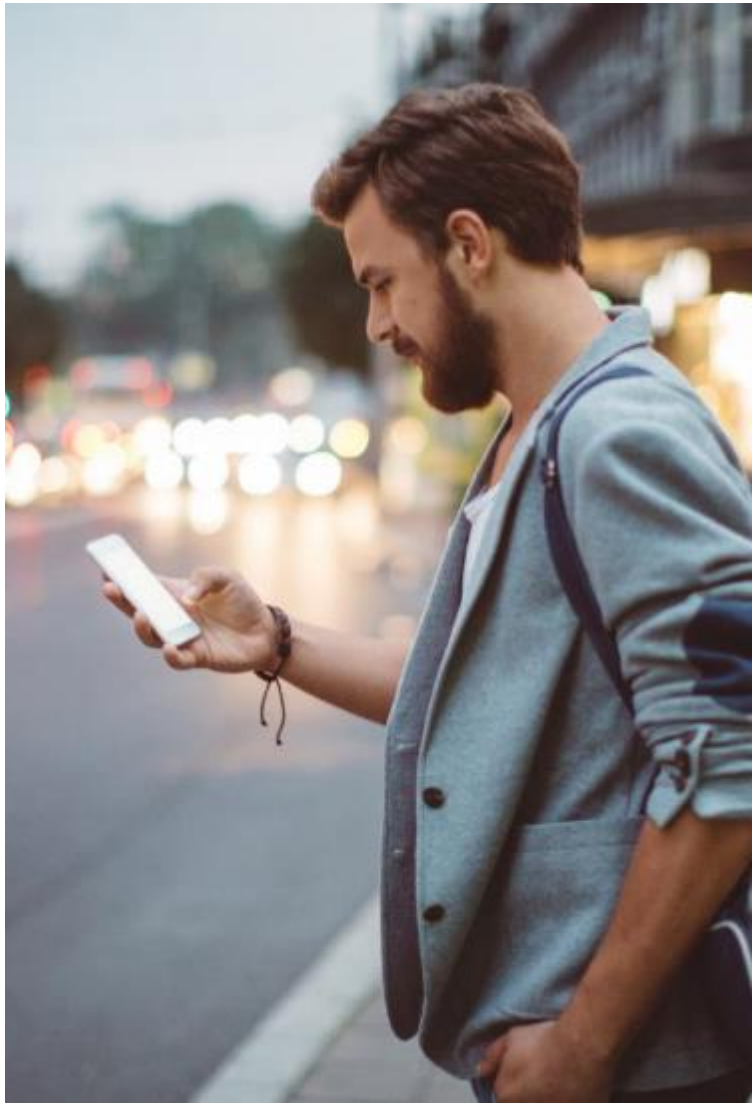
Customer Churn Analysis

Nopasorn Kowathanakul

Problem

Every day people change from one mobile network to another. Commonly service providers are trying their best to maintain their current customers rather than obtaining a new one. In this project, the classifier will be built to predict the pattern of churn customers to the telecom company.



Churn Customer Dataset

The data from SyriaTel will be used. The details are below:

- **state** - customer living state
- **account length** - customer usage length
- **area code** - customer area code number
- **phone number** - customer phone number
- **international plan** - customer use international plan or not
- **voice mail plan** - customer use voice mail plan or not
- **number vmail messages** - number of voice mail usage
- **total day minutes** - total day-time call length
- **total day calls** - total number of day-time call
- **total day charge** - total charge for day-time call
- **total eve minutes** - total evening-time call length
- **total eve calls** - total number of evening-time call
- **total eve charge** - total charge for evening-time call
- **total night minutes** - total night-time call length
- **total night calls** - total number of night-time call
- **total night charge** - total charge for night-time call
- **total intl minutes** - total international call length
- **total intl calls** - total number of international call
- **total intl charge** - total charge for internationl call
- **customer service calls** - number of customer call customer service
- **churn** - customer use or stop using service

