PREDICTIVE ANALYSIS OF FEASIBILITY FOR PHONE CAMPAIGNS BY BANKS AND PAST RELEVANT FACTORS

BY:

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AGENDA

1. Introduction
2. Business and Data Understanding – We are looking at what we can improve on for the success of future phone campaigns for bank subscriptions to financial institutions
3. Modeling- Random Forest modeling helps us predict the most important features
    1. Modeling Continued-Success rate & Probabilities
    2. Results & Evaluation- looking at the important features
4. End
    1. Recommendations- What other models can we use to help identify trends in the data?
    2. Next Steps

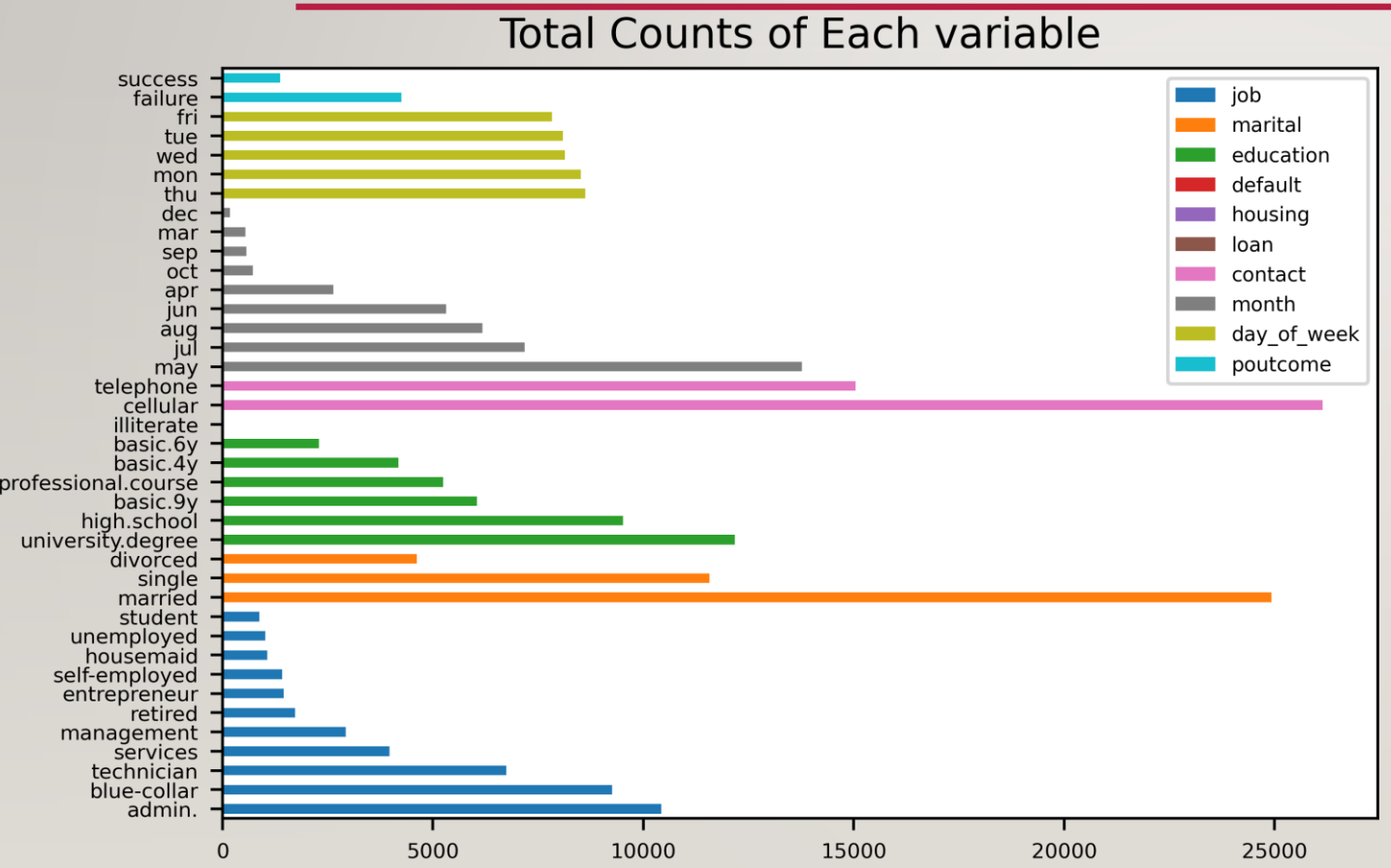
INTRODUCTION

- There are many ways for banks to gain capital, by selling their products to customers through
  - Varying methods of campaigning yield different results
- What is the success rate of a telemarketing campaign?
- Demographics of a customer, campaign characteristics, external economic variables are used to predict the success of selling a bank product in this analysis

