

Super Store sales Analysis

Data Analytics and Visualization

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1. Introduction

1.1 Executive summary

Data analysis is the process of cleaning, changing, and processing raw data and extracting actionable, relevant information that helps businesses make informed decisions. The procedure helps reduce the risks inherent in decision-making by providing useful insights and statistics, often presented in charts, images, tables, and graphs.

There is a lot of methodologies to do so such as:

- SQL (Structured Query Language)
- SSRS (SQL Structured Reporting Services)
- SSIS (SQL Structured Integration Services)
- SSAS (SQL Structured Analysis Services)
- power BI.

1.2 Overview

Super Store is a small retail business located in the United States. They sell Furniture, Office Supplies and Technology products and their customers are the mass Consumer, small business, Corporate and Home Offices.

We assume that the Super Store is a family business and is owned by 1 or 2 owners who are very invested in their business.

Owners are likely not people who are expert in reading charts or interpreting statistical analysis, so our analysis will be in layman terms and easy to understand.

1.3 Datasets

This data set consist of 3 sheets: Orders, Returns, Users.

The first sheet “Orders” has 25 Row and 1953 columns it contains the following information:

Row ID, Order Priority, Discount, Unit Price, Shipping Cost, Customer ID, Customer ID,
Customer Name, Ship Mode, Customer Segment, Product Sub-Category, Product Container,
Product Name, Product Base Margin, Countr, Region, State or Province, City, Postal Code, Order
Date, Ship Date, Profit, Quantity Ordered new, Sales, Order ID.

The second sheet “Returns” has 2 rows (Order ID, Status) and 1635 columns.

The last sheet “Users” has 2 rows (Region, Manager) and 5 columns.

My task in this project is to analyze the sales data and identify weak areas and opportunities for Super Store to boost business growth.

1.4 Requirements

In this project I will try to answer the following questions:

- Which Category is Best Selling and Most Profitable?
- What is the Best Selling and Most Profitable Sub-Category?
- Which is the Top Selling Sub-Category?
- Which Customer Segment is Most Profitable?
- Which is the Preferred Ship Mode?
- Which Region is the Most Profitable?
- Which state has the Highest Number of Sales and has highest profit ?

2. Solution

2.1 Tools

In this project I used **Microsoft Power BI** to present the reports and dashboards that shows the Sales analysis and profit analysis and geographical information of Super Store dataset.

2.1.1 Microsoft Power BI

Is a top business intelligence platform with support for dozens of data sources. It allows users to create and share reports, visualization, and dashboards. Users can combine a group of dashboards and reports into a power BI app for simple distribution. It also allows users to build automated machine learning models and integrates with Azure Machine Learning.

With Power BI, we can connect to multiple and different data sources and combine them into a data model.

2.2 Components

2.2.1 Reports and dashboards

- Figure 1 shows the dashboard for Sales Analysis it indicates Filters and sales by category and sub-category chart which shows that Technology is the Best-selling, and it also shows that Office Machine, Chairs and Chair mats are Top 2 best-selling sub-category.

