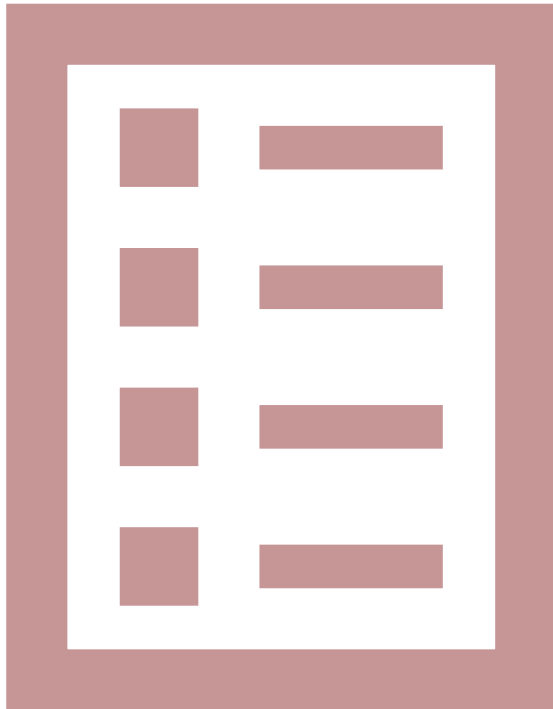




Nuveen Sales Increase Prediction Analysis



Agenda

- Background
- Objectives
- Methodology
- Data Analysis
- Analysis Results
- Recommendations
- Appendix

Background

➤ **Client:** Nuveen

- Nuveen was acquired by TIAA in 2014. TIAA is committed to helping institutions and individuals pursue positive outcomes through an array of global, diversified financial services and a long-term investment perspective.
- Nuveen is tasked with marketing and selling mutual funds through investment professionals like brokers, financial planners, and financial advisors.



Objectives

Create a logistic regression model that predicts the probability of an advisor increasing his/her sales from 2018 to 2019

Identify variables with the strongest predictability of sales increase and provide recommendations

