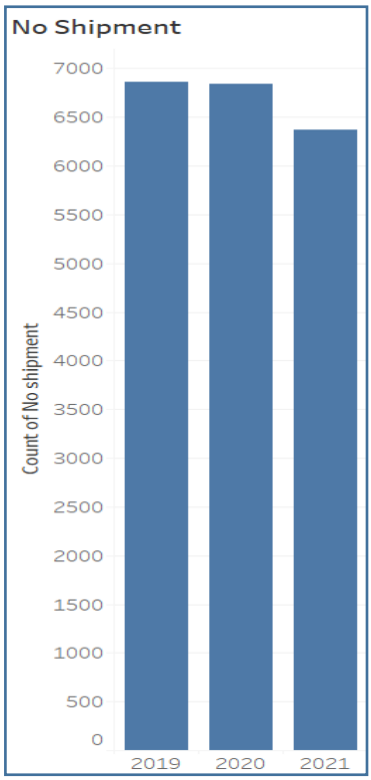
▪ Data Understanding and pre-processing

1) Firstly I checked all the values from the dataset where there was no shipment (i.e. number of shipment is 0). We can see that in 2019, there were 6,856 no shipments events occurred. In 2020, the value was 6,844 where it dropped to 6,370 in 2021.



2) Then I have filtered out the rows where No. of shipment is 0, that means there were no shipment on that time. I will consider rows where No. of Shipment has some values (not zero), i.e. there is shipment. Now, total instances in the dataset are 2169.

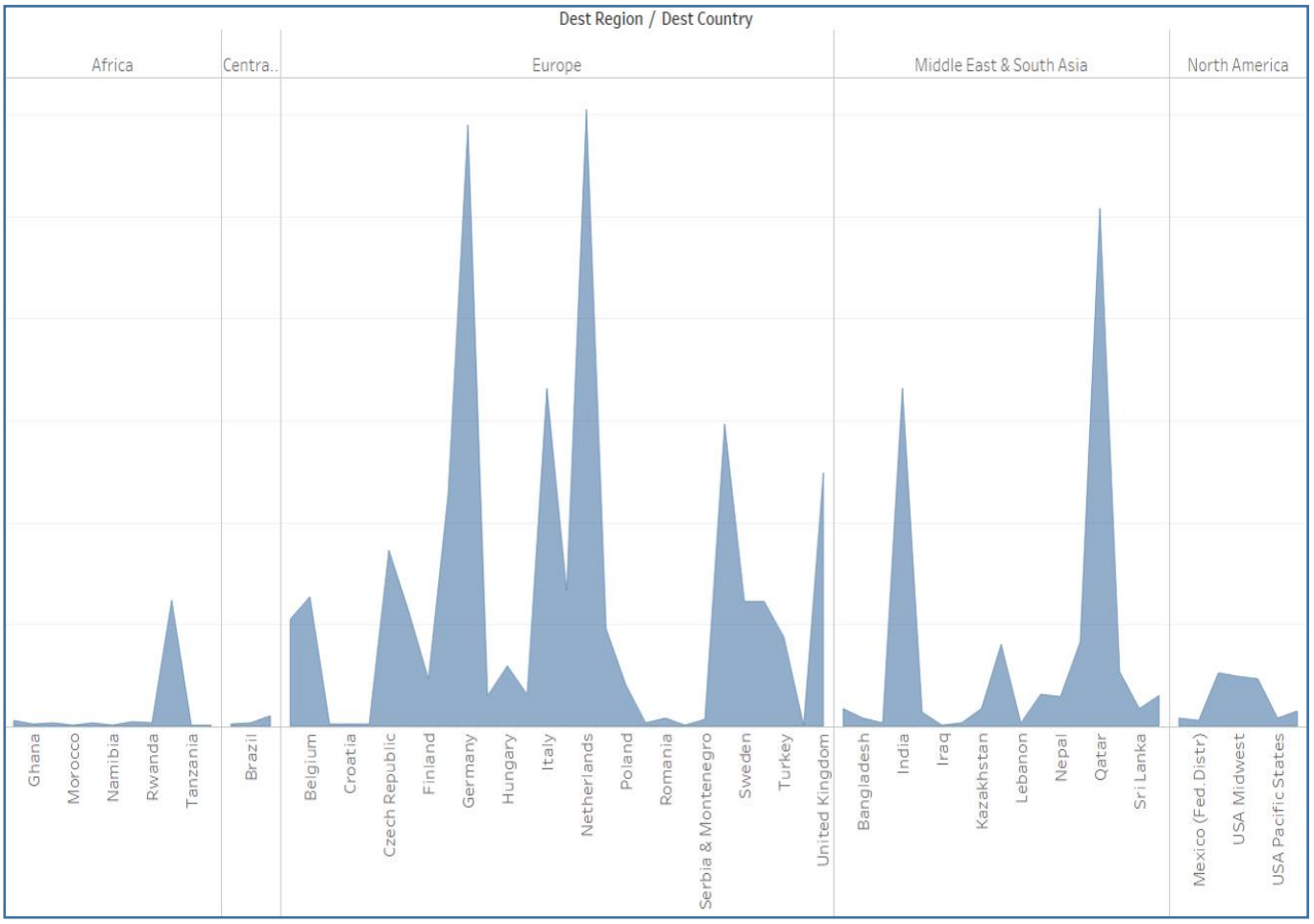
3) From the variable 'rev (Total revenue)' and 'bmk_rev (Benchmark revenue)' I have calculated whether a particular shipment could reach the revenue target or not? **A new column (fulfilled_target) is created in the dataset** by subtracting benchmark revenue from the total revenue. Here positive value means their revenue is more than the amount of the benchmark revenue i.e. they reached/surpassed the desired revenue. Negative value means total revenue is less than the benchmark revenue i.e. they couldn't achieve the desired revenue.

