

Capstone Project

Telecom Churn Analysis

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Problem Statement

- What are the key factors responsible for Customer Churn.
- Analysis of Churners based on International Plan
- Analysis of Churners based on States
- Analysis of Churners based on Area Code
- Analysis of Churners based on Customer Service Calls
- Analyze relation between call minutes and call charges during different time of the day.

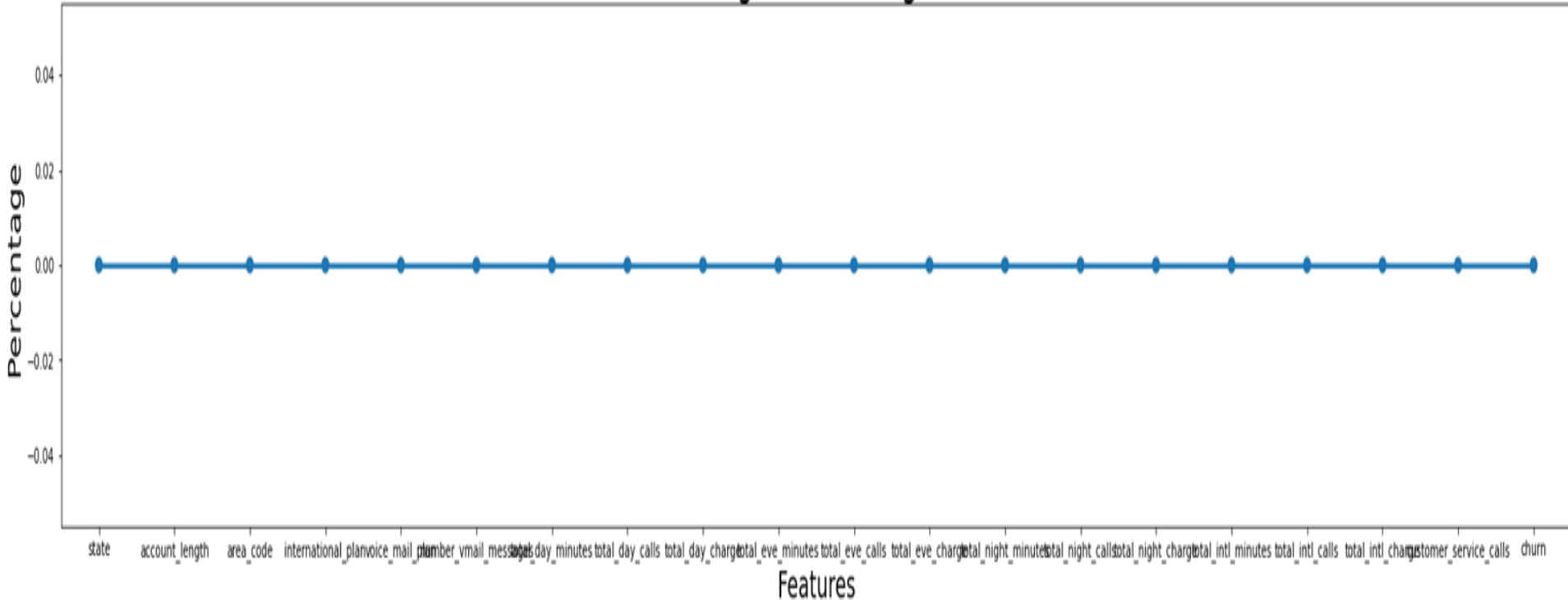