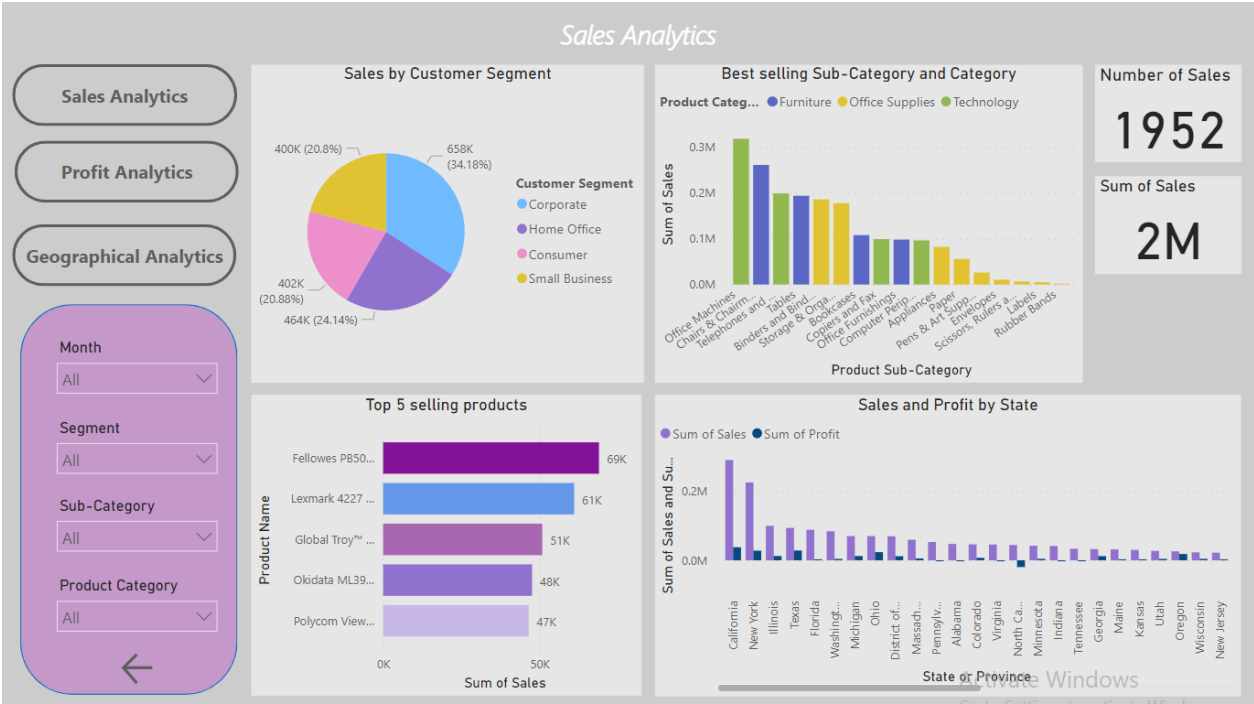


Figure 1 Sales Analytics Dashboard

- Figure 2 shows the Profit Analysis by profit customer segment chart we can see that Small Business segment is most profitable, followed by Corporate Segment, Home Office and at the end Consumer segment. Hence, marketing strategy must target or place more focus on retaining Small business and Corporate and Home Office Segment customers. According to Best profitable Category and Sub-Category chart Binders and Binders Accessories produces most profit, followed by Chairs & Chair mats, Telephones and Communication, Copiers, and Fax. The marketing strategy must focus on marketing these products, On the other end of the spectrum, Pens & Art Supplies, Bookcases, Envelopes, Scissors, Rulers and Trimmers, Rubber Bands and Tables are made close to zero margin to losses. These are products that Super Store can consider dropping from the product catalogue or increase the sale price and profit margin or bargain for a lower price from the supplier.

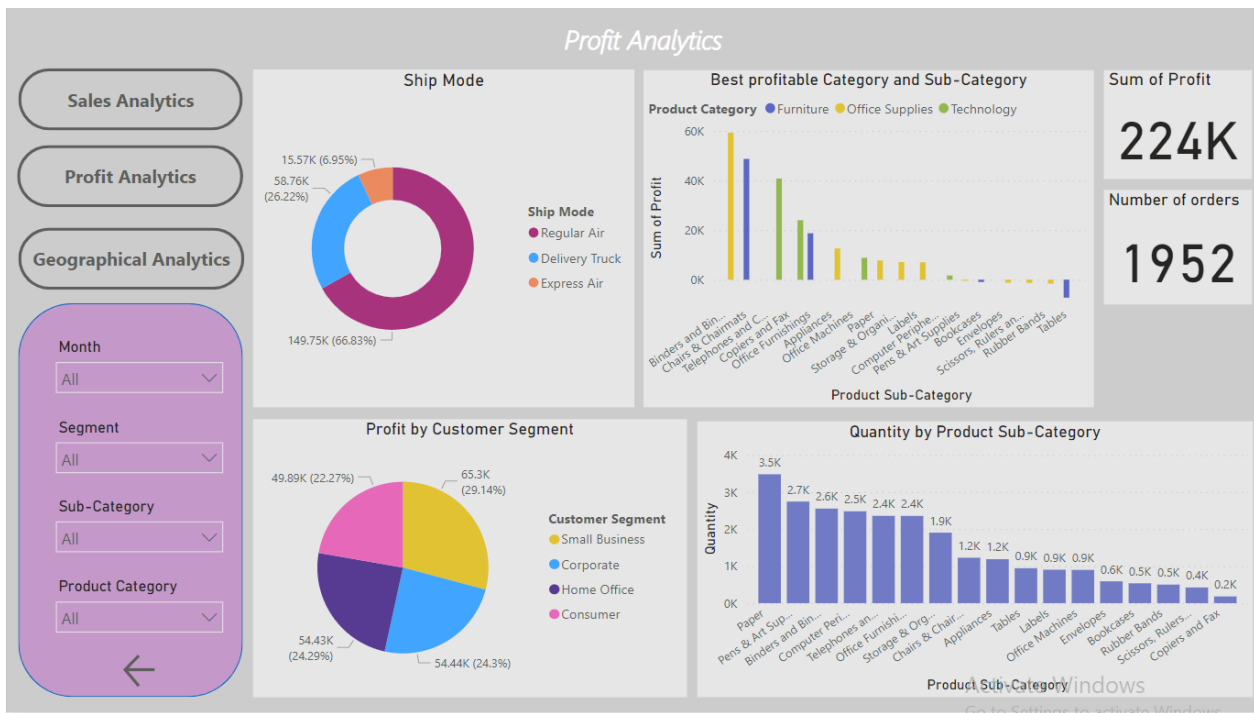


Figure 2 Profit Analytics Dashboard

- Figure 3 shows the Geographical Analytics it shows the Top selling Category and sub-category chart and we can decide the following Super Store should ensure inventory are always well-stocked for the top selling sub-category such as Paper, Pens & Art supplies, Binders and Binders Accessories, and Despite being most profitable, Copiers and Fax sell the least only 181, but as it is a relatively expensive office equipment that is usually used for few years, it is understandable that it sells the least among all. And from ship Mode chart we can see tat the Regular Air is the preferred method of shipment and perhaps the cheapest one too, the other modes are not popular among the customers and may be too costly. By Profit and sales by region chart we can see that the most profitable regions are East and Central.

