

# **Data Analysis**

## ***Executive Summary***

This analysis examines the sales of products from a store over the course of 2019-2020. The total sales across the entire Subcontinent was around 1.6M with around 11% profit. One big concern is the low profit-driven sales of South and Central Region. It identifies sales and profit on the basis or region, ship mode, segment and among multiple other categories. The analysis also shows a comparison between monthly sales and profit of both 2019 and 2020.

## ***Dataset Overview***

The Dataset consists of transactional data with 22 columns and around 6k rows. Each places order has certain characteristics that are attributed to it. Order-ID, Order and Ship Date, Customer Name, and the Location of where the ordered is placed. We have created a new column to calculate the average number of days it takes for an order to be delivered across the 4 regions of South, Central, East, West.

## ***KPI Overview***

The Business has a strong overall revenue with each region averaging around 350k sales. The profit is around 11% and is not necessarily proportional to the revenue growth. There are instances in the data where the revenue growth didn't necessarily have an increase in the profit.

## ***Trend Analysis CATEGORY-WISE***

The category of office supplies has been the most revenue generating category, with contribution of around 41%. Not only globally, it has been the top product in all the 4 regions individually. Proportionally it has a profit share of around 42%. Revenue of office supplies has seen a constant and consistent growth with very minor our of ordinary dips. From 2019 to 2020 it has seen a significant increase in both revenue and profit. Technology is the second-best revenue generator category with it's revenue contributing around 29% at 470k but with a profit percent of 51.3% share in profit making it the most profitable category despite being 2<sup>nd</sup> highest revenue. California being the top buyer of technology has 21% share.

Overall, on a broader scale there has been an increase in revenue of technology in 2020 than in 2019 but the profit hasn't increased proportionally. One notable insight is that despite the increment of revenue in April-May 2020, the profit still dipped and incurred a loss due to some import or export issue (speculating). The profit is fairly similar in both years but is not consistent with respect to time. One notable insight is when the profit and revenue both spiked in March-

April 2020. The Category of Technology had more sales in 2020 but more profit in 2019, indicating the selling of items with low returns to the seller.

Furniture is the 3<sup>rd</sup> most revenue generating category with a share of 30% in the revenue but a profit share of mere 5% at 10k. Also, furniture being the only category that has been in multiple loses with the most significant one in October 2020 of around 2700 across all the regions. It is a low profit category. Majority of the buyers of Furniture are Consumers at around 50%. We also see a sudden dip in both revenue and profit of the west region in the furniture category around Oct-Nov 2020 with incurring loss. Again, the same trend as Technology, the sales in 2020 are higher but the profit is higher in 2019.

While looking at total sales, we can see that in 2019 at the revenue of 564k the profit was 81k which is 14% profit, whereas in 2020 despite the sales being 1Million, the profit was at 93k which is 9.3%. So despite making more money in 2020, the store did not perform to its best potential. One reason of this is the flat almost flat sales of office supplies in 2020 from Jan to July.

## ***Regional Analysis***

The west is the best performing region both in terms of revenue and profit, with California being the biggest contributor. The revenue and profit both are better in 2020 as compared to 2019, which suggests consistent growth. To mention one point we saw a sudden drop in profit in April-May 2020, proportionally there is a very little drop in revenue during the same time suggesting the margins are very tight or that some products with good margins weren't sold much. The profit though it is more in 2020, the profit percentage still remains the same, which suggests that it is a linear growth with no major inconsistencies. Furniture being the most sold category in west in 2019 with revenue share of 38.8% the profit share is just 11% which suggests that the margin on furniture products is very low.

The Central Region has a revenue of 341k with a profit percent of 8% at 27.45k, on the other hand we have the South region with revenue of 252k and a profit percent of 10.5% at 26.55k, thus the Central performed worse than the South with over 100k revenue and near similar profit and even less profit % of revenue.

The East region demonstrates stable and consistent performance, maintaining a steady profit margin across both years. However, isolated periods of revenue growth still resulted in profit declines, suggesting that factors beyond sales volume—such as cost structure or product mix, may influence profitability in this region.

## ***Insights***

Revenue growth in 2020 was not accompanied by proportional profit growth, indicating declining margins.

The West region consistently outperforms other regions, while Central remains inefficient despite higher revenue.

Furniture generates significant sales but contributes minimal profit, making it the weakest category.

Profit volatility during peak sales periods suggests cost or pricing inefficiencies.

A small number of regions and categories drive the majority of profitability.