Data Summary

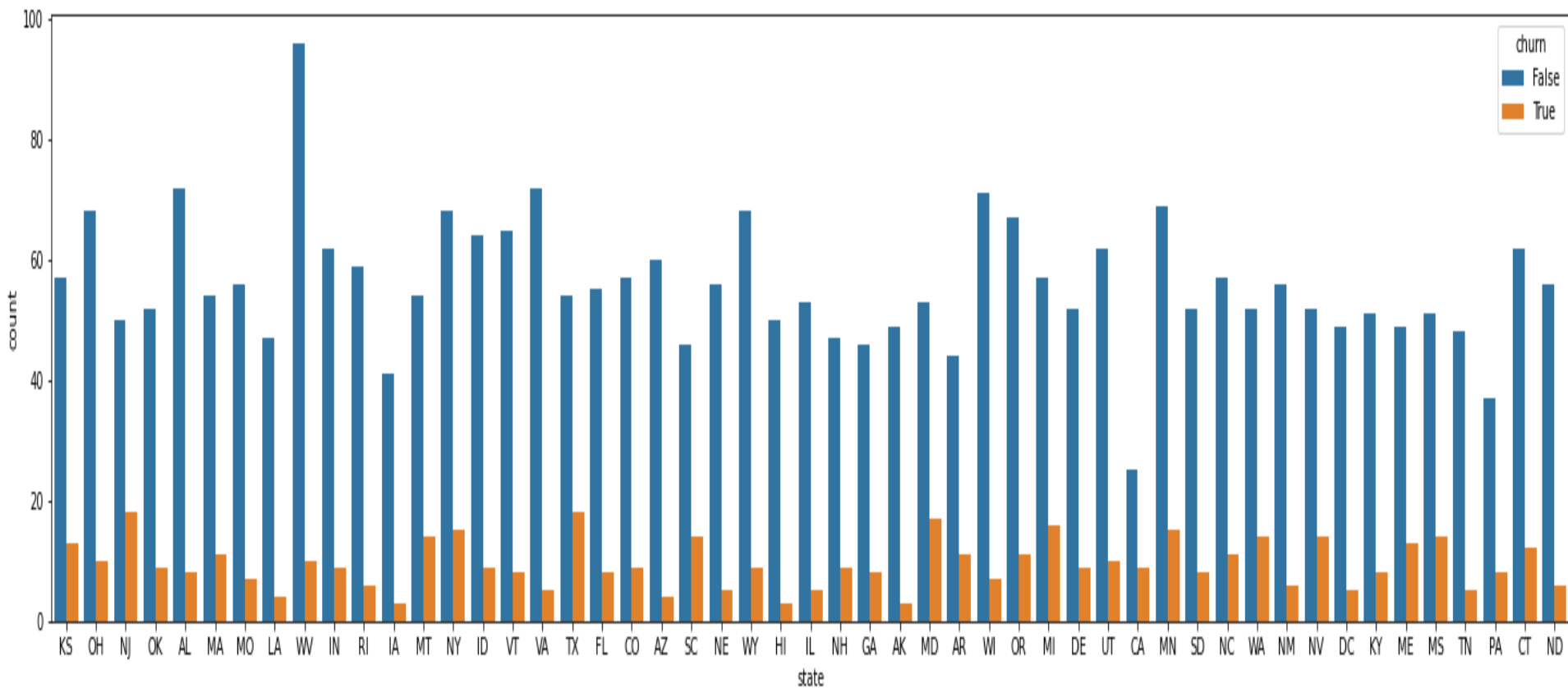
- Telecom Churn Dataset
- The dataset has 20 features and 3333 observations
- There is no null values in the dataset
- Few important features of the dataset :
 - International Plan – Customer was using International Plan or not.
 - Voice Mail Plan – Did Customer opted for Voice mail services?
 - Total day/evening/night calls and their charges.
 - International Calls and it's charges.
 - Customer Service Calls

Checking missing values in the dataset.