BUSINESS PROBLEM & DATA

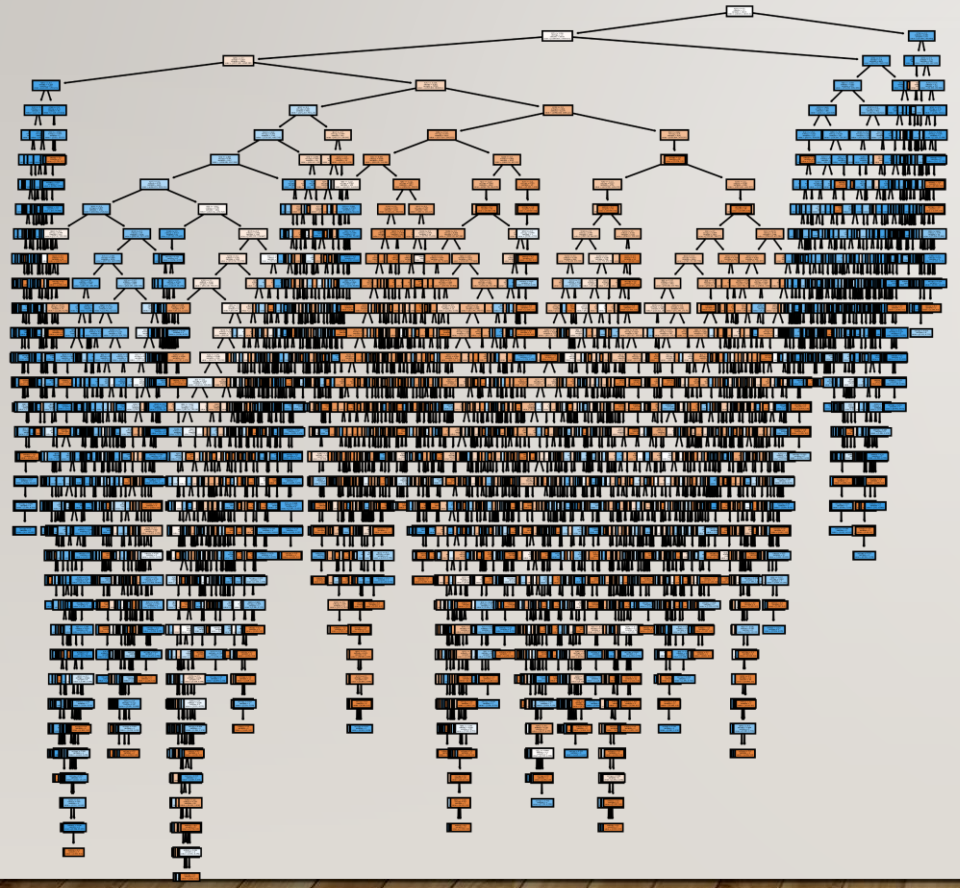
- Although we know banking institutions seek to acquire more capital, the major question is: can we sell bank products through the phone?
- Through campaigns, investment is required. The data is restricted, results will be communicated
  - Unfortunately, we do not have the investment nor capital gain values associated with the study to determine if the campaign was a success
    - We can artificially determine it
  - We can determine important variables related to the campaign

THE VARIABLES TARGETED



- We see that this past campaign hit a **target population** that usually
  - had more cellular conversation over landline
  - the person called was a university educated person and married
  - they also were in an administrative position
  - they were reached mostly in May in the previous campaign