4) From the variable 'rev (Total revenue)' and 'mkt_rev (overall market revenue)' I have calculated the Market share of that product (for that particular shipment). I think this can be an important characteristic of any product. Based on this **I have created a new column named 'market share'** by dividing revenue (rev) by market revenue (mkt_rev).

▪ Data Driven Investigation

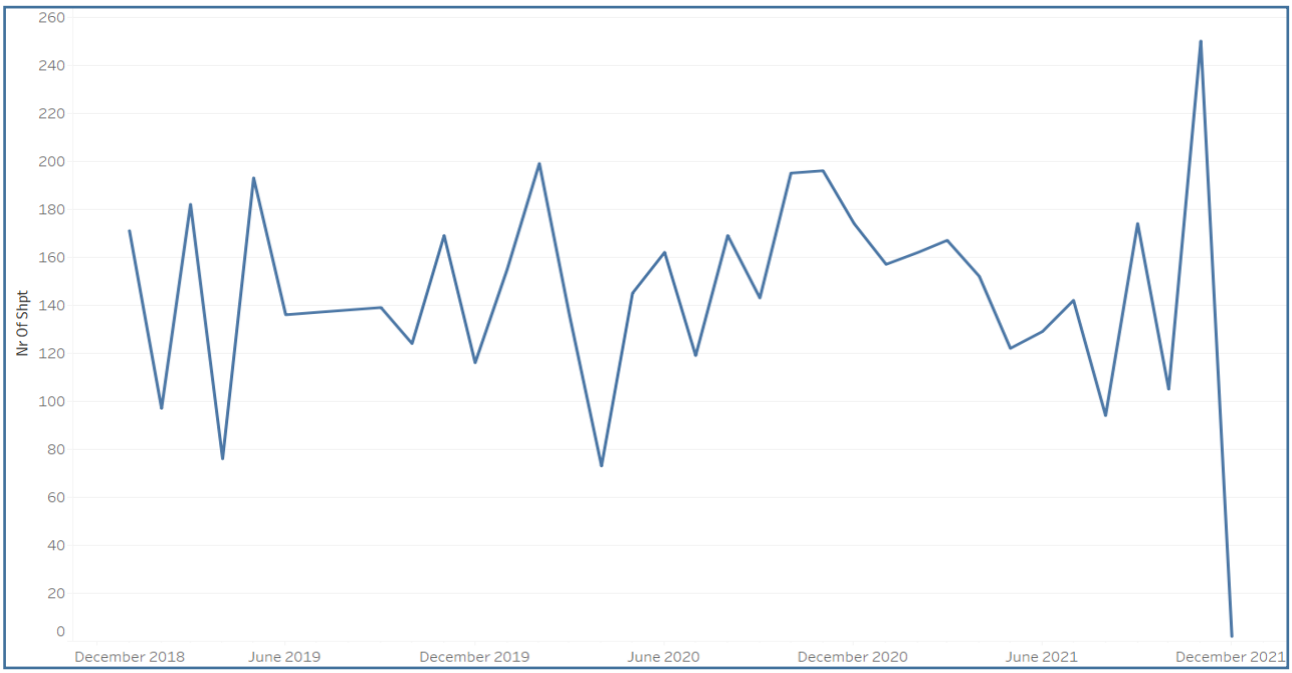
(i) Investigate the locations where the company exported the logistics