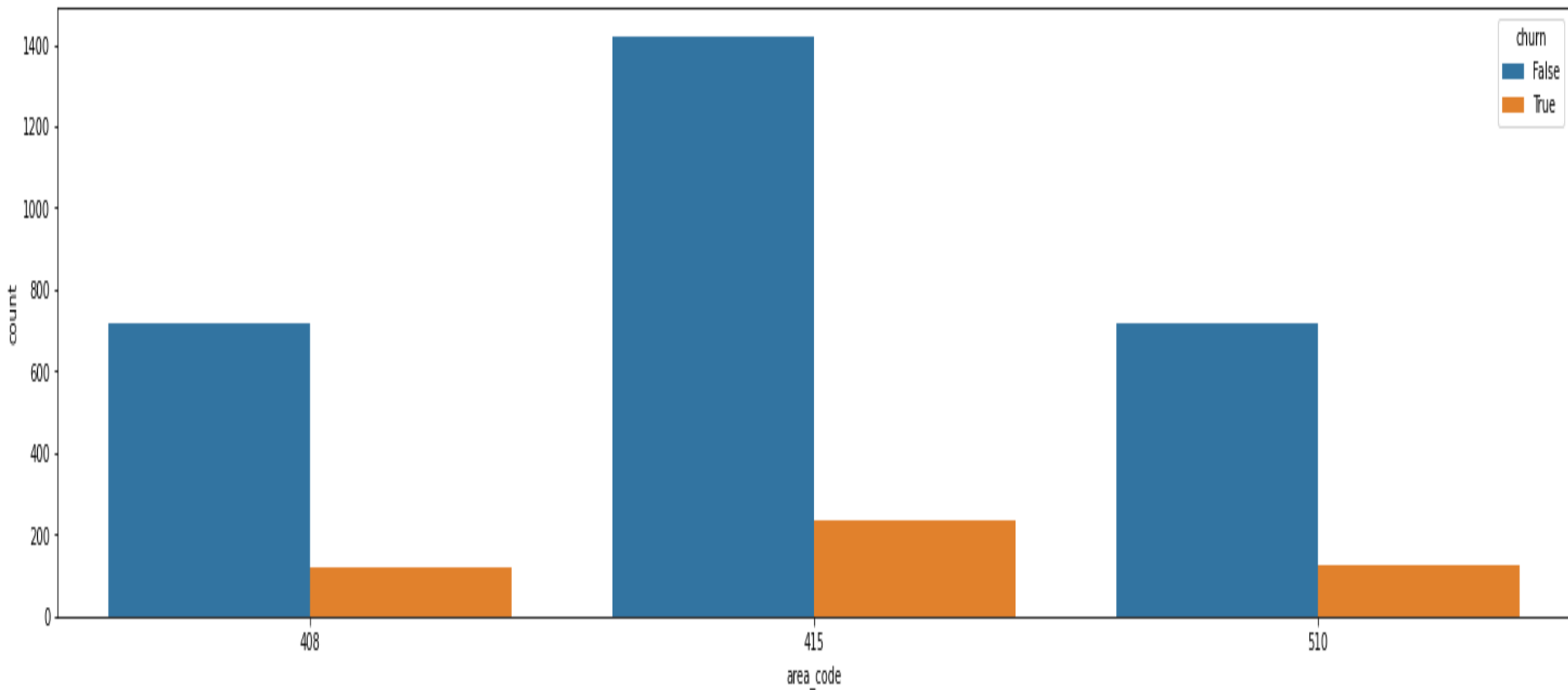
Percentage of missing values



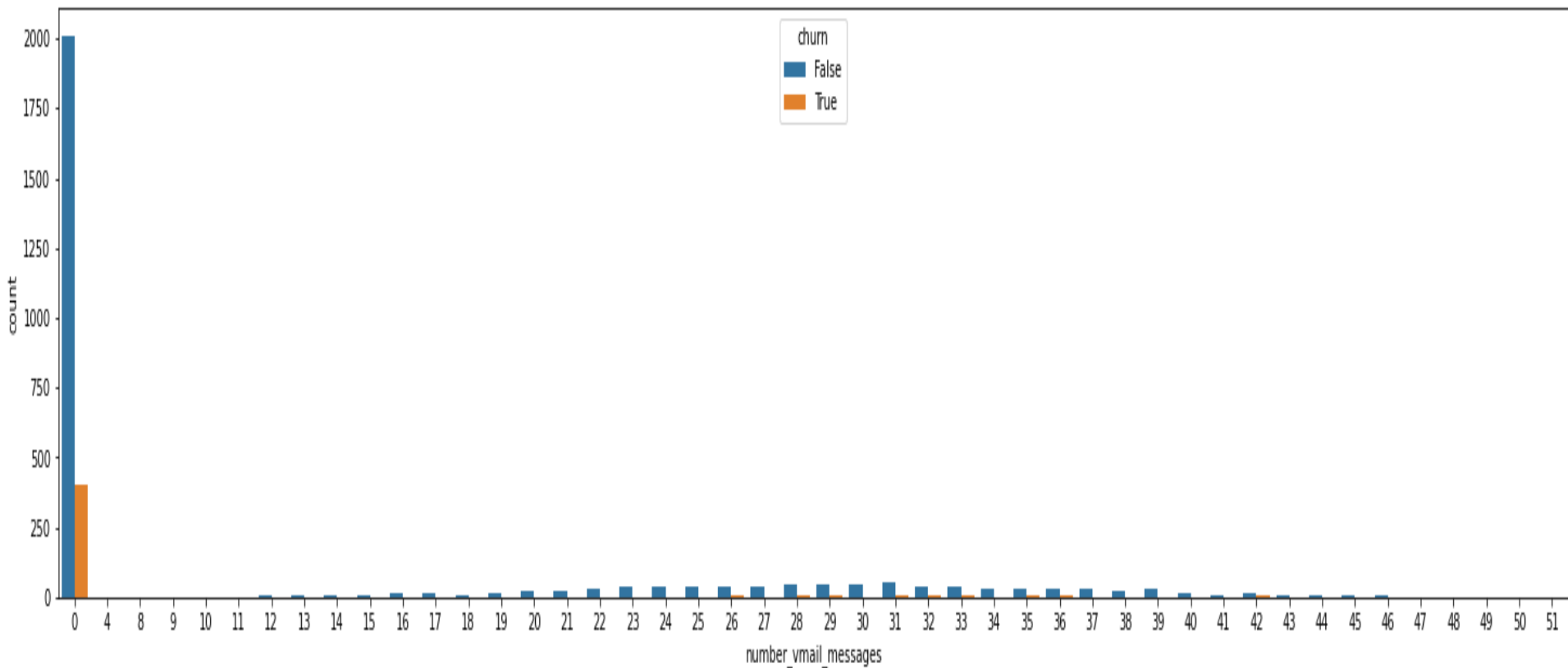
