

Predictive Analytics and Visualization of Insights

Introduction

Using the inbuild Tableau superstone dataset gives good insights and able to arrive on the data decision process that need to be followed..The management of Superstore needs actionable insights into product profitability, customer behaviour, discount impact, regional performance and operational efficiency for optimizing business strategies, enhancing customer satisfaction, maximizing profit etc. These insights enables Superstore to make data driven decisions.

Data sources and EDA

In Orders table, Row ID is the unique identifier for each row. Order id represents the unque identifier for each order. Order date indicates the date an order was placed. It is useful for time – series analysis. Customer ID is the unique identifier for each customer

Product category, sub-category, profit and order date

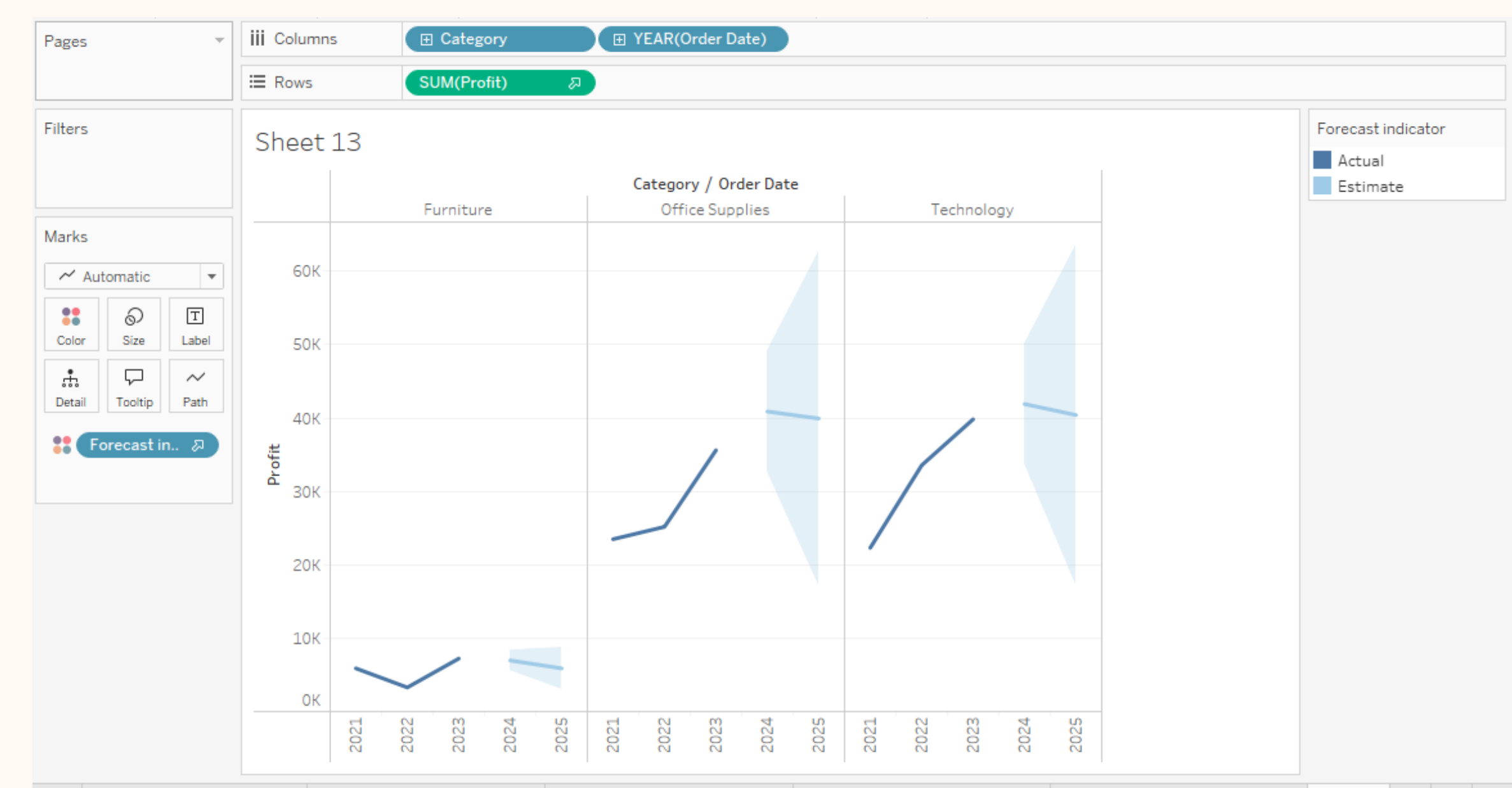


Fig1: Profit and Order

Furniture shows a positive growth trend which shows further investment can be done on this. Office supplies and technology show stability which means these categories do not show significant growth

