**Tableau Project**

1. **Report by location**

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Description automatically generated

* The company is doing quite good with its sales; with mean £46,882, median £22,205; as the mean is bigger than the median, it is positively skewed. From the box-and-whisker plot, we can see some states like California and New York are outside the box meaning they are outsiders.
* Normally the more the state sells, the higher the profit it should be making. However, Texas is a special case; it has ranked the 3rd in sales (£170,188) but instead of profit, it has made a huge loss of 15%.
* Two factors have been exanimated: Returns Rate and Ship Mode. The higher the return rate, the lower the sales and profit the state can make. However, the return rate of Texas is only 3.49% which is low compares to others. The ship mode affects the cost; First Class and Same Day normally cost more, which will potentially lower the profit rate. However, over 60% of Texas’ order have been done via Standard Class, this percentage is the highest compared to other top-sales states.
* To conclude, although Returns Rate and Ship Mode have some impacts in Texas’ low profitability, they are not the main causes; the major reason can be extremely high labour cost which have not been included in the data.

1. **Report by division**

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Description automatically generated

* Consumer segment is the best in sales and profitability among all segments; it has contributed 51% of the total sales and 47% in profit.
* In all segments Technology has the highest sales among the three categories. It has contributed 18%, 11% and 8% of total sales in Consume, Corporate and Home Office respectively.
* At the same time, Technology in each segment has shown a higher profit rate compares to other categories. The highest profitable items in all categories are copiers; it has done extremely well in Consumer segment, has a record of more than £24,000.
* To boost the profitability rate, the company can focus its production in the more profitable items (like the most profitable items in all segments: Copiers, Phones and Accessories) and eliminate the items making the highest loss (e.g. table has made an average loss of more than £6000 in all segments.

##### **Report over time**

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Description automatically generated

* There is no evidence of any trend but a very clear seasonality (every year the peak is in Q4 and the valley is in Q1), it has also proved by data: the contribution to the trend is 0.0% but is 100% in seasonality.
* The quality of this forecast is “OK”, with R square equals to 0.3 and p-value is 0.05; meaning it is weakly significant.
* Among all categories, Technology has shown the highest profit over time; follows by Office Supplies and Furniture. However, the projected change of the sum of profit between Q4 of 2017 and Q4 in 2018 is 0.

1. **Discount and Sales Relationship**

A screenshot of a data analysis

Description automatically generated

* Discount and Sales share similar trend overtime.
* The scatter diagram also gives the impression that there is some sort of linear relationship between Discount and Sales. The scatterplot shows that, as the discount increases, the sales also increase; it seems that discount and sales are having a positive correlated relationship. However, the relationship is not perfectly linear, as the points do not lie on a straight line.
* Although discount and sales have shown a positive correlation, it has no evidence of any causality. Discount has been commonly used by different companies to boost up sales, we cannot prove it does work from the data given. Among all countries, Texas has given the highest discount (£365) which is more than double than the mean (£142), its sales is not the best (ranked 5th among all states).
* From the table, we can see that same discount rate (0.07%) has been given to all segments, the sales have a huge different.