there is the fact that in the fourth quarter the largest sales relative to the rest of the quarters. In this regard, I believe that the company should be cautious of how much supply they are purchasing as well as the discount they are introducing to avoid the situations where the demand is not high and there is a high probability of going to a loss from the surplus of goods and storage costs.

In turn, in the fourth quarter, the most effective decision will be to purchase a larger amount of goods and possibly announce discounts, which will lead to an even greater number of

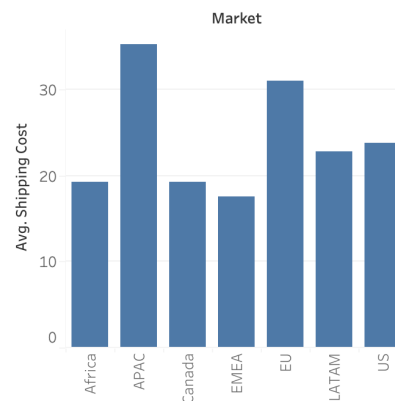
purchases and profit in general. But again, the company should begin to apply this strategy carefully and gradually increase purchases of goods and analyze sales.

### Dashboard 3

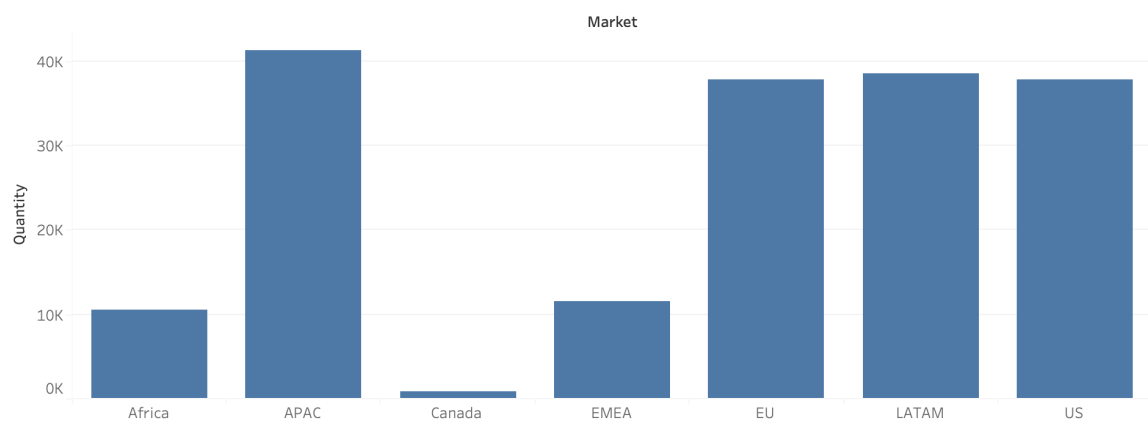
Average profit graph



Average Shipping Cost graph



Quantity graph



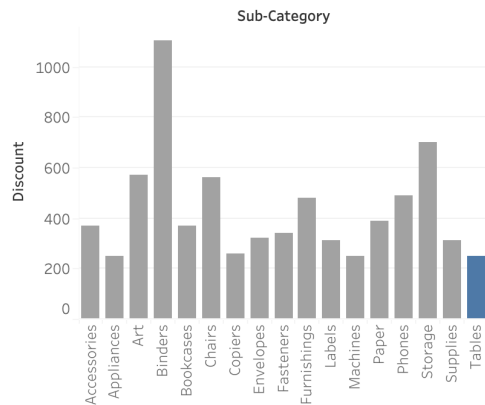
On this dashboard, we can observe graphs of average profitability, the number of sales and average shipping cost to a particular market.

In Canada the quantity is competitively low. However, the shipping cost in this country is one of the lowest. Moreover, the average profit is the highest out of all countries where the company operates. So there seems to be no reason that a company would not sell more to this market.

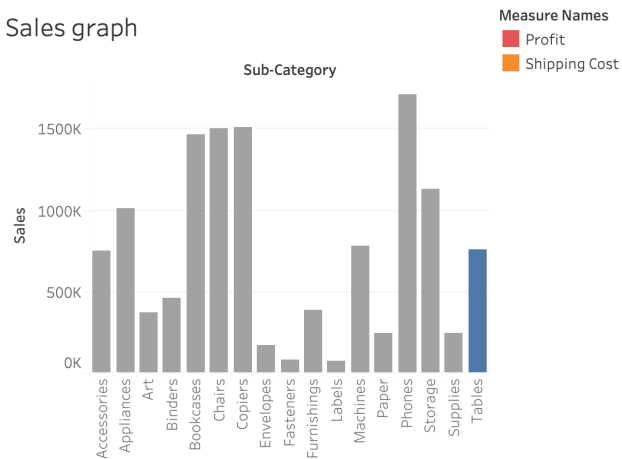
If low quantities are driven by low demand in Canada, the company may consider introducing discounts in order to spark interest of the consumers in this favorable country.