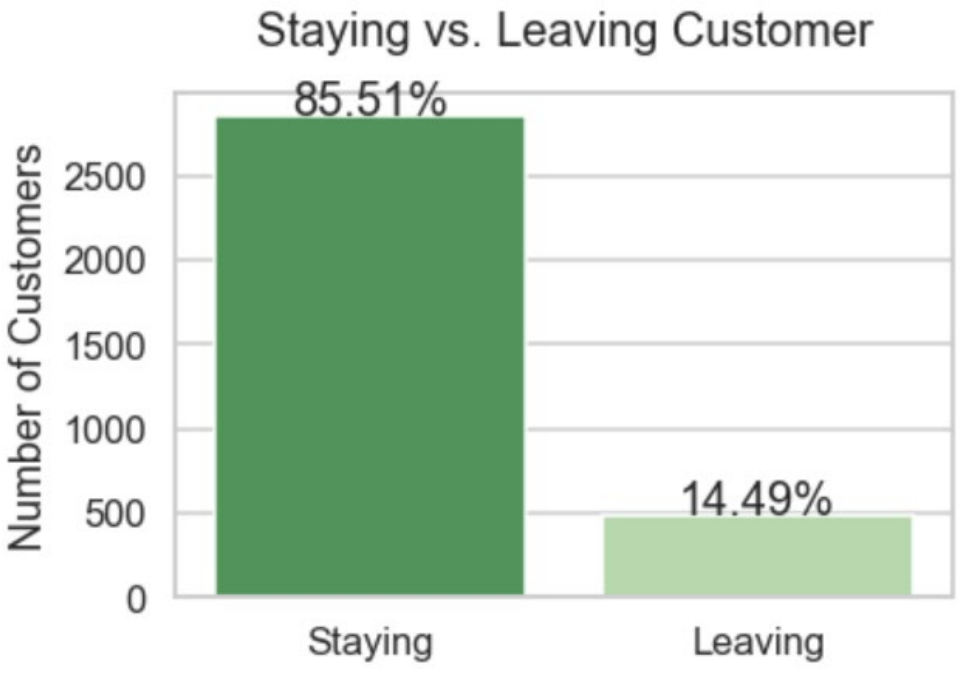
Current Business Status

From the observed customers, 3,333 people:

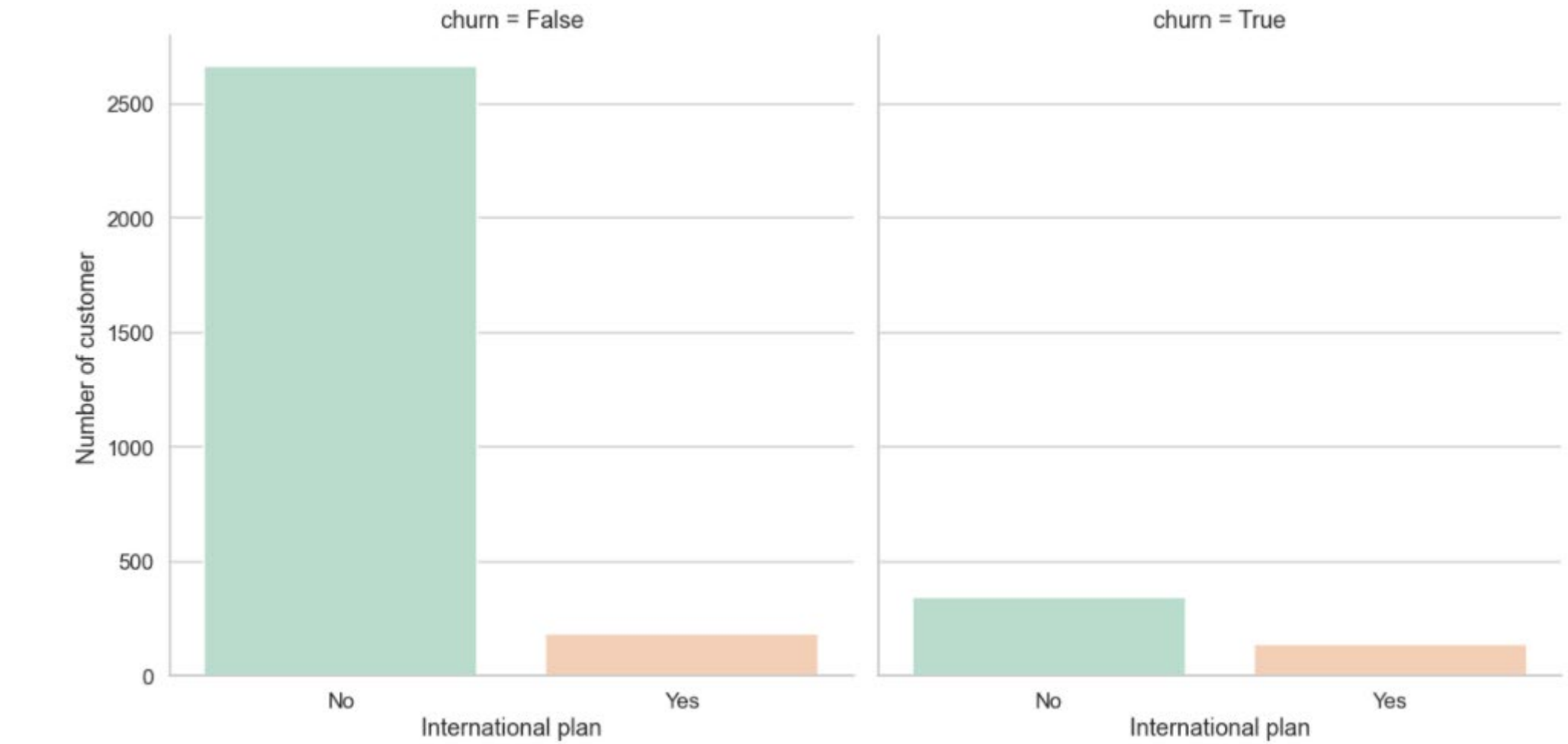
- The number of customers who are leaving is still not high, approximately 14.49%.
- The number of customers who are staying is 85.81%.

