Online Marketing research of USA

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The goal of this project is to give some suggestions for companies in their online market in USA

Data source

- Dataset containing all e-commerce transactions in USA from kaggle.com

- Dataset covering 2020 - 2021

sales overview

- 141,040 total transactions
- 86.16M $ total revenue

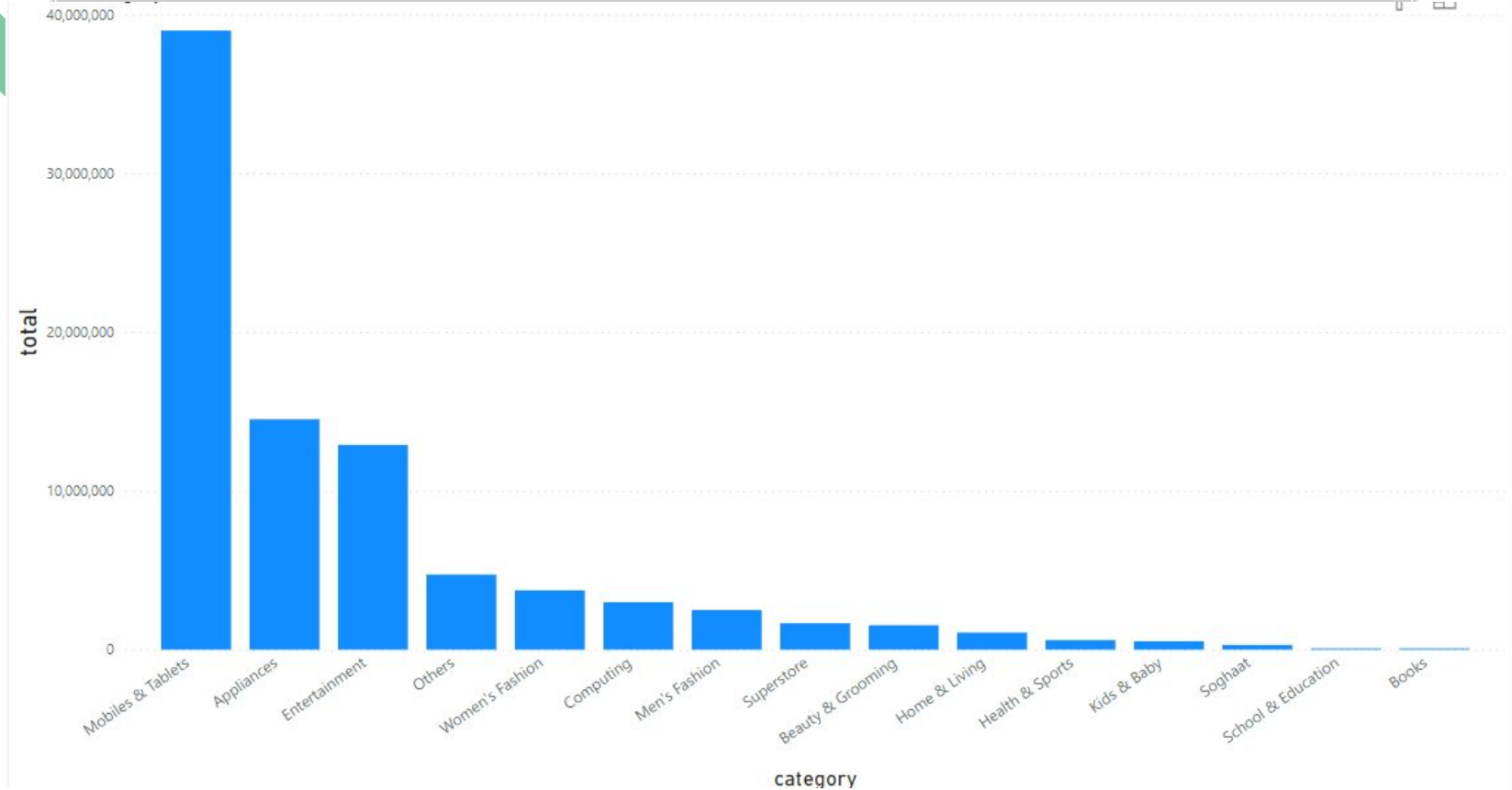
Data cleaning

-remove all bad data(orders not finished)