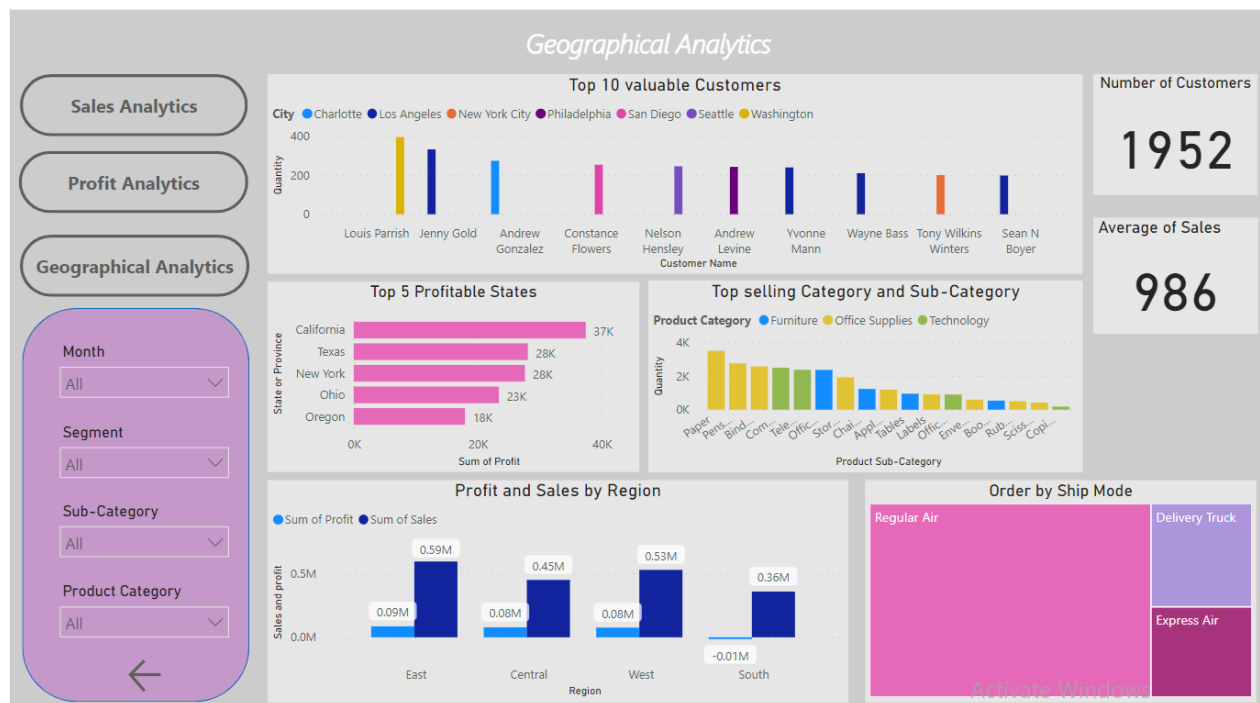


Figure 3 Geographics Analytics Dashboard

3. Conclusion

In conclusion the aim purpose of this project is to help the owners who are likely not people who are expert in reading charts or interpreting statistical analysis, so our analysis is in layman terms and easy to understand, so that the owners can take the decision.

3.1 Recommendations

- Focus on Technology sub-category and office machines and Chairs & Chair mats as they are highest selling and most profitable. Bundle them with the less profitable products such as Rubber Bands and Labels to offset the losses.
- Selling Tables, Rubber Band, Scissors, Rulers and Trimmers, Envelopes, Bookcases and Pens & Art Supplies result in huge losses, so Super Store must consider bundling them together with High Selling or Profitable sub-category such as Binders and Binder Accessories, Chairs and chair mats, Telephones and communication, Copiers and Fax Technology products.
- For Home Offices customers, these people might be busy with work and less likely to spend time selecting individual products, so create a home Office package with products used for offices such as table, chairs, phone, copiers, storage, label, fasteners, bookcases.
- For loss-making products like Supplies, Bookcases, Tables, consider to either drop these from the catalogue or change suppliers and bargain for cheaper price.

References

[Superstore Dataset | Kaggle](#)

[Power BI](#)

[Sample Superstore Business Dashboard - Microsoft Power BI Community](#)

[SUPERSTORE - Microsoft Power BI Community](#)