## Dashboard 4

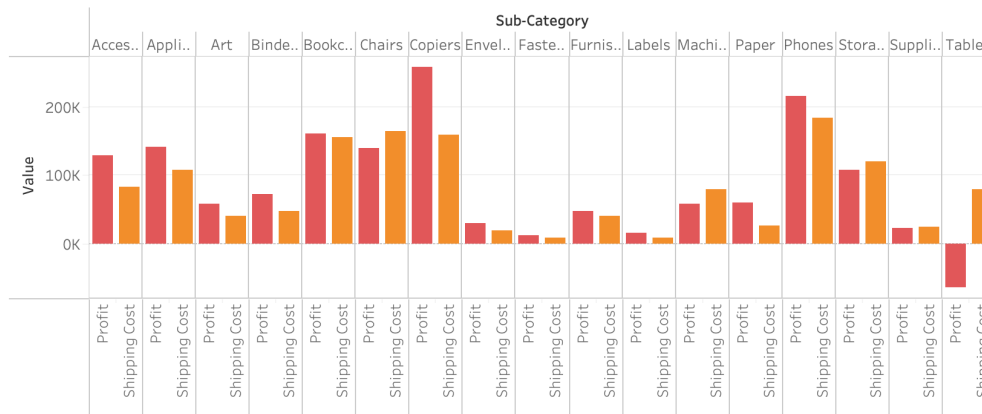
Discount graph



Sales graph



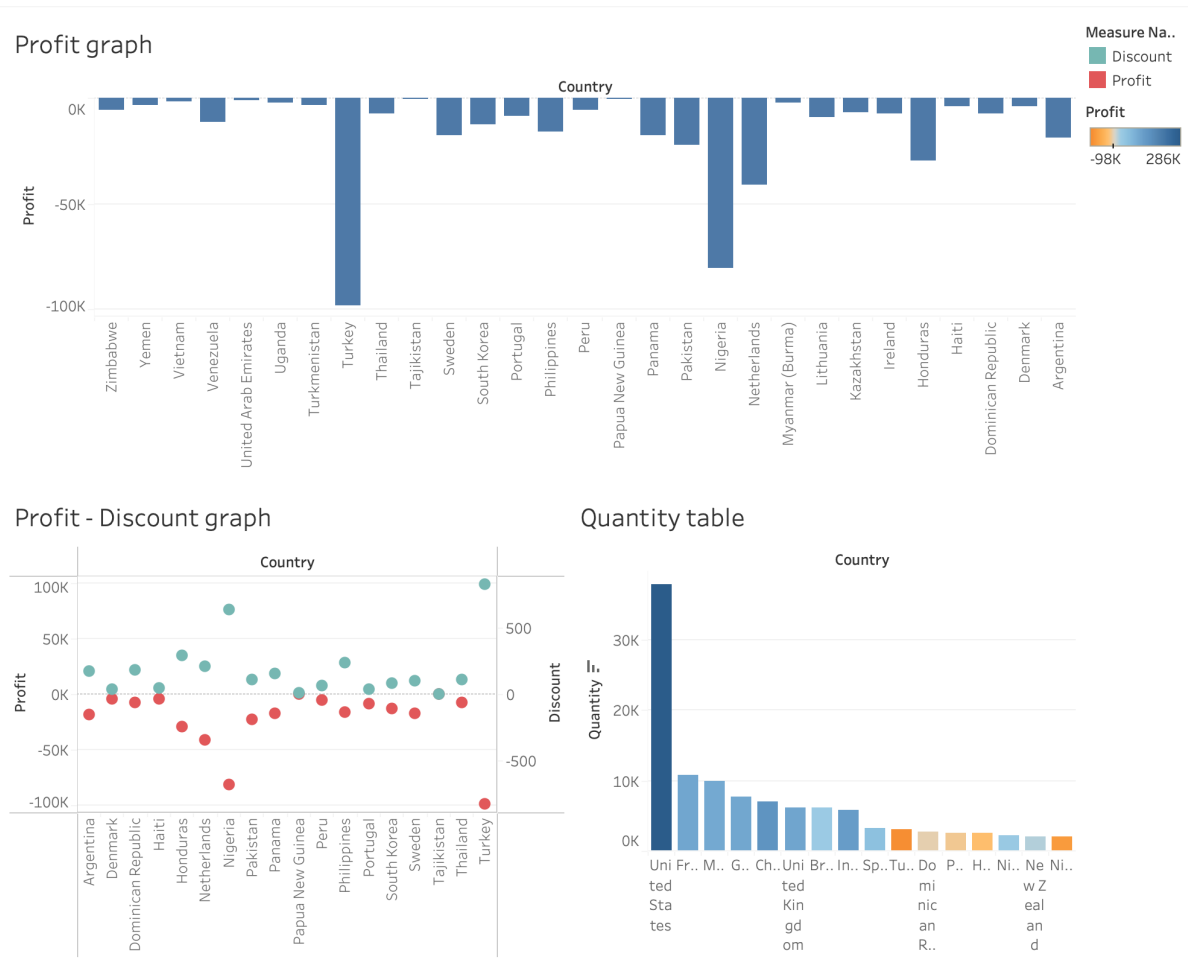
Profit and Shipping cost graph



The main idea on this dashboard is 'Tables' sub-category since the company seems to be losing money on it. From the previous dashboard (the second one) we find out that the Furniture category is a low profitable one. The reason for this may be clarified with further analysis.

On the Discount and Sales graph we can see that 'Tables' doesn't look out of place, so we can't say that the company loses money because of those parameters and for now we can apply the idea that the main reason for losing money from 'Tables' is shipping cost. My advice for the company is to consider stopping the sales of 'Tables' until the opportunity to reduce the shipping cost arises.

## Dashboard 5



Let's now look at the total profit in the consumer sector in a number of countries. I will pay special attention to the countries with negative profits, which are shown on the Profit graph. The worst indicators were recorded in Nigeria and Turkey, where losses amounted to 80751 and 98457, respectively. On the Profit and Discount graph we can also see that these losses are associated with extreme discounts. However, if we look at the Quantity table, we will see that both countries are in the top 20 out of 147 in total. These statistics may be the result of business attempts to enter new markets.

Lower discounts would probably help the profit situation, but people from these countries would probably start buying less products as a result. However, without lower discounts, there would be no reason to sell products there, so my general recommendation would be to reduce the number of products sold and discounts or, if that doesn't work, to consider completely exiting the market.