-fill nan values with mean

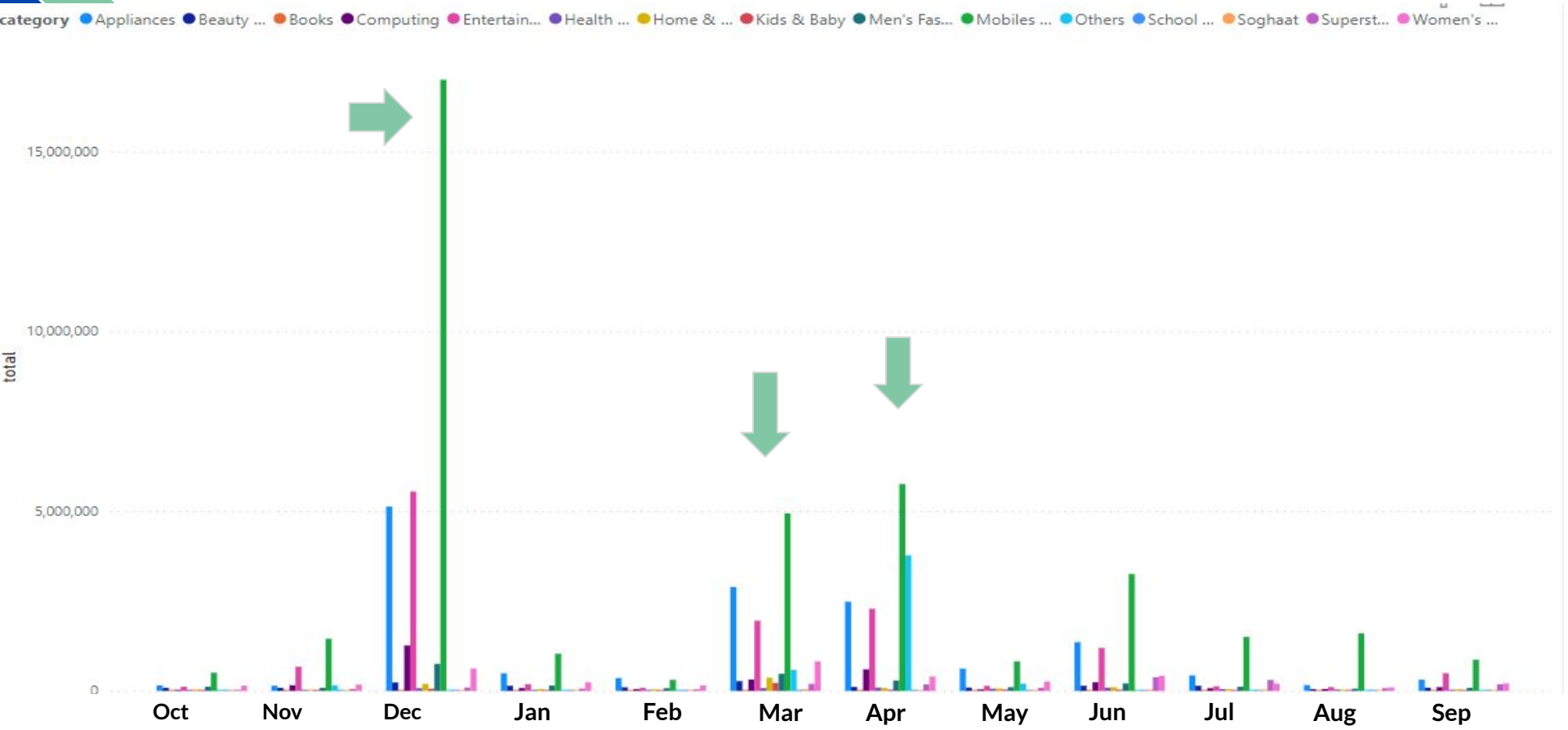
-remove extrem outliers

Data research

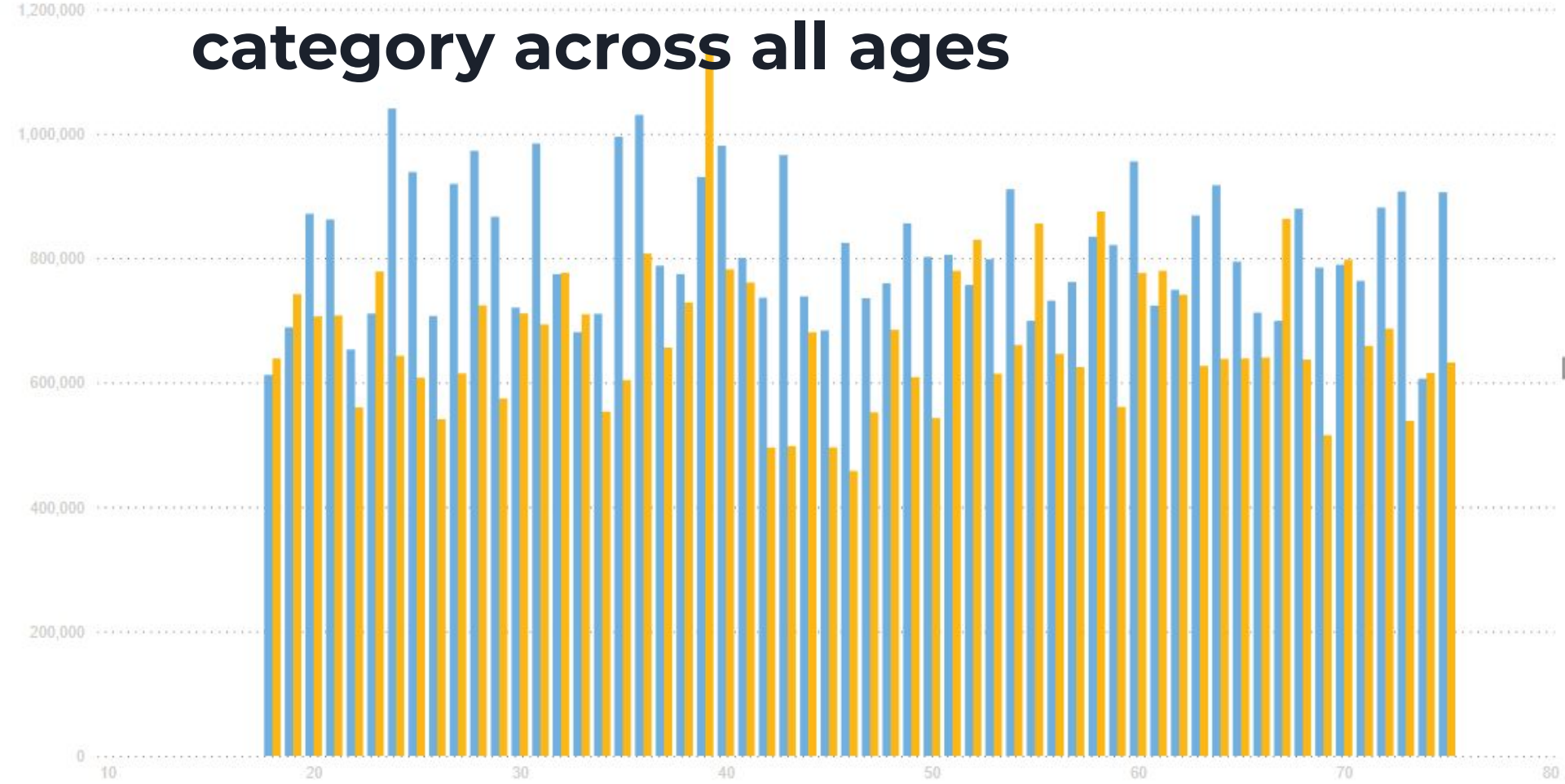