Data

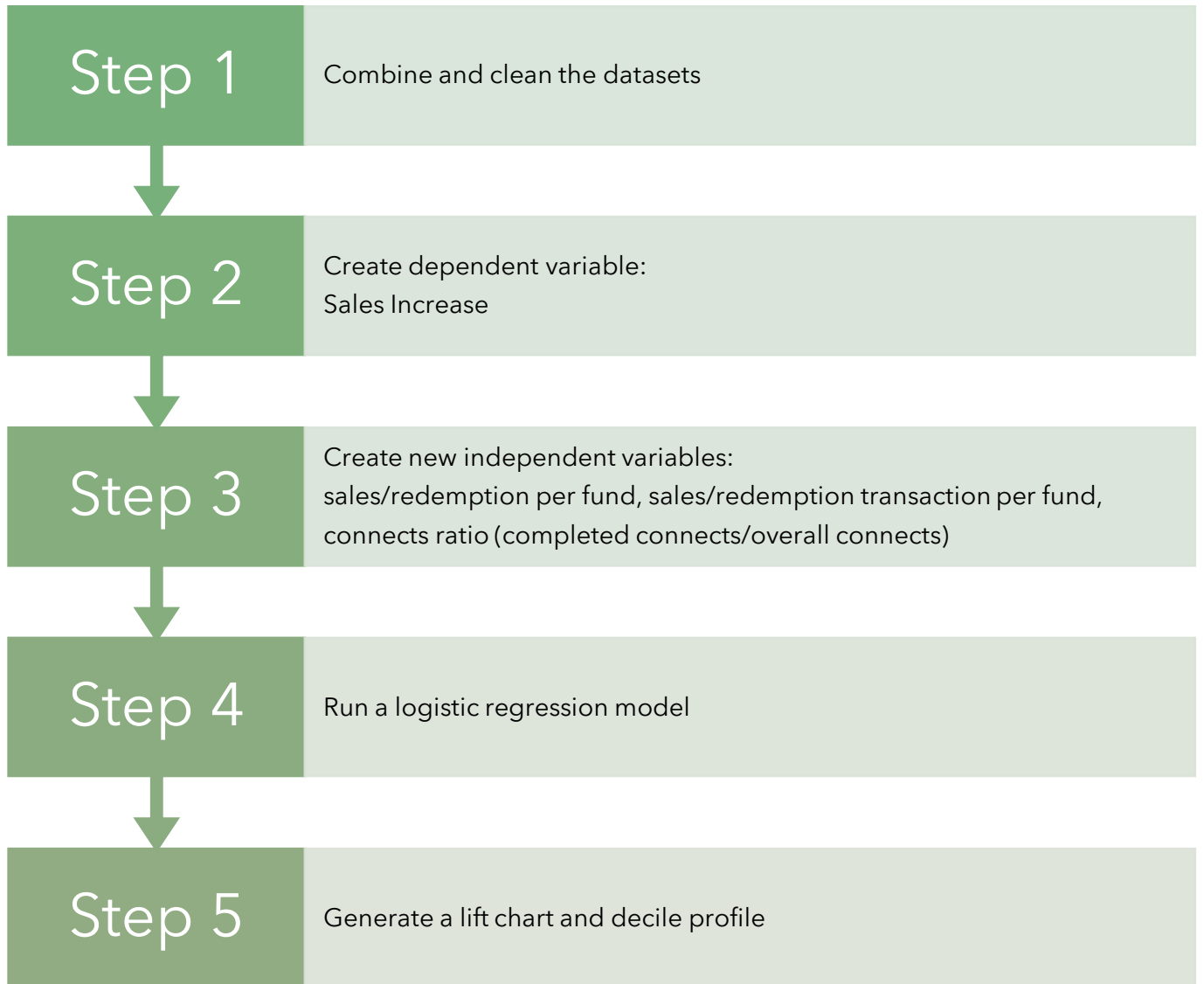


Nuveen:

- Nuveen Transaction Data (2018 & 2019)
- Nuveen Sales Activity Data (2018)
- Nuveen Web Activity Data (2018)

Methodology

Use Python to build our Logistic Regression model:



DATA ANALYSIS



Top Variable List



- Total Sales 2018
- Sales Transactions at \$10K 2018
- Funds Redeemed 2018 at \$10K
- Completed Connects
- Sales per Fund
- Redemptions per Fund
- Connects Ratio
- Sales Transactions per Fund
- Redemptions Transactions per Fund