MODELING

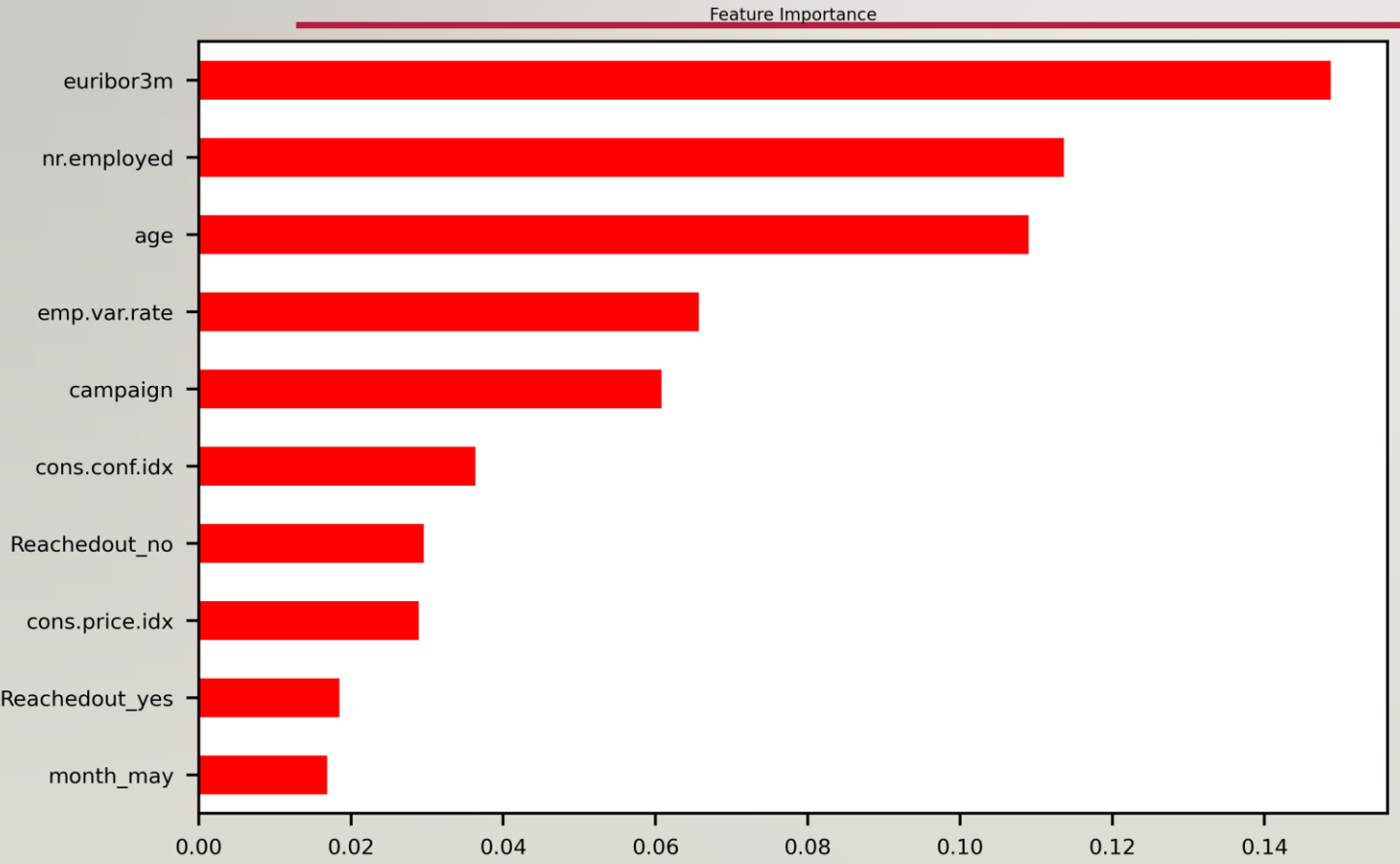


- Using RF as our model, we were able to find that the most impactful feature was the interest rate at which EU banks lend each other
- The accuracy of the mode is 88%, which means that it can predict the right results 88% of the time (if a future customer will subscribe)
  - Predicts whether a customer will subscribe
  - Tells us what factors we can focus on to improve the chances of subscription

RESULTS OF MODELLING

- Expected chance of making a successful phone call 16.14%
- Chance that those calls are lucky 46.76%
- Percentage of failed phone calls 83.85%
- Percentage of sales you would miss by accident 4.44%

EVALUATION: FEATURES TO IMPROVE ON



The original identified variables make an impact

Reaching out to Customers may be a positive or negative indicator of campaign success. However customer perception is more important.

Age is a very important variable in determining if they will either subscribe or not subscribe. There is a certain population that your calls work on and we need to find those clusters.

The amount of times you contact a customer impacts the outcome

Using RF as our model, we were able to find that the most impactful feature was the interest rate at which EU banks lend each other

RECOMMENDATIONS

- There exist a need to identify some trends within the data:
  - There is a certain age group that your calls work on and we need to find those clusters.
  - The amount of times you contact a customer impacts the outcome, what is the ideal range?
  - Using the subscriptions missed unintentionally, we should investigate further on what variables they had in common

CONCLUSION & NEXT STEPS

- Since communication through phone is not impactful in selling the product, is there another method?
- Are there other variables we haven't considered unique to the Portuguese culture when these phone calls were conducted? (including the cost of the subscription)
- A successful campaign determines on the interest rate in which the banks lend each other- further modeling would be needed to identify the proper numbers

Thank you!

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