No significant difference between genders for each category.

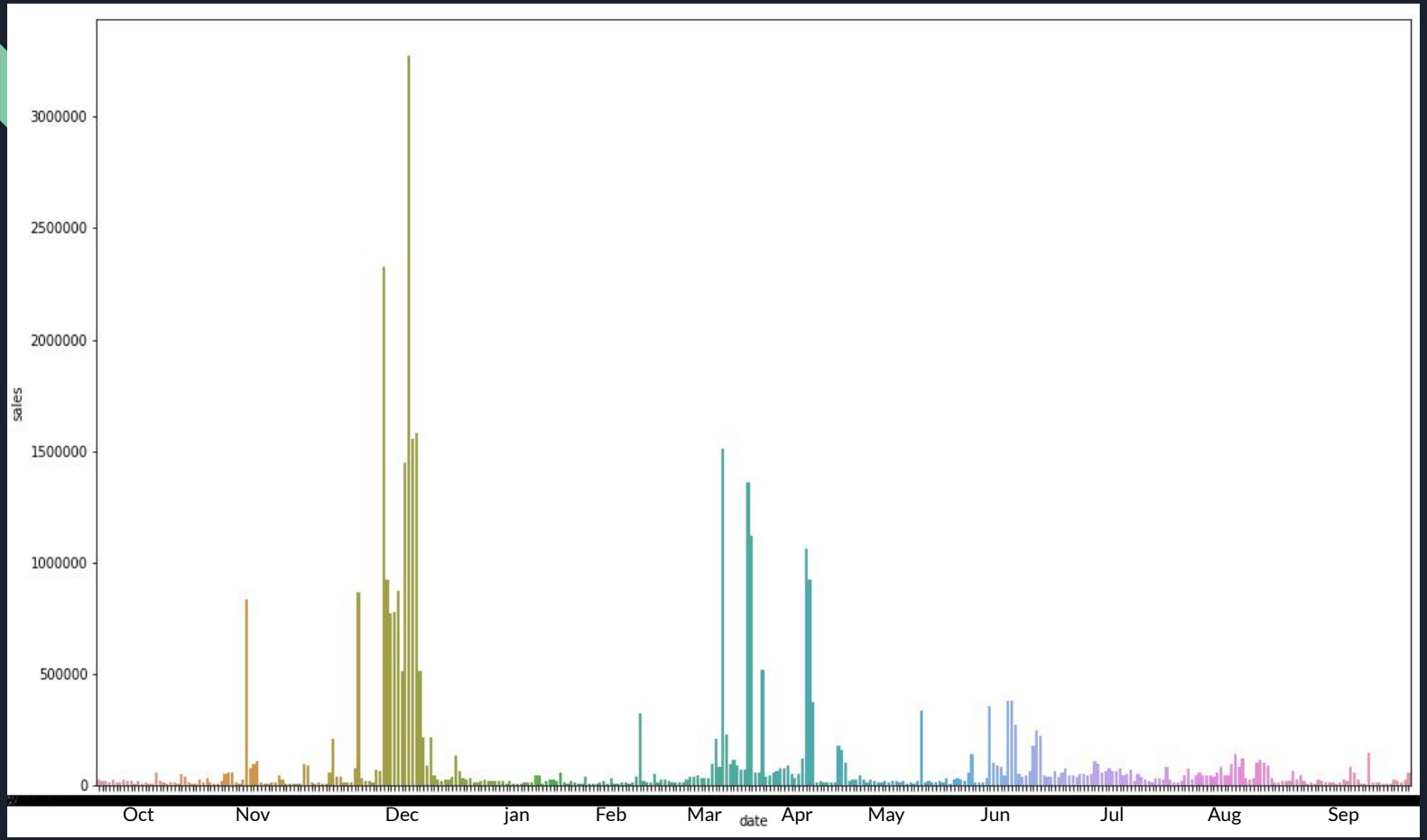
Sales of each category for 2020.10-2021.9