We see that most of the exports happened to Europe region. Then Middle East & South Asia. The company didn't export a significant number of shipments to North/Central America and Africa region. The company operated highest shipments in Netherlands (605) and, and the second highest is 589 shipments in Germany. It also exported a good number of logistics to Qatar, India, Spain, Italy, South Africa, UK, Austria, Denmark, Sweden, Belgium, France and Czech Republic.



(ii) Investigate the time when the shipments were operated

We can see a regular zigzag trend in terms of shipments between January 2019 and October 2021. Interestingly the number of shipments increased to 250 in November 2021. But it decreased drastically in December 2021 (only 2 shipments). **Probably Covid-19 pandemic situation was the reason behind this decline.**



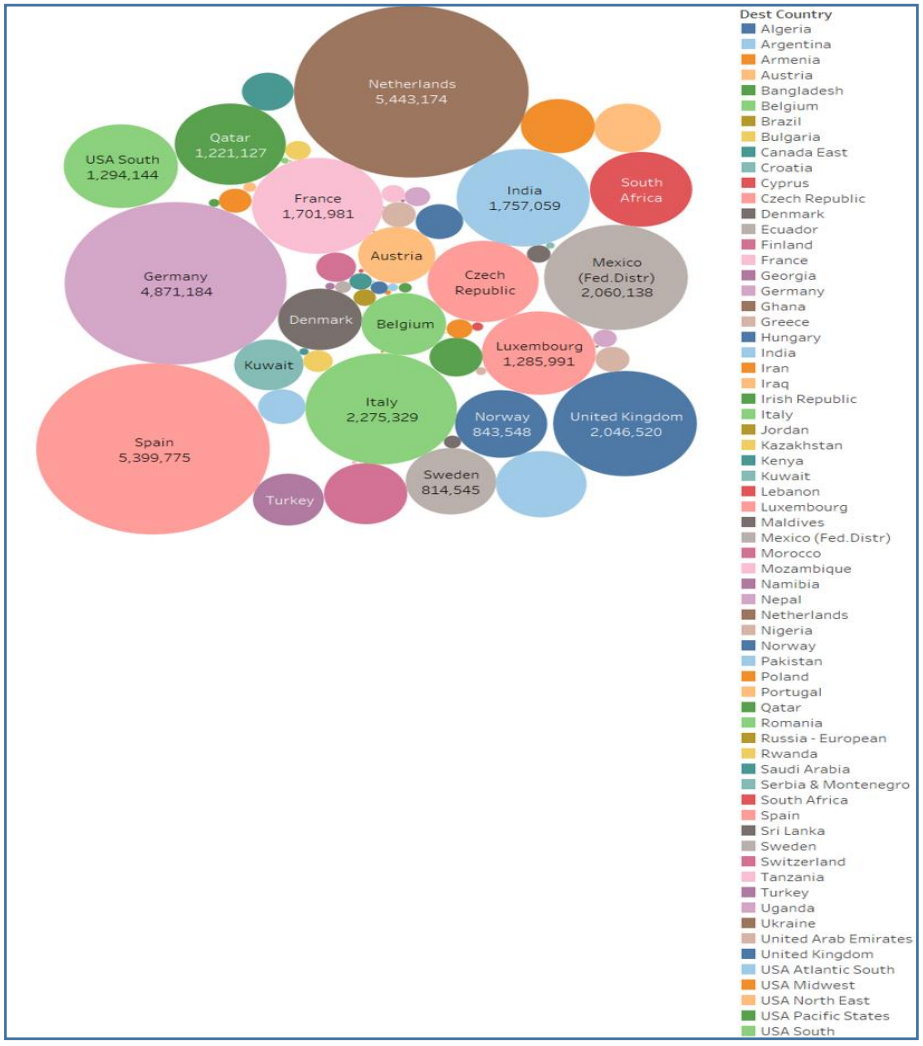
(iii) Where the largest or smallest size of shipments were exported?