Customer segment analysis

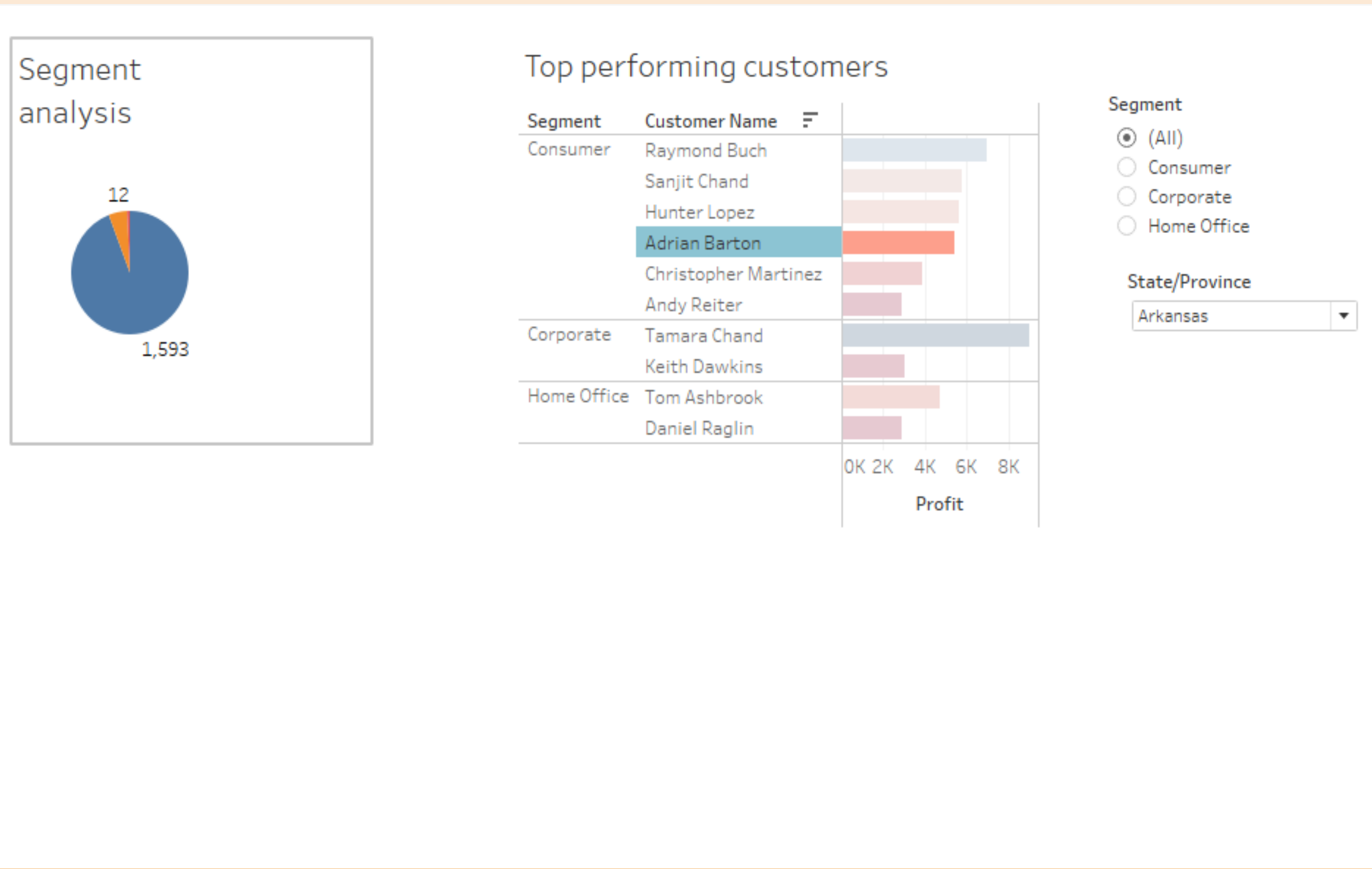


Fig2: Customer segment analysis

The analysis depicts that, consumer is high in the customer segment. It helps to identify the high performing that drive revenue and profits. By identifying high value customers, super store can design loyalty programs.

Here, projections are made for 5 quarters from 2024 Q\$ to 2025 Q4. Forecasting are done using the data from 2021 Q1 to 2024 Q3. According to this forecast, profit is expected to increase by \$1,301 from initial value by 2025 Q4. Profit is expected to remain the same with no increase or decrease by 2025 Q4. Profit is expected to remain the same with no increase or decrease by 2025 Q4.