Mobile & Tablet is the most dominant category across all ages



Analysis for Best Sale month for 2020.10-2021.9



Sales strongly affected only by Christmas and New Year

sales amount

Prediction approach for the sales

Track the sales each day.

LR,SVR,DTR,RFR,RM

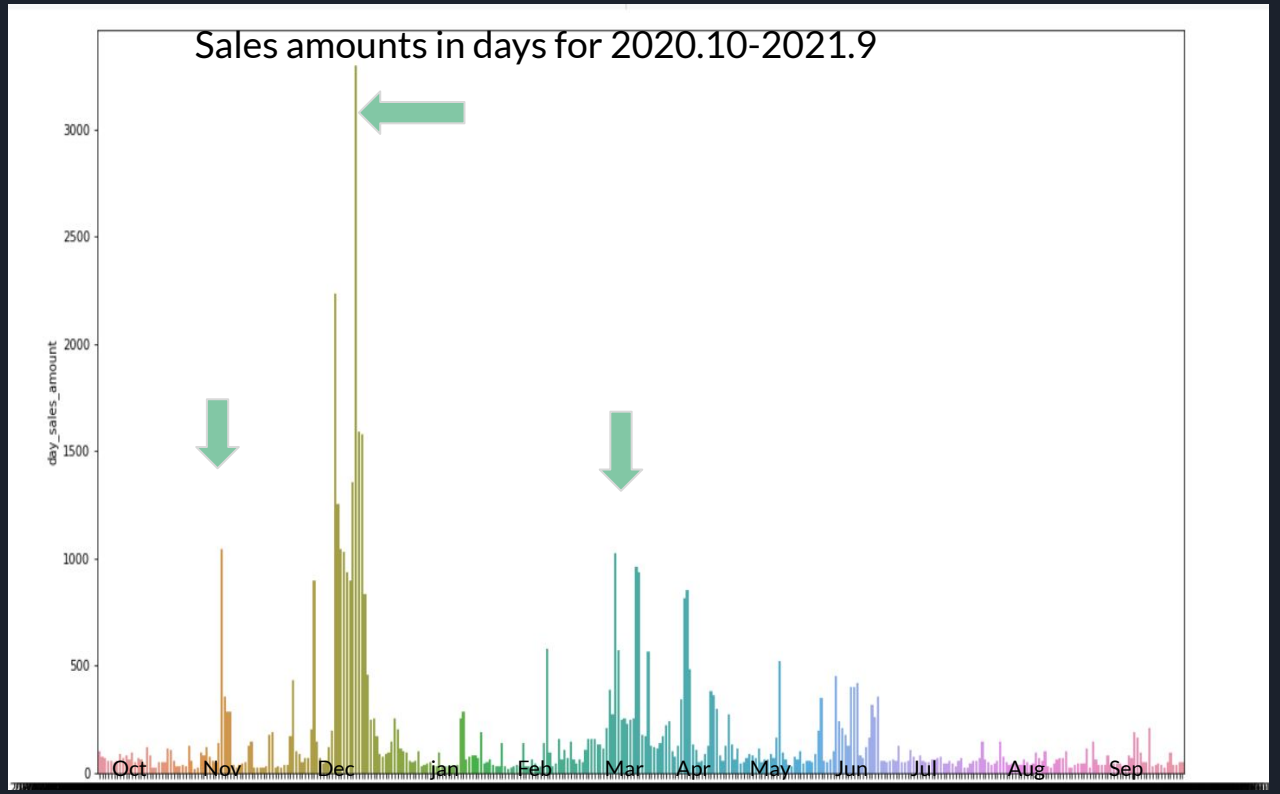
Random forest gives the best result.

The date and day sales amounts are main features applied for the prediction.