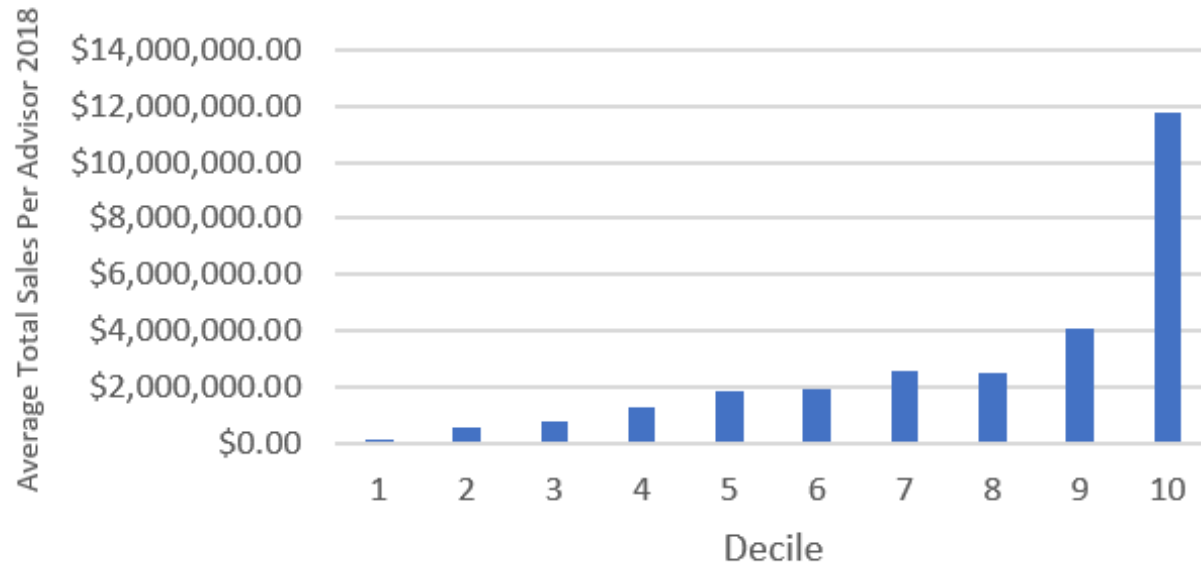
Lift Chart

Decile	Number of Advisors	Probability of Sales Increase Per Advisor	Lift Over Average	Cumulative Number of Advisors	Cumulative Probability of Sales Increase Per Advisor	Cumulative Lift
1	80	1.00	31%	80	1.00	31%
2	80	1.00	31%	160	1.00	31%
3	80	1.00	31%	240	1.00	31%
4	80	0.98	27%	320	0.99	30%
5	80	0.94	22%	400	0.98	28%
6	80	0.93	21%	480	0.97	27%
7	80	0.78	1%	560	0.94	23%
8	80	0.68	-12%	640	0.91	19%
9	80	0.23	-71%	720	0.83	9%
10	80	0.15	-80%	800	0.77	0%
Total	800	0.77	0%			

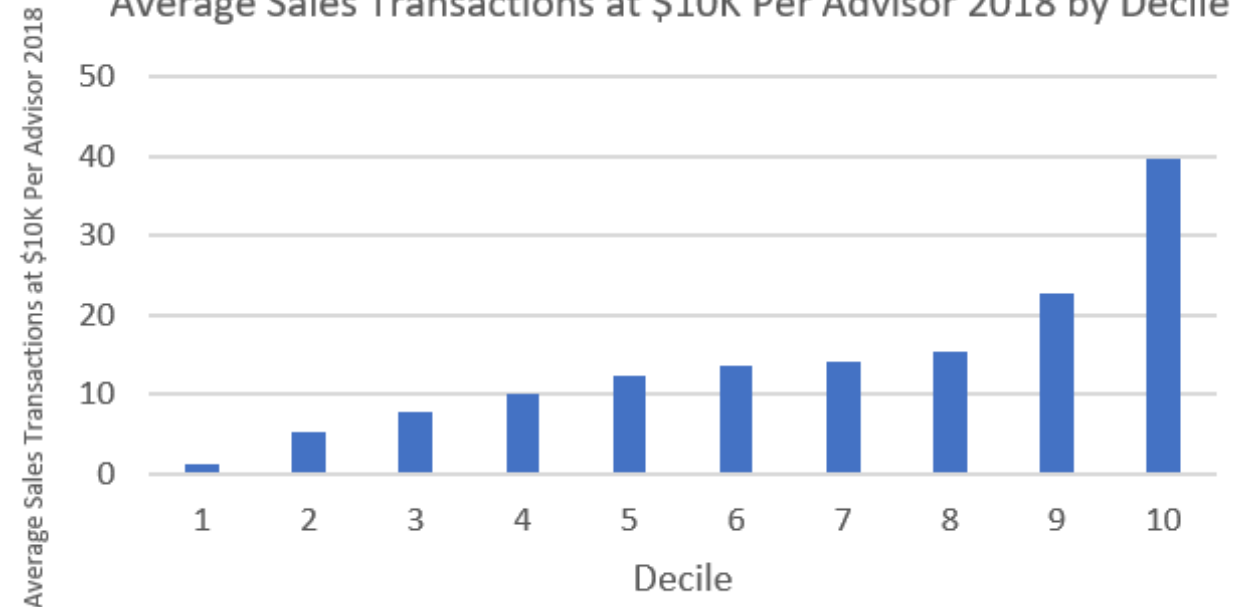
- Model Accuracy: **89%**
- Average probability of sale increase: **77%**
- Top 3 deciles: **100%**
- Top 6 deciles (individually): more than **93%**
- Top 6 deciles (cumulative): **97%**