There are only two plans available for customer:

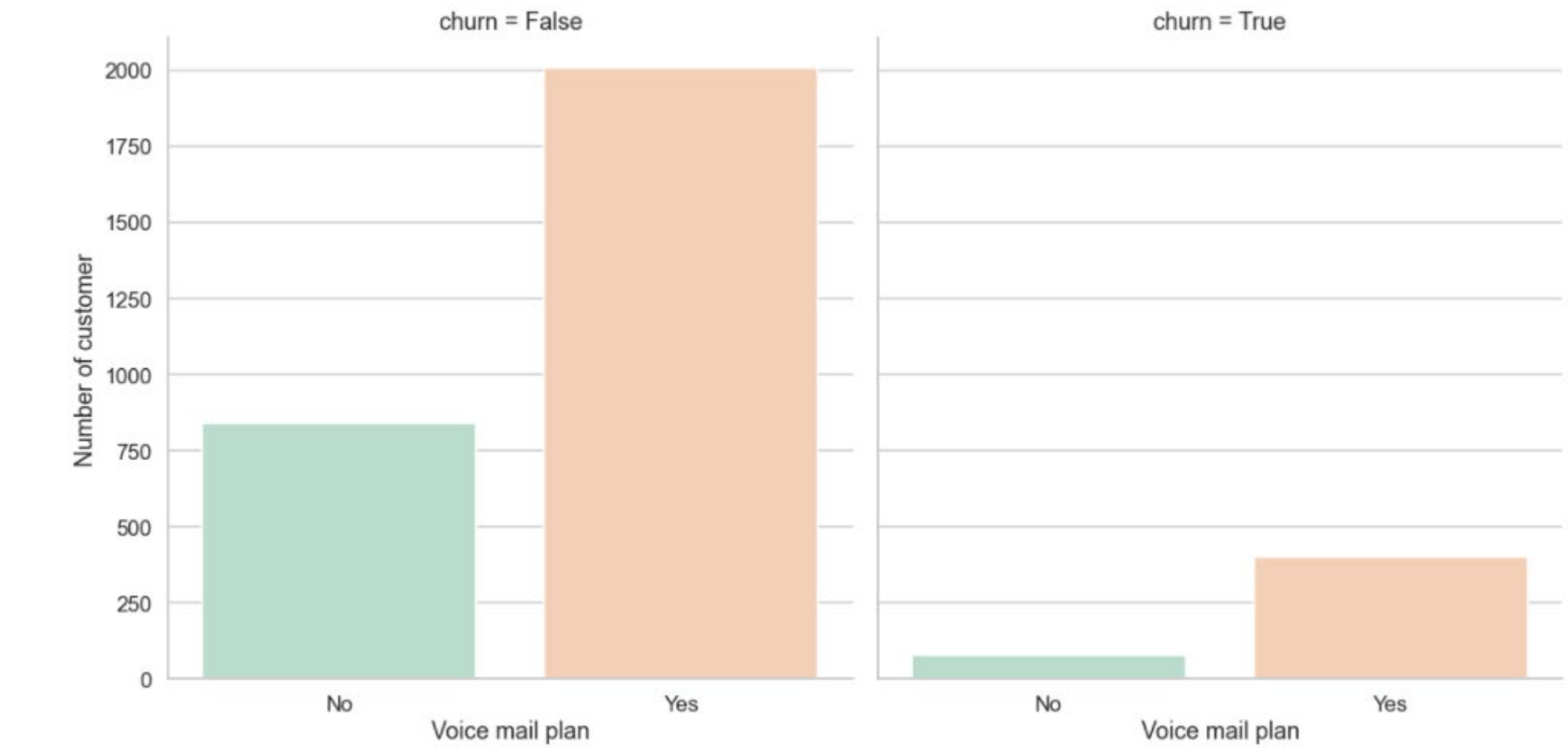
1. International plan
2. Voice mail plan