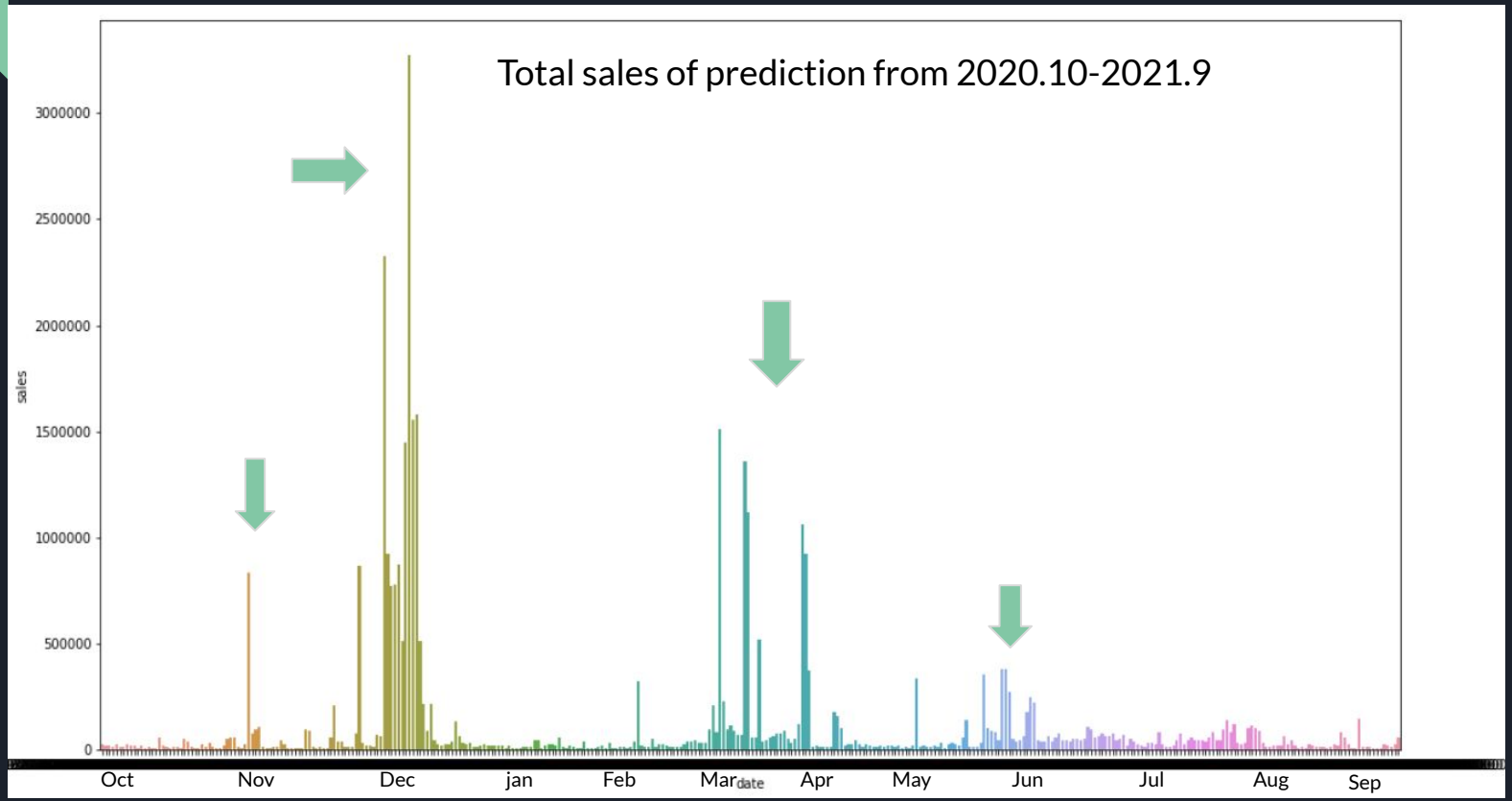
prediction scores

- r2 score : 0.731

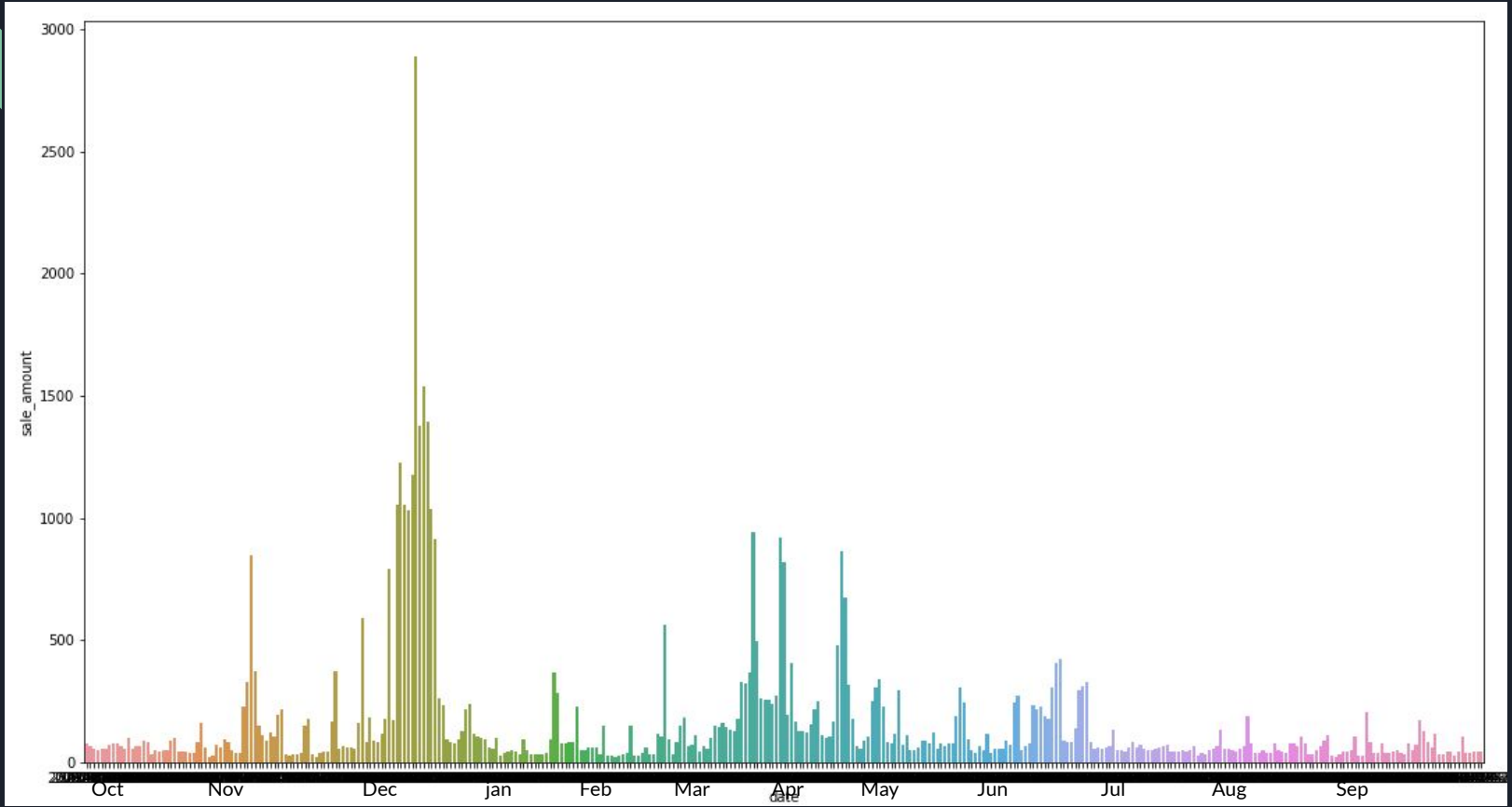
-r2 score : 0.852