Decile Profile

Average Total Sales Per Advisor 2018 by Decile

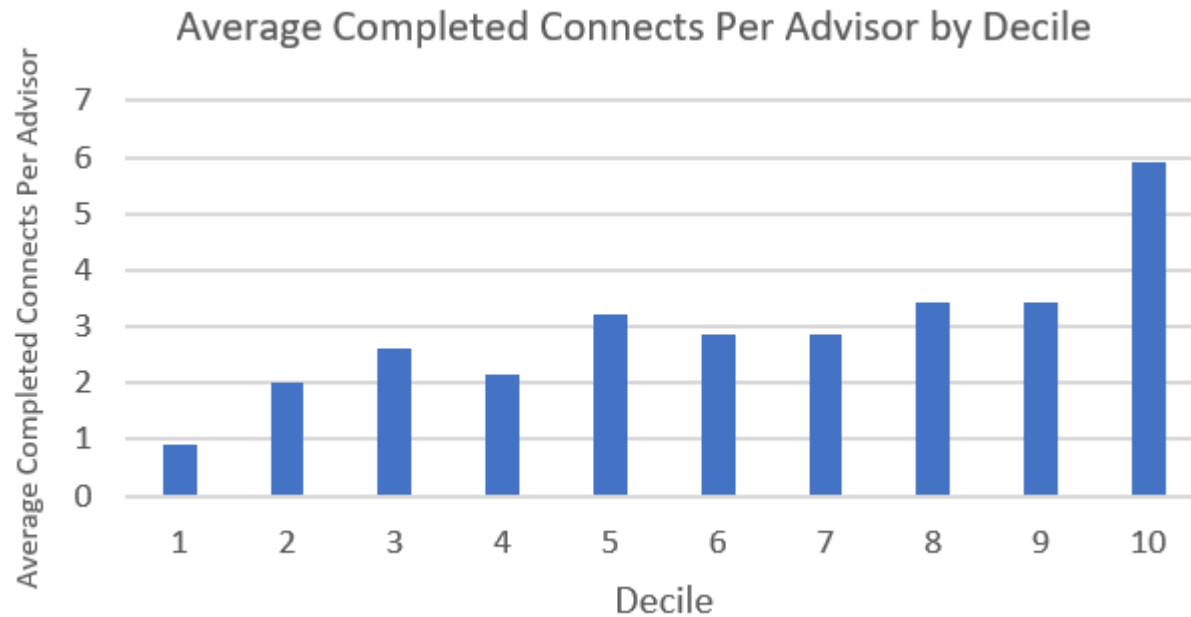


Average Sales Transactions at \$10K Per Advisor 2018 by Decile

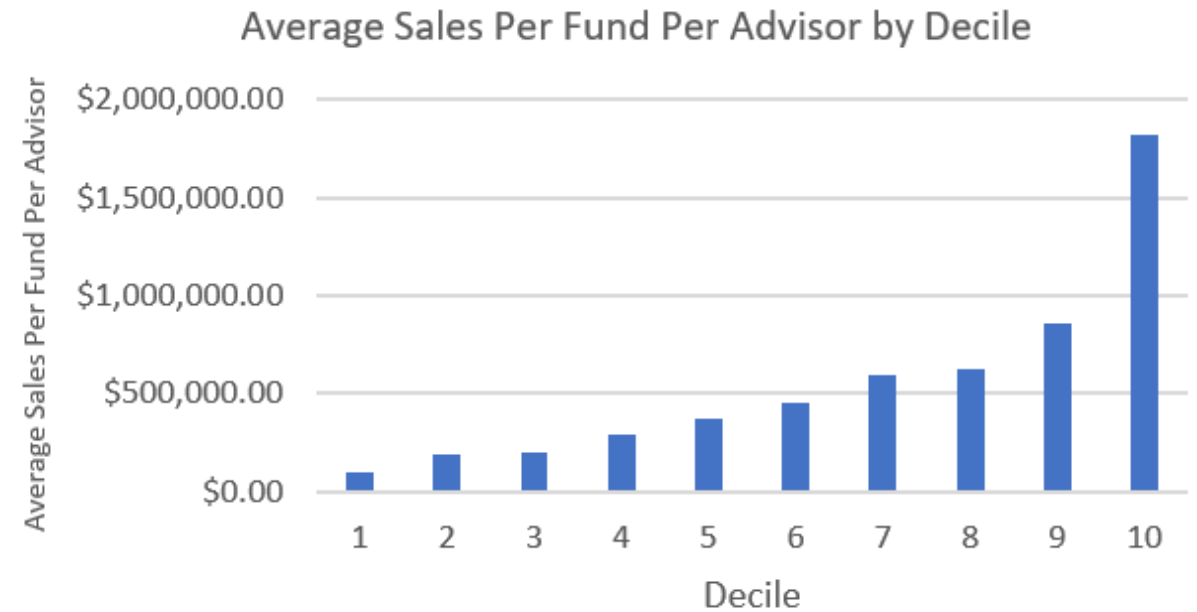


Our highest performing deciles (Decile 1 - 6) have the lowest total sales and the fewest number of sales transactions at \$10k or more in 2018

Decile Profile (cont.)