By considering the variable 'dest_region', 'dest_subregion' and 'size' we can find the locations and the corresponding sizes of shipments. From the chart, we see that on average different sizes of shipments were sent to all locations. We can't specifically say that a particular region/subregion only had particular sizes of shipments.

	Dest Region				
Size	Africa	Central & South America	Europe	Middle East & South As..	North America
0-50Kg	Central Africa North Africa Southern Africa West Africa	South America	Balkan & SE Europe Eastern Europe Northern Europe Western Europe	Central Asia Gulf Area Levant & Caucasus South Asia	Mexico USA
50-100Kg	North Africa Southern Africa	South America	Balkan & SE Europe Eastern Europe Northern Europe Western Europe	Central Asia Gulf Area Levant & Caucasus South Asia	USA
100-300Kg	Central Africa East Africa Southern Africa West Africa	South America	Balkan & SE Europe Eastern Europe Northern Europe Western Europe	Central Asia Gulf Area Levant & Caucasus South Asia	Canada USA
300-500Kg	East Africa North Africa Southern Africa	South America	Balkan & SE Europe Eastern Europe Northern Europe Western Europe	Central Asia Gulf Area South Asia	USA
500-1000Kg	North Africa Southern Africa	South America	Balkan & SE Europe Eastern Europe Northern Europe Western Europe	Central Asia Gulf Area Levant & Caucasus South Asia	Canada USA
1000-5000Kg	North Africa Southern Africa West Africa	South America	Balkan & SE Europe Eastern Europe Northern Europe Western Europe	Central Asia Gulf Area Levant & Caucasus South Asia	Canada USA
> 5000Kg	Central Africa East Africa Southern Africa		Eastern Europe Northern Europe Western Europe	South Asia	Mexico USA