Churners based on States



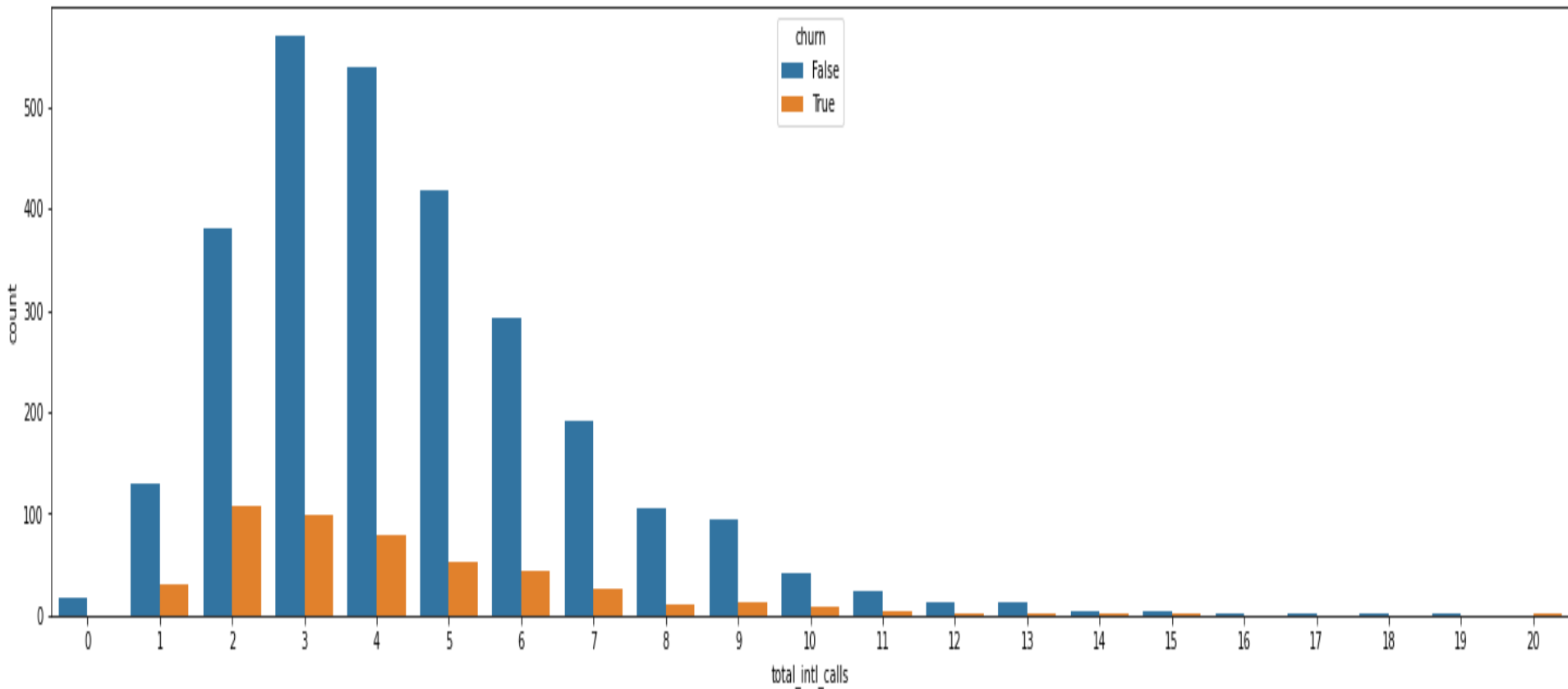
Churners based on Area Code