Decile 10 has much more completed connects than any other decile



Highest performing deciles (Decile 1 - 6) have the lowest sales per fund in 2018

Analysis Results

Most of the variables are negative predictors for sales increase

Advisors that have higher sales in 2018 are likely to have lower probability of sales increase from 2018 to 2019

RECOMMENDATIONS

Recommendations



Target advisors in Decile 1 – 6 for development in sales increase



Retain advisors in Decile 7 – 10 to prevent sales decrease



Increase live interaction (meetings, phone calls) between Nuveen salespeople and advisors that are most likely to increase their sales



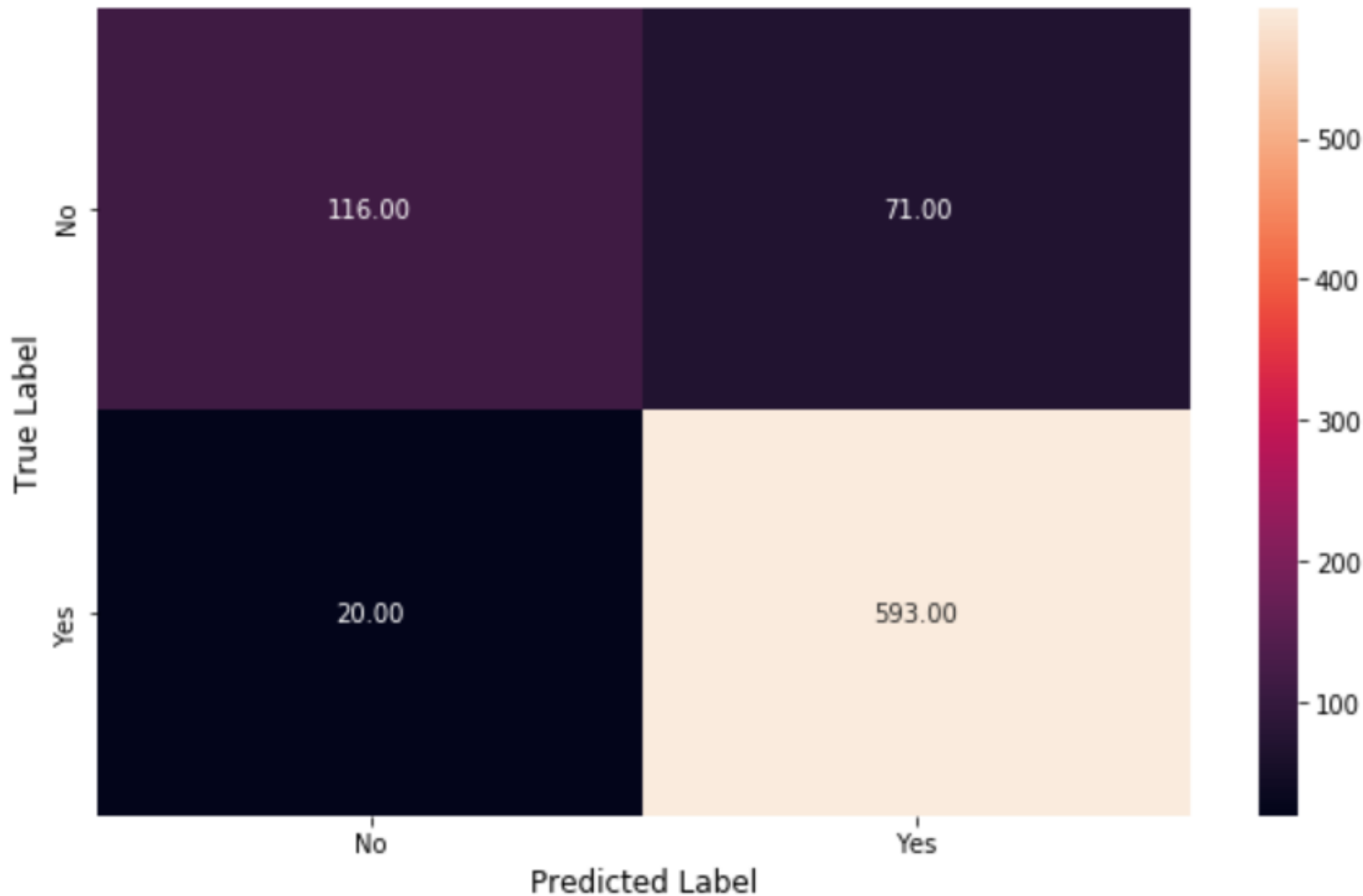
Remove the records for retirement plans in the dataset to increase accuracy of the model and reduce confusion