(i

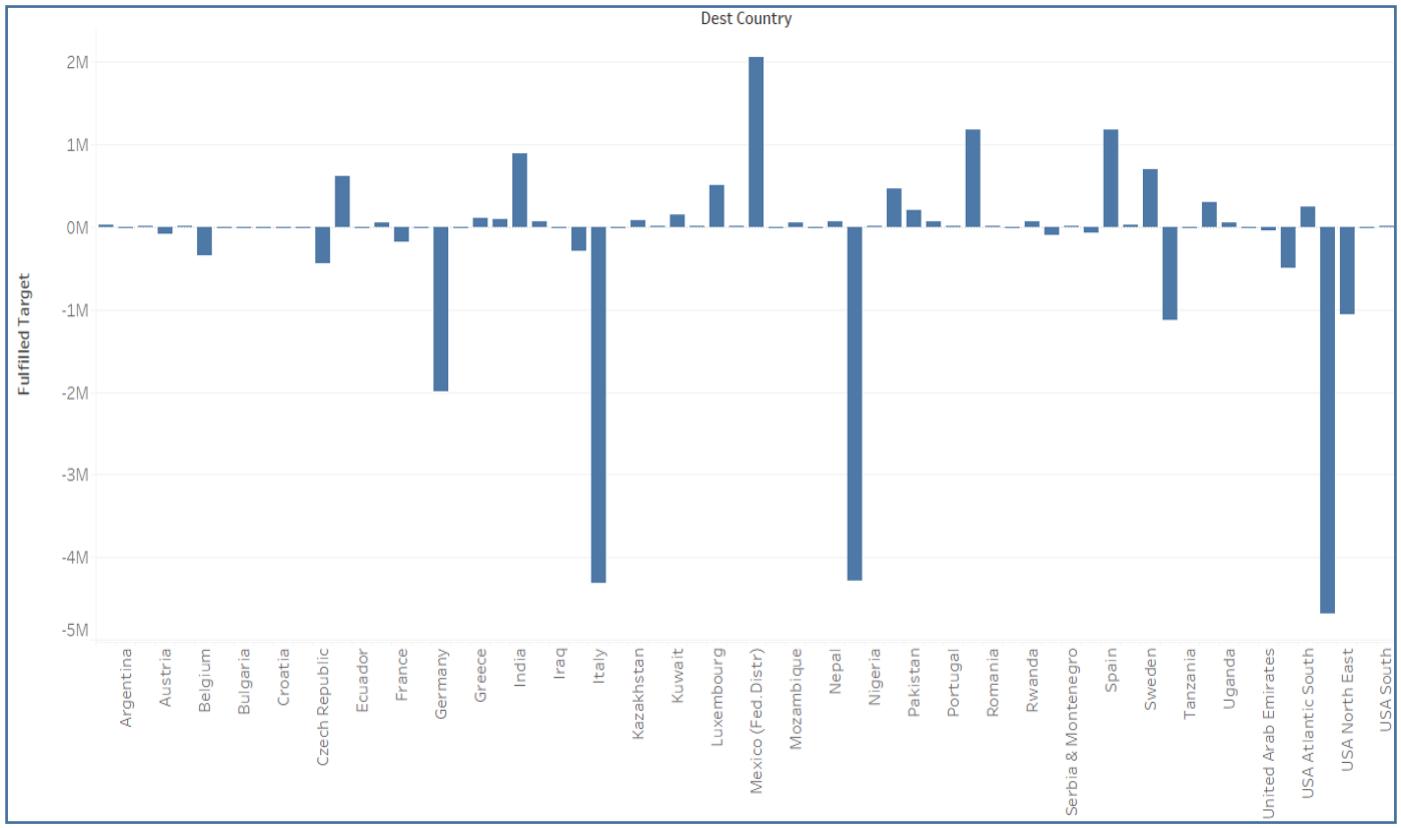
By taking the variable 'dest_country' and 'rev' I have figured out the total revenue for each country. We see that **the company earned the highest revenue of 5,443,174 from Netherlands**. It earned the second highest revenue of 5,399,775 from Spain. It also earned a significant amount of revenue from Germany, United Kingdom, India, Mexico (Fed. Distr.), USA South, Qatar, France, Italy, Luxembarg, Norway, Sweden, Austria, Czech republic, Kuwait, Turkey. There are few more shown on the graph. On the other hand, Sri Lanka, Bangladesh, Ukraine, Nigeria, Kenya, Ghana, Namibia, Lebanon, Armenia, Cyprus, Georgia, Argentina, USA Pacific States, Portugal, Romania, and Serbia had lowest revenue.