Sales by discount impact



Fig3:Sales by discount

This analysis evaluates how discounts influence both sales volume and profit margins across products and categories. This analysis shows that, high discounts is given for office supplies and sales as well as profit also high for this category.

Operational Performance

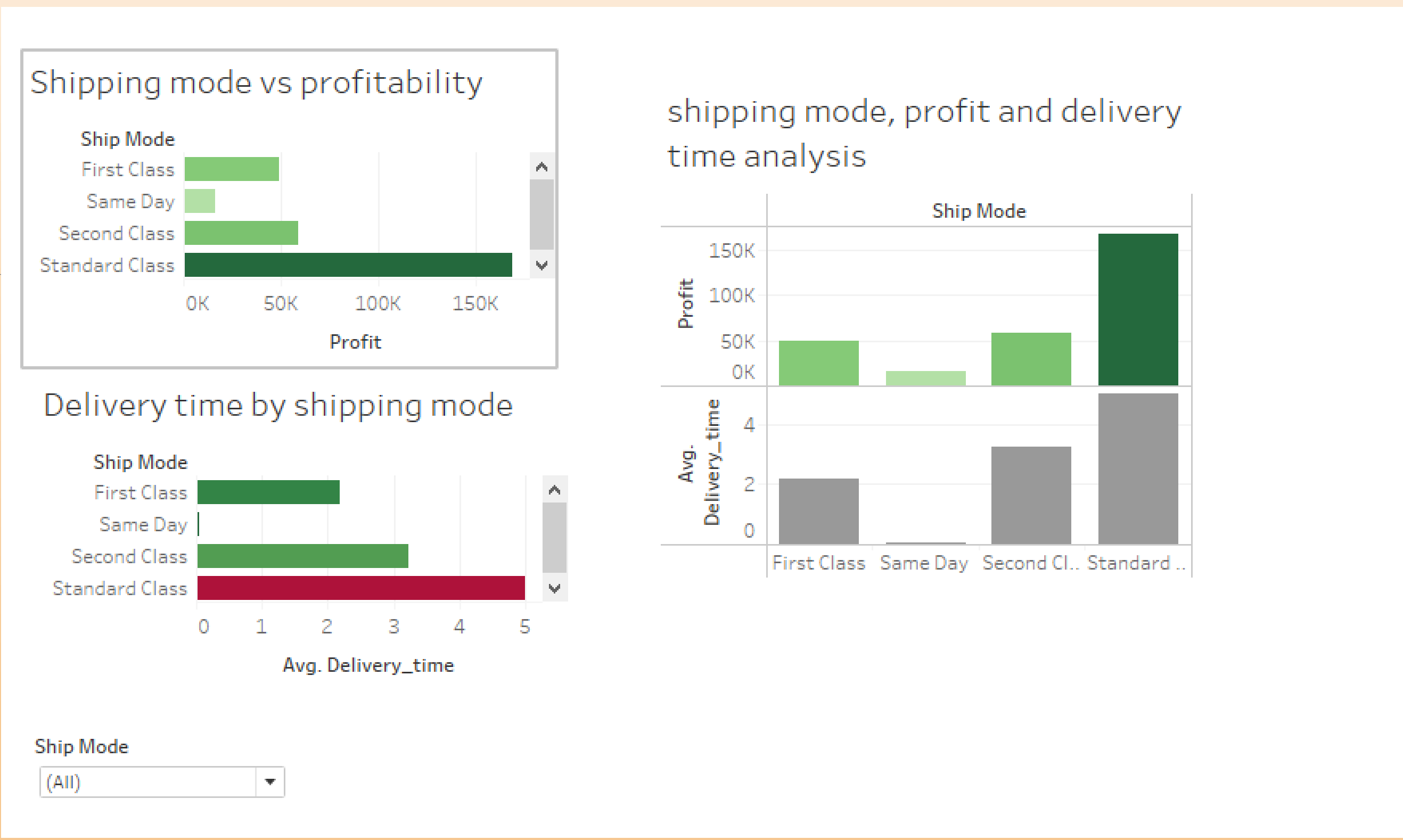


Fig4: Operational Performance

High profitability for the shipping mode “standard class”. Delivery time is high for standard class but at the same time profit is also high for this category.

References

Mahfuza, R., Uddin, R. S., Rahman, Y., & Hai, M. A. (2021, December). A Comprehensive Framework for Superstore Business with Employing Effective Clustering Techniques. In *2021 24th International Conference on Computer and Information Technology (ICCIIT)* (pp. 1-6). IEEE.

Janssen, D. (2024). *Product Recognition in Store Environments: A Deep Learning Approach* (Master's thesis, University of Twente).