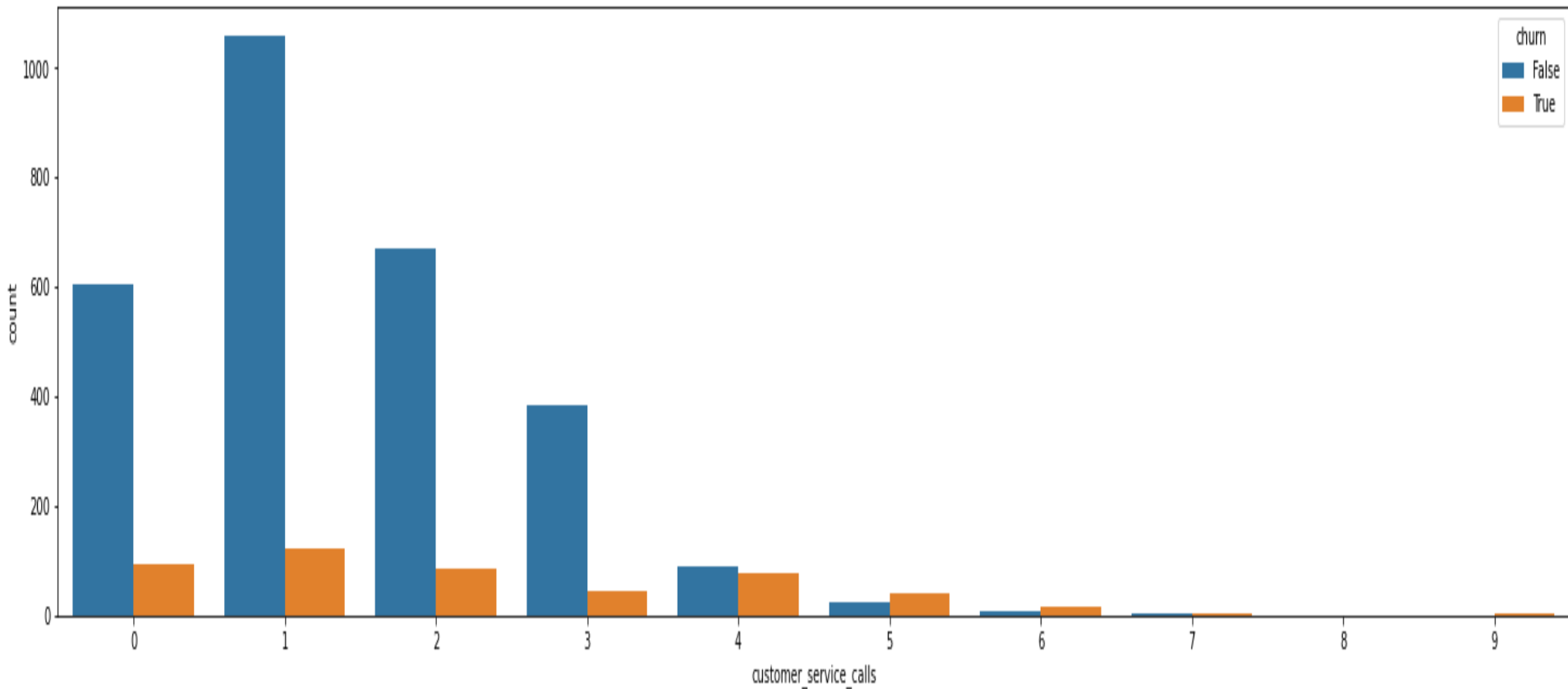
Churners based on Number of VoiceMails



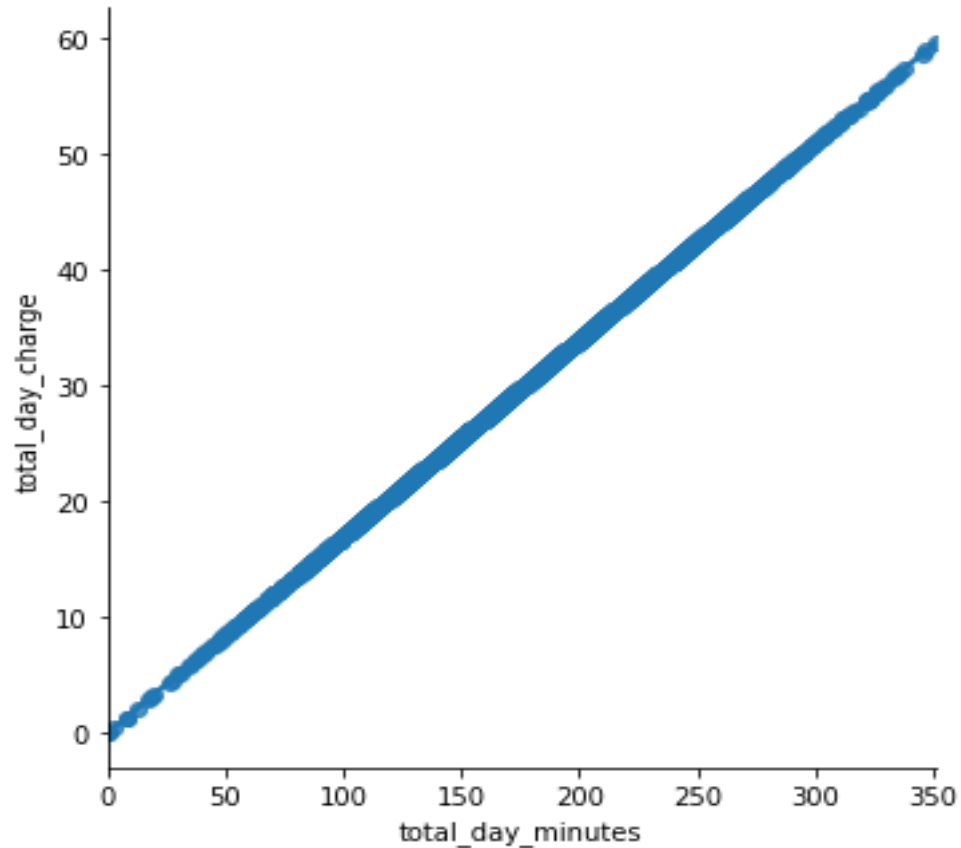