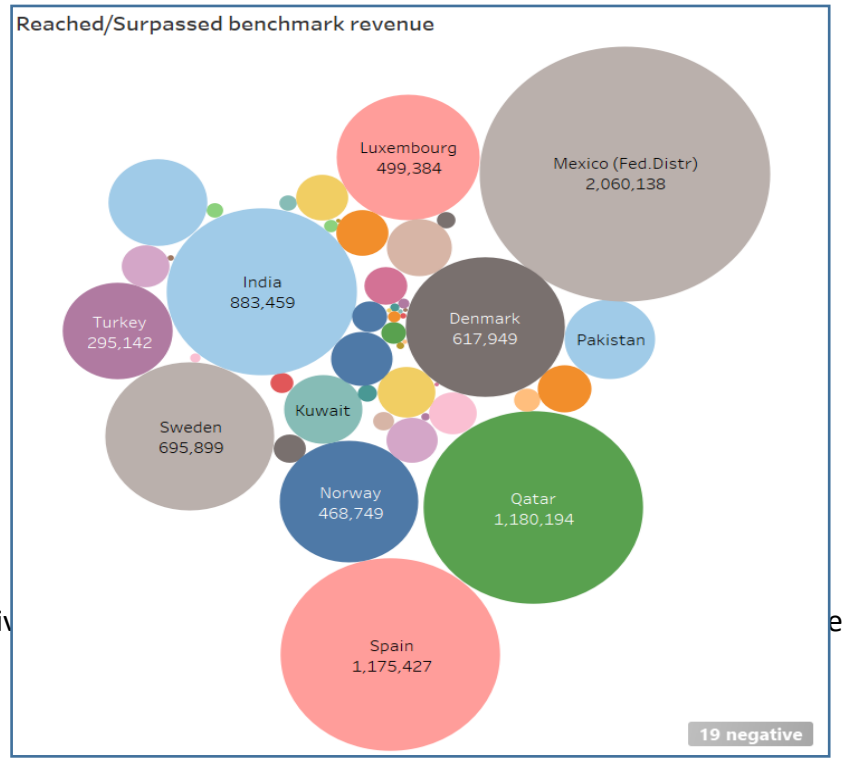


(v) In which country the company reached/surpassed the benchmark revenue?

Although we found the total revenue earned by company for each country, we need to know specifically for which countries the revenue reached/surpassed the benchmark. I will use fulfilled_target column that I have created. This data is important for the companies growth. If it can't achieve the standard mark it will fail in a long run. We see some interesting patterns here. **Although in Netharlands, Italy and Germany the revenue was good but it couldn't reach**

the benchmark revenue in those countries. We see that in Mexico, Qatar, Spain, Sweden, Norway, Pakistan, Turkey, India, Luxemburg, Denmark, and USA Atlantic South the company performed well in this term. I have also defined a bubble chart for this analysis. This will be added in the Dashboard.