APPENDIX



Logistic Regression Model

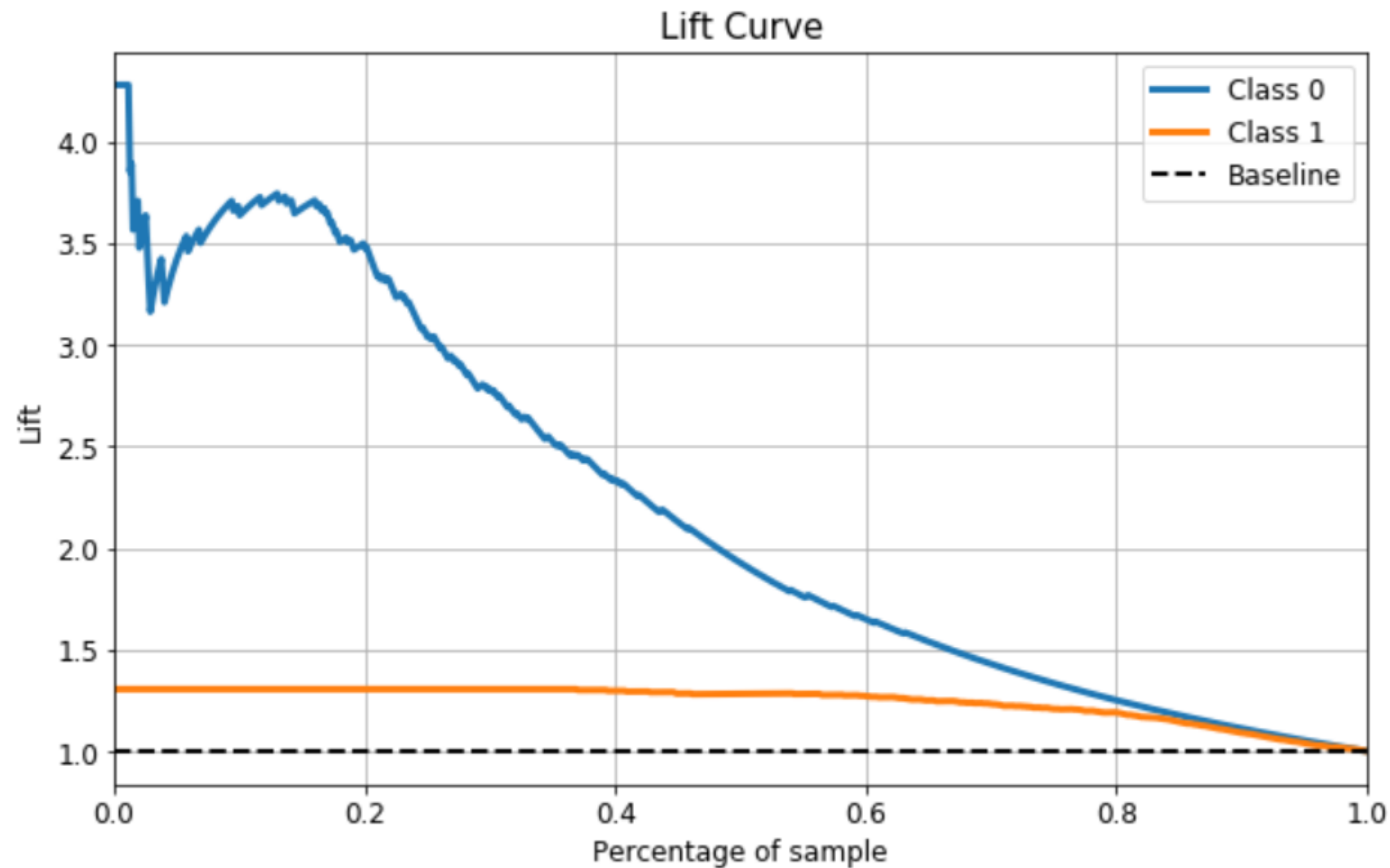
Confusion Matrix



Number of correct predictions by our model (out of **800**):

$$116 + 593 = \mathbf{709}$$

Lift Curve





Code

- [Final Project](#)
- [Final Project Modeling](#)

Thank You!

Any Questions?