Effect of International Plan

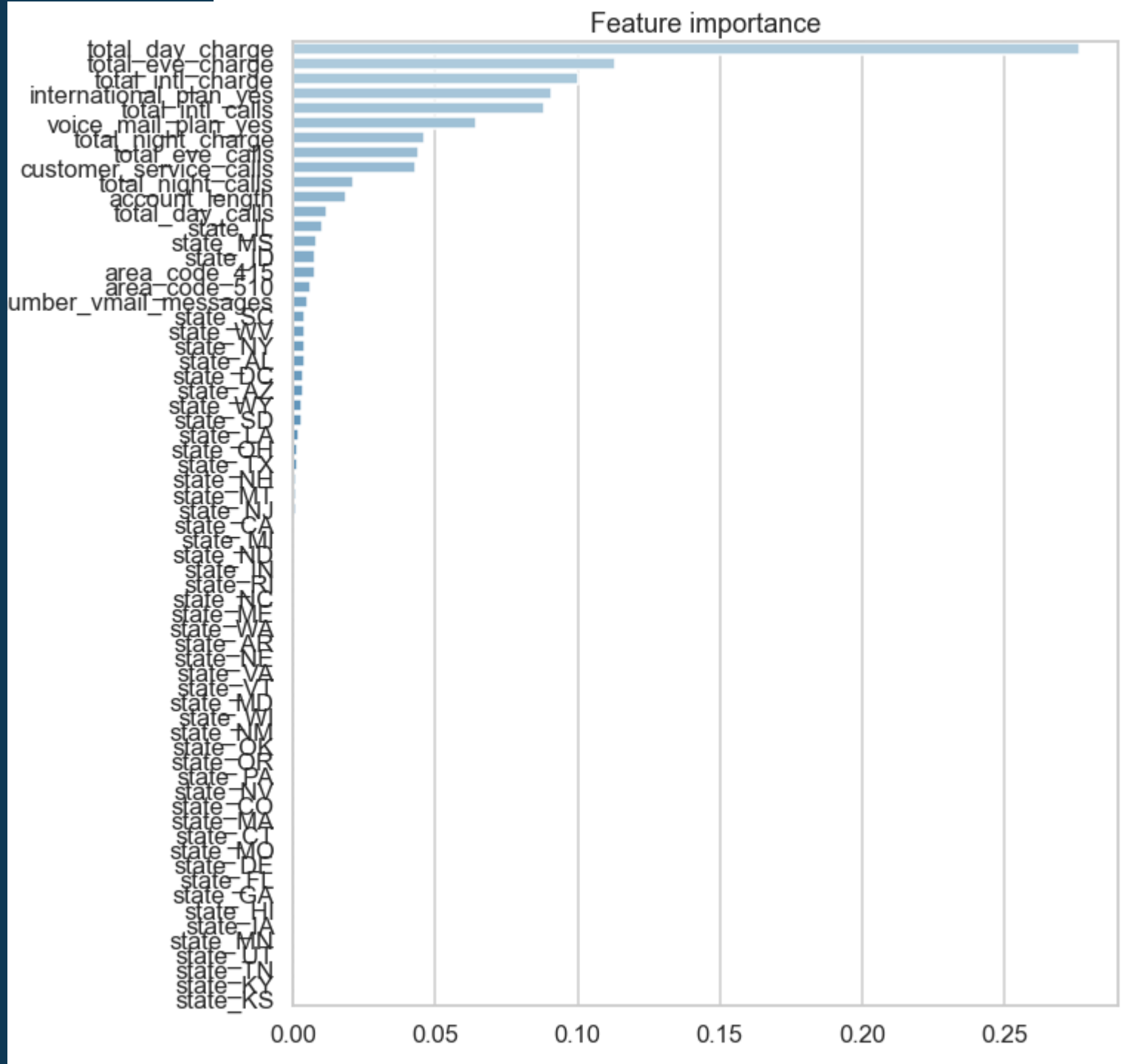


Effect of Voice Mail Plan



Important Factors

Obviously, the cost is the critical factor. The plan for each time call should be helpful.



Machine Learning Prediction Performance

- The accuracy is 92.81%
- The precision for staying customer is 96%
- The precision for leaving customer is 71%

Thank you