Churners based on International Calls



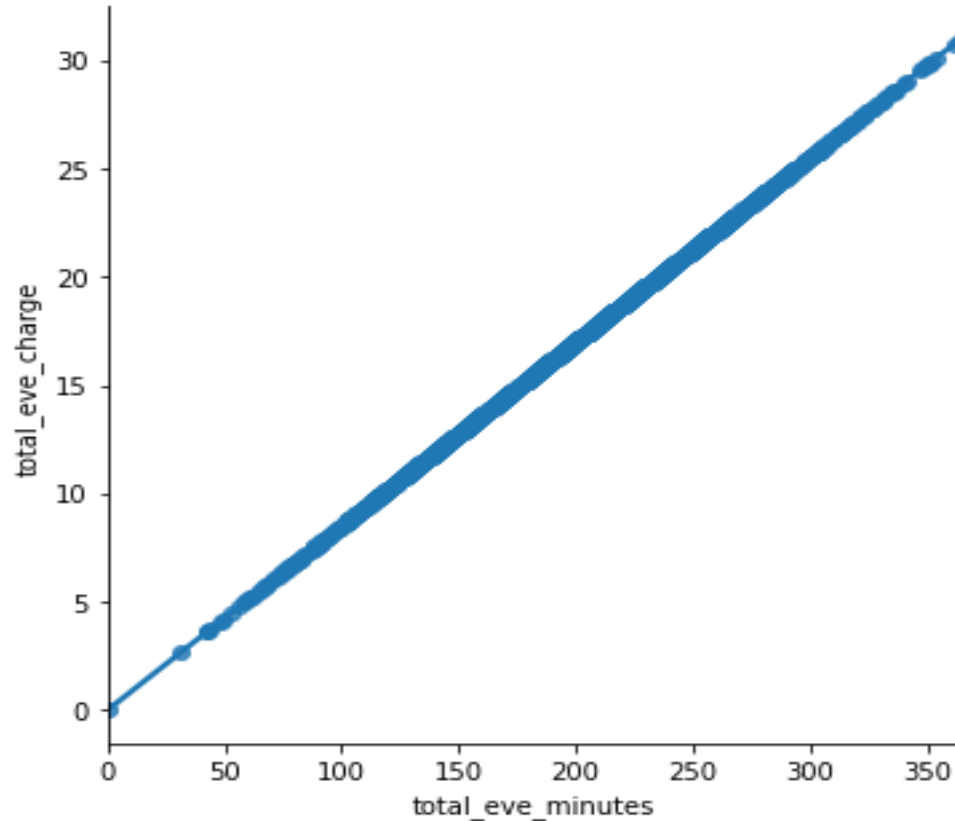
Churners based on Customer Service Calls