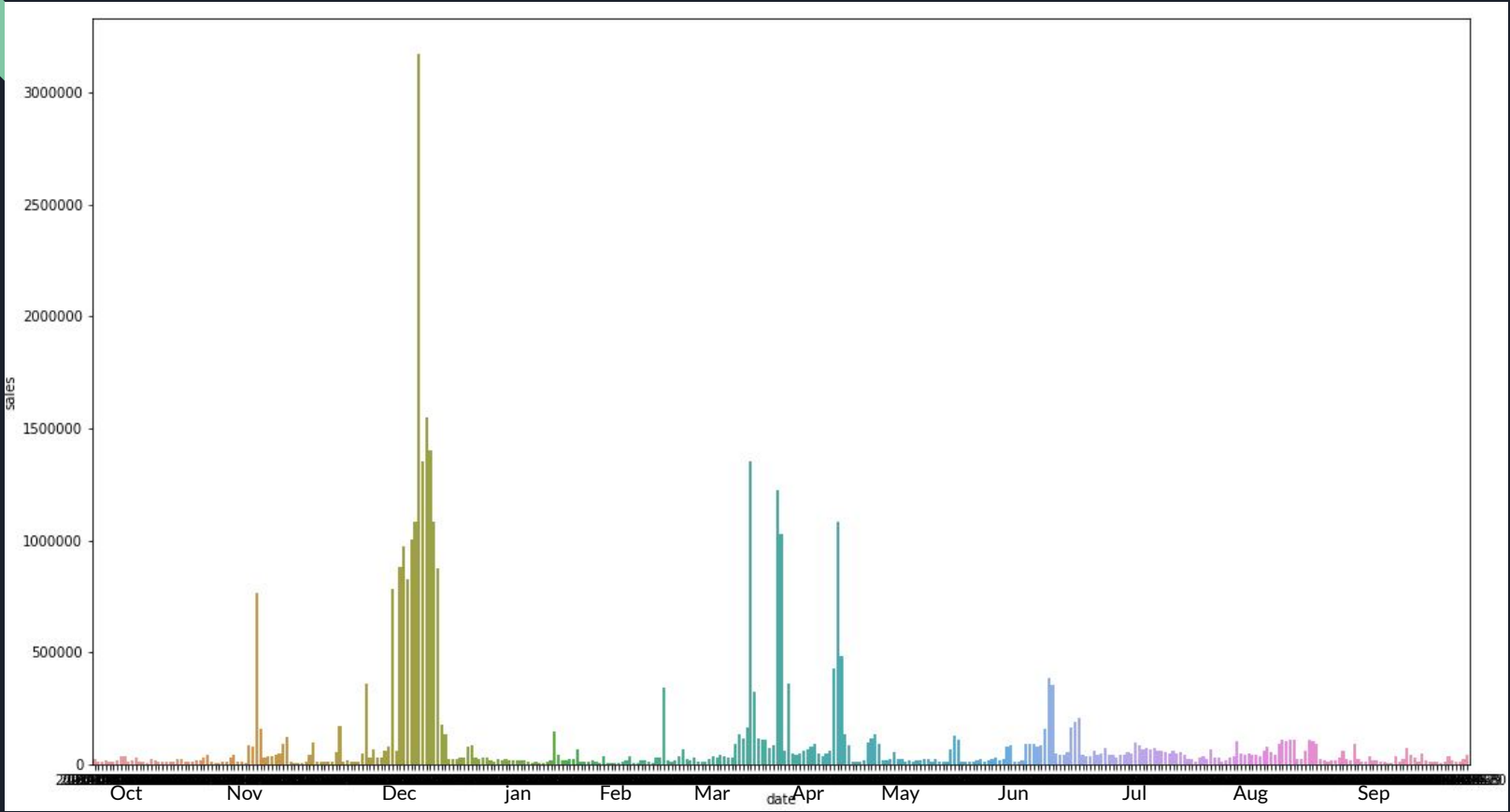
prediction result 2



Prediction of sales amount for the next year



Prediction of sales for 2021.10-2022.9



The analysis of popular product price