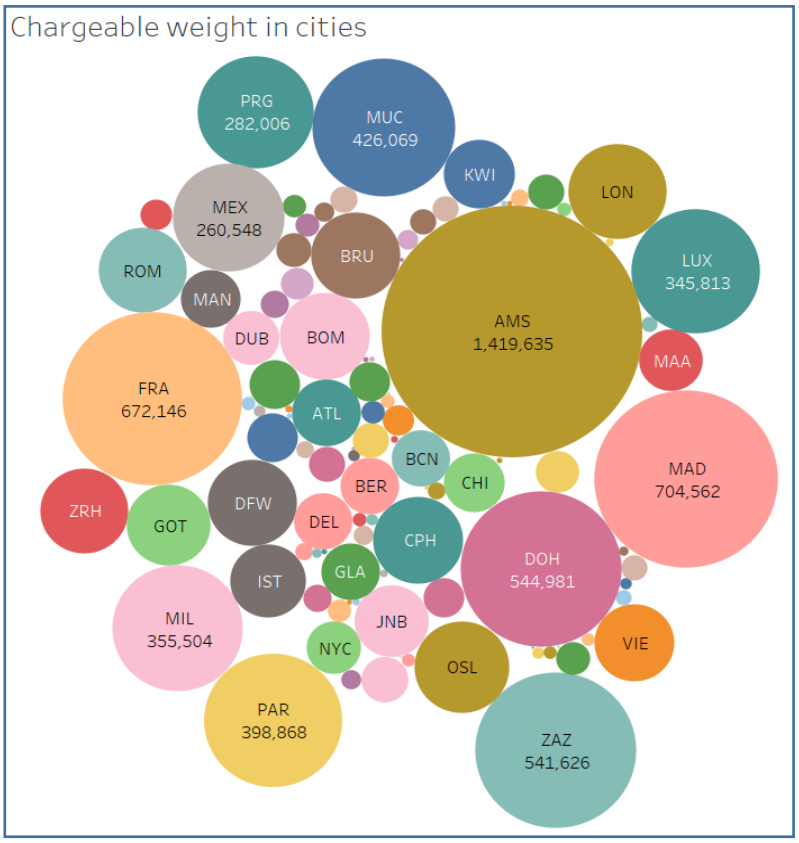


19 negativ e benchmark revenue.

(vi) Chargeable Weight of Shipments in different cities

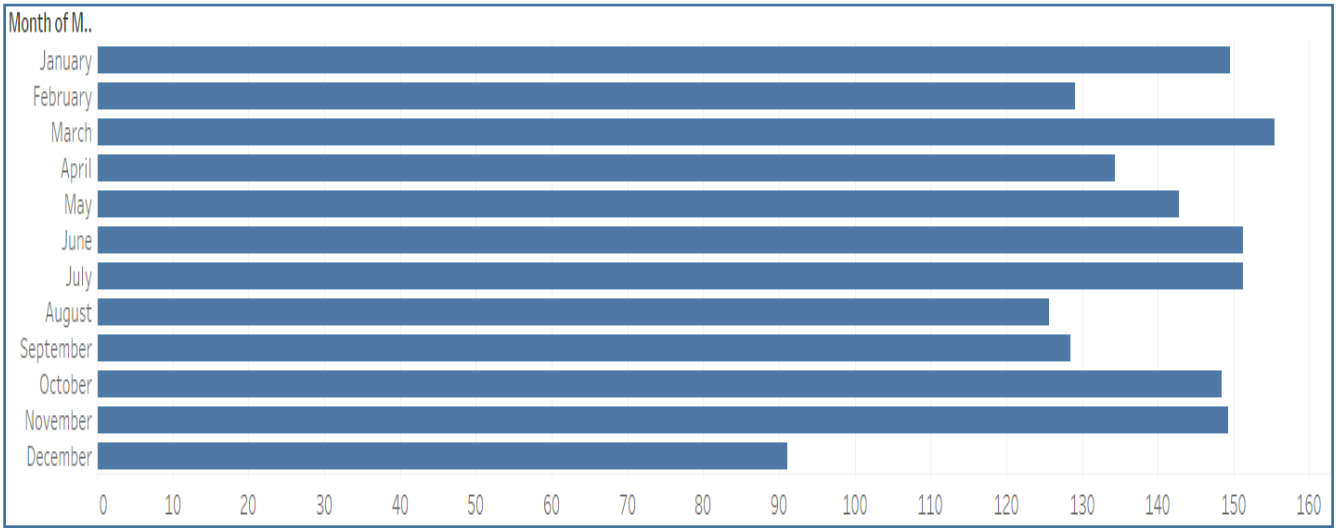
Chargeable weight of shipments could be an important metric for business insight. This can be used in cost analysis for the company. I have identified the weight of different cities by considering 'dest_city' and 'chargeable_weight' variables. We see that **Amsterdam had the highest chargeable weight of 1,419,635**, where Madrid had the second highest of 704,562. We also find that Zaragoza, Doha, Paris, Milan, Luxembourg, Munich, Prague, Mexico and some other cities shown in the graph had most chargeable weights. On the other hand, the company had low chargeable weight in Geneva, Boston, Bremen, Zagreb, Comodoro and some other cities shown in the graph.