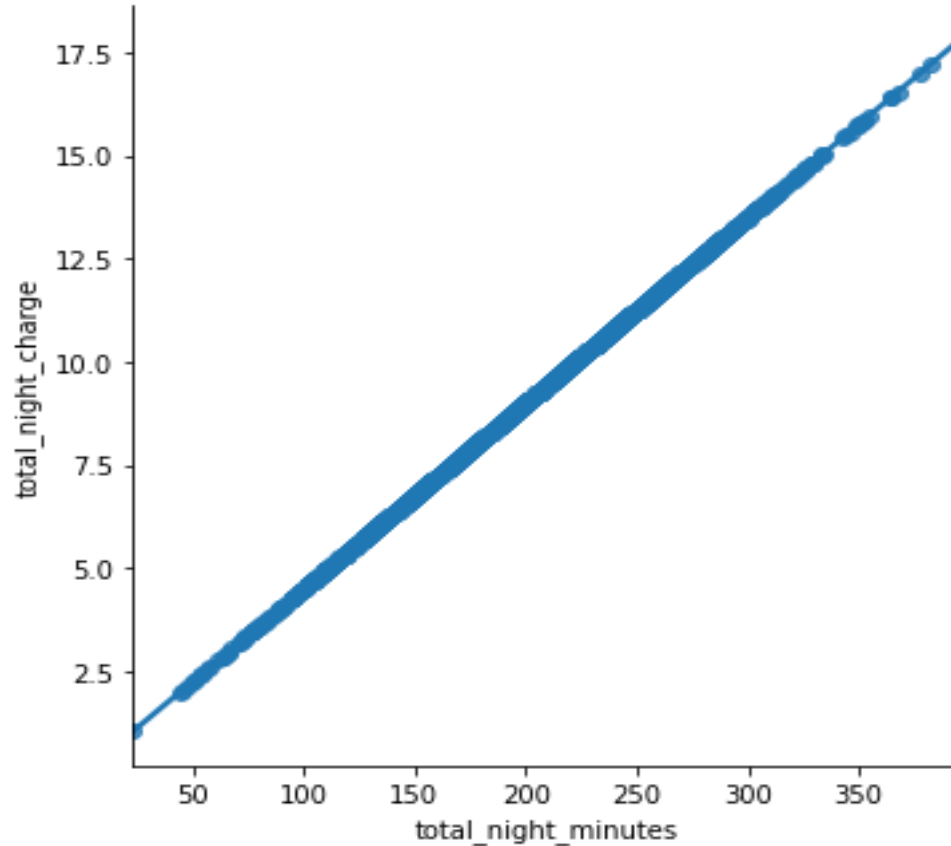
Total Day Minutes Vs Total Day Charge



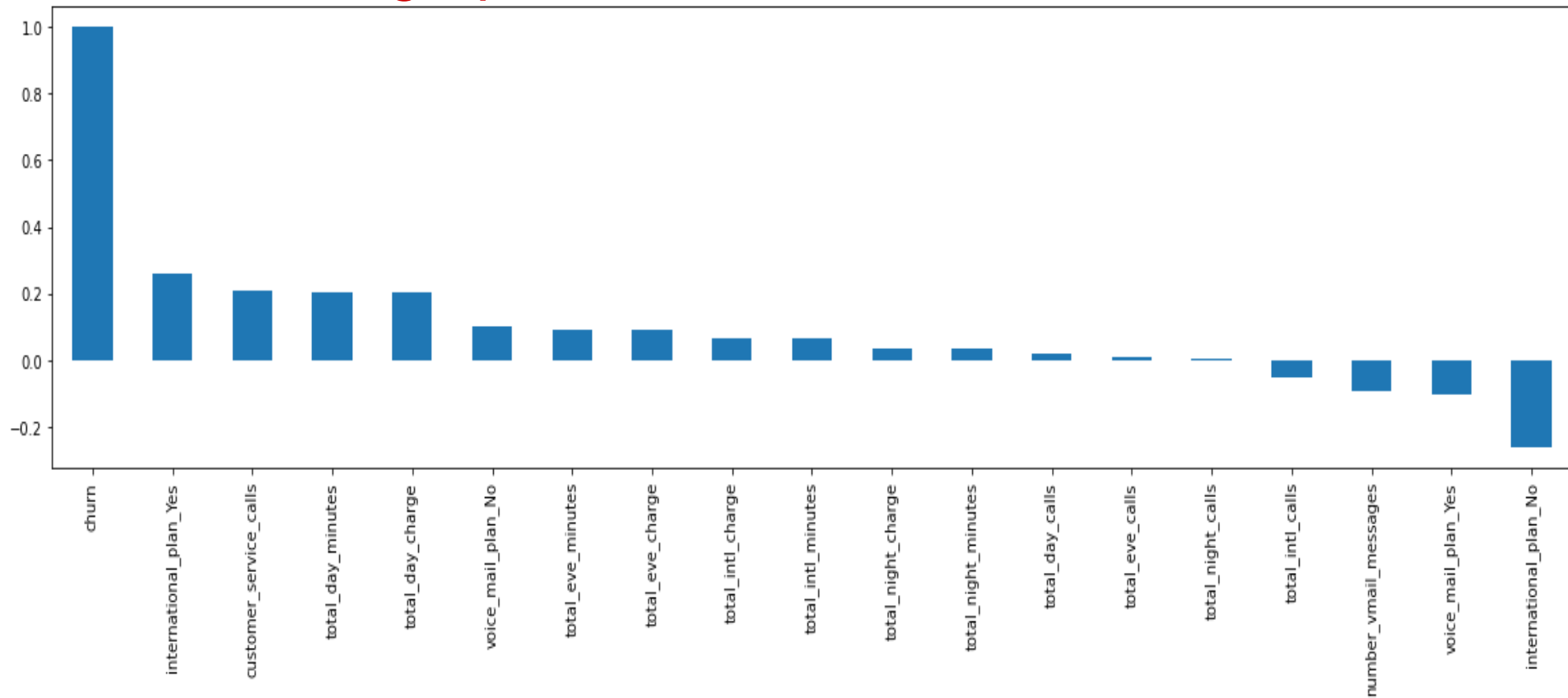
Total Evening Minutes vs Total Evening Charge