50% of orders have a total price between 450$ and 1800$

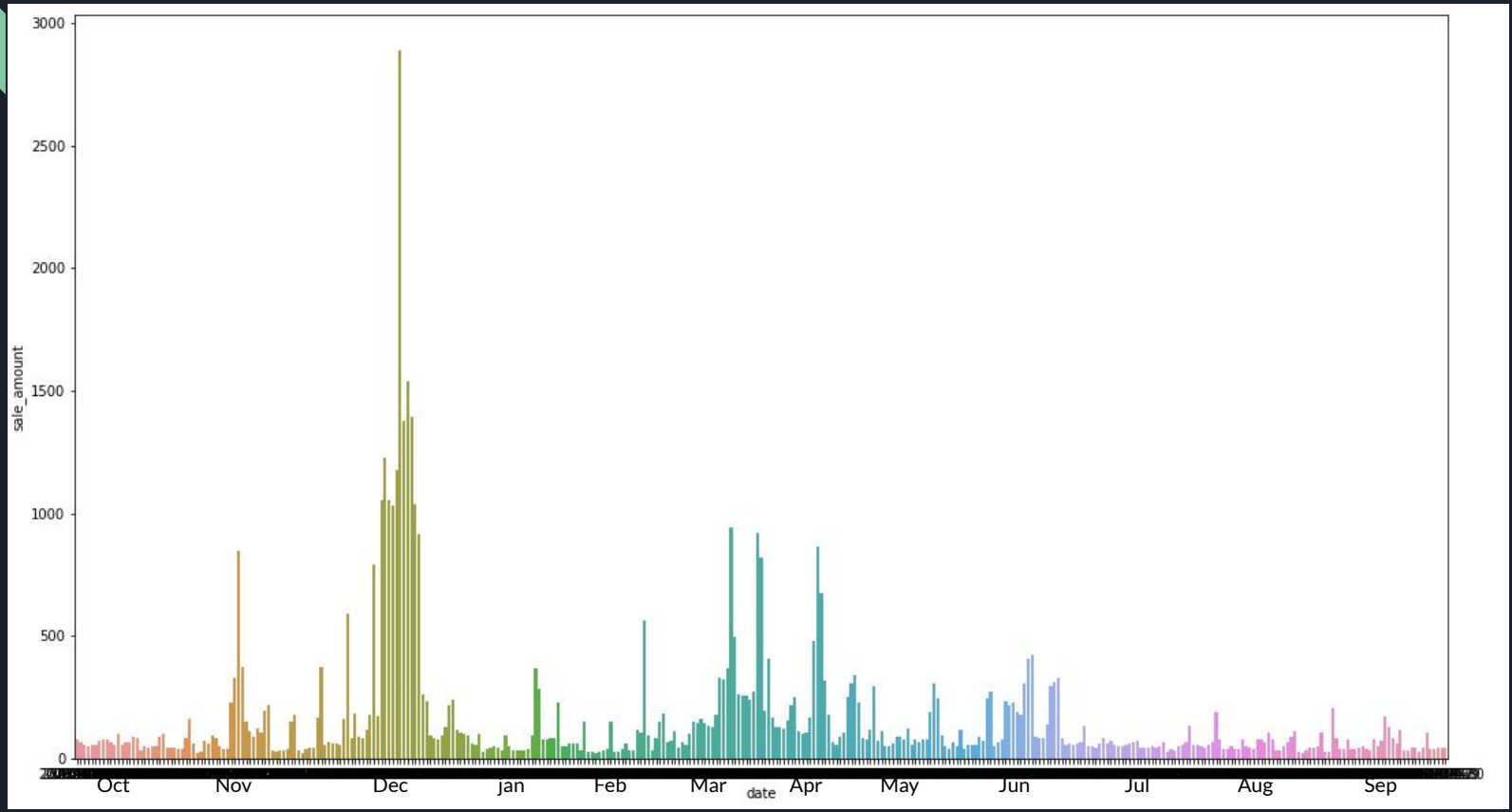
They contribute 36% of the total revenue.