An interesting pattern is found here. Why Netherlands, Germany and Italy could not achieve the benchmark revenue? From the following graph, it's clear that main cities in those countries (Amsterdam, Frankfurt and Madrid) had a very large chargeable weights. High chargeable weights were responsible to reduce their total revenue.



(vii) Market Share

As I have already mentioned, I have created a new column ‘market share’ based on revenue and overall market revenue. From the Bar chart, we see that logistics maintain a good market share in January, March, May, June, July, October and November. December gets the lowest market share of 91.15 where the highest market share was in March of 155.36.



Dashboard

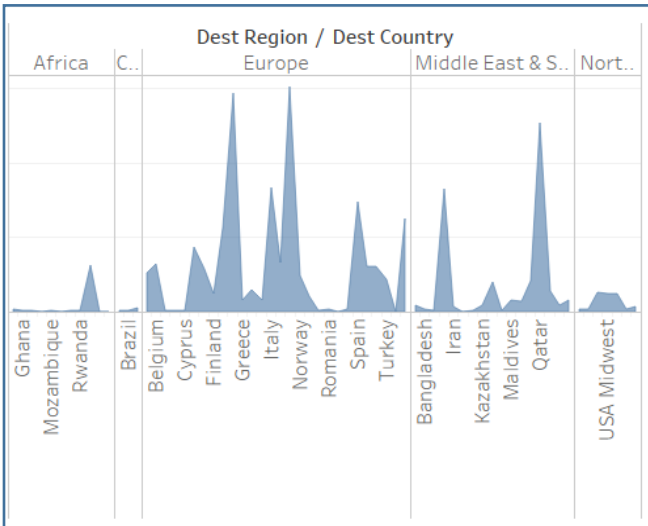
Finally, I have created the following dashboard by considering four major business insights from my analysis. Those are: locations where the company exported the logistics, when the shipments were operated, In which country the company reached/surpassed the benchmark revenue?, and market share of the logistics.

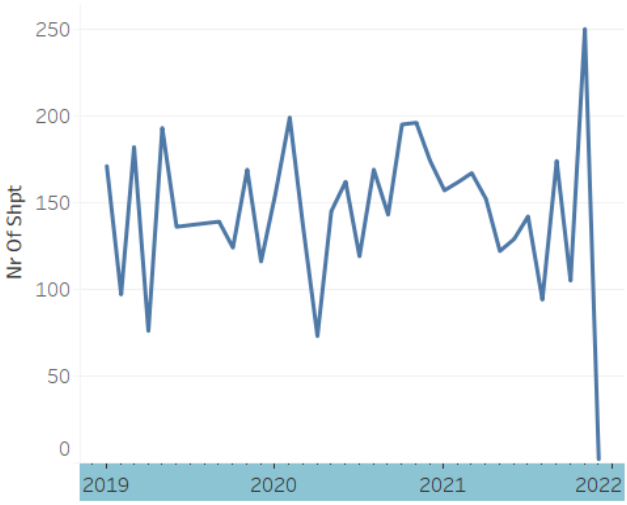
(i) From the dashboard, users can easily understand the location where the company exported most logistics.

(ii) They will get an idea about the trend of shipments of that company over the time (2019-2021)

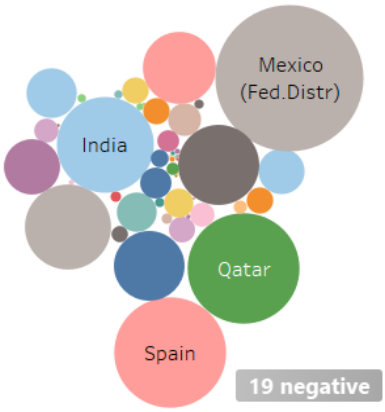
(iii) Users can see the specific countries where the company earned a very good revenue that reached/surpassed their benchmark revenue.

(iii) They will also understand in which months the logistics maintained a good market share rate.





Reached/Surpassed benchmark revenue



Market share in the months