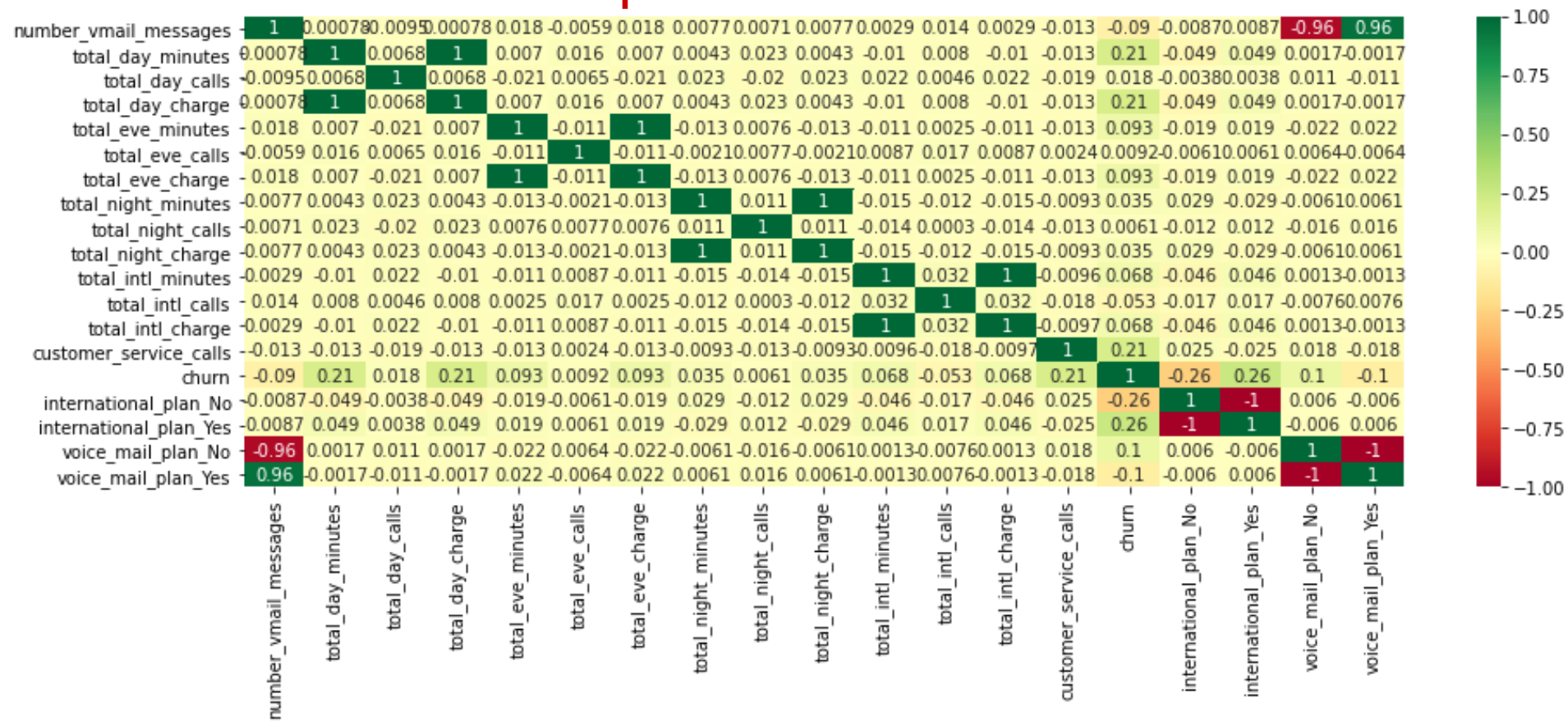
Total Night Minutes vs Total Night Charge



Correlation graph