Higher discount, higher daily sales.

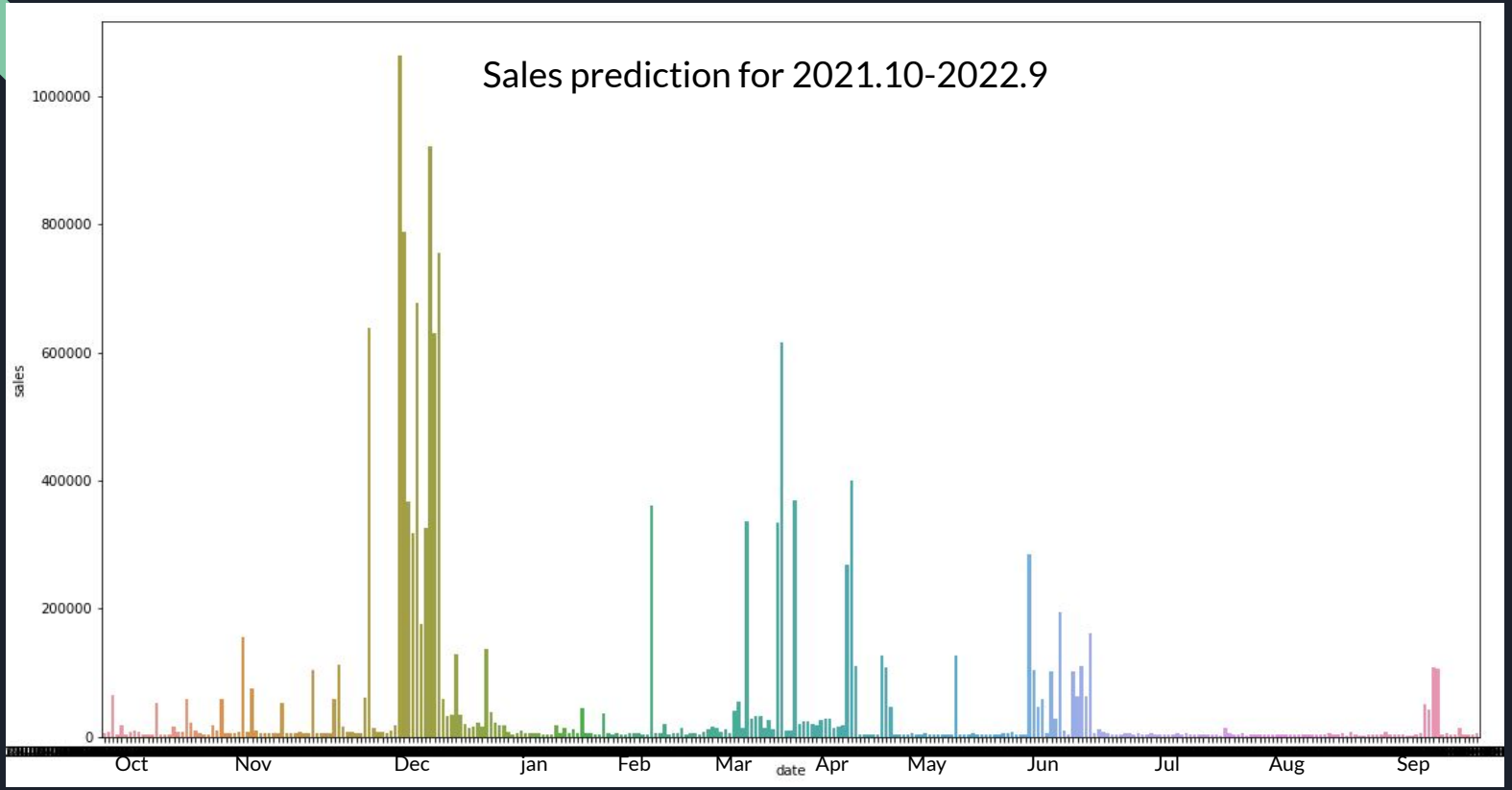
For other price range

25% of orders have a total sales above1800$, which contribute 62% of total.

ML model for the prediction 1



Deep learning model for the prediction 2



Next step

1.There are two more profitable categories, Entertainment and Appliances, it is interesting and valuable to cover others in the analysis using the similar model depending on what products the company is making.

Next Step

2. One further analysis can be applied based on ages, categories or some other online shopping behaviors to analyse more precisely to give better suggestions.

3. By using data from other companies or markets based on this model to give more suggestions for companies.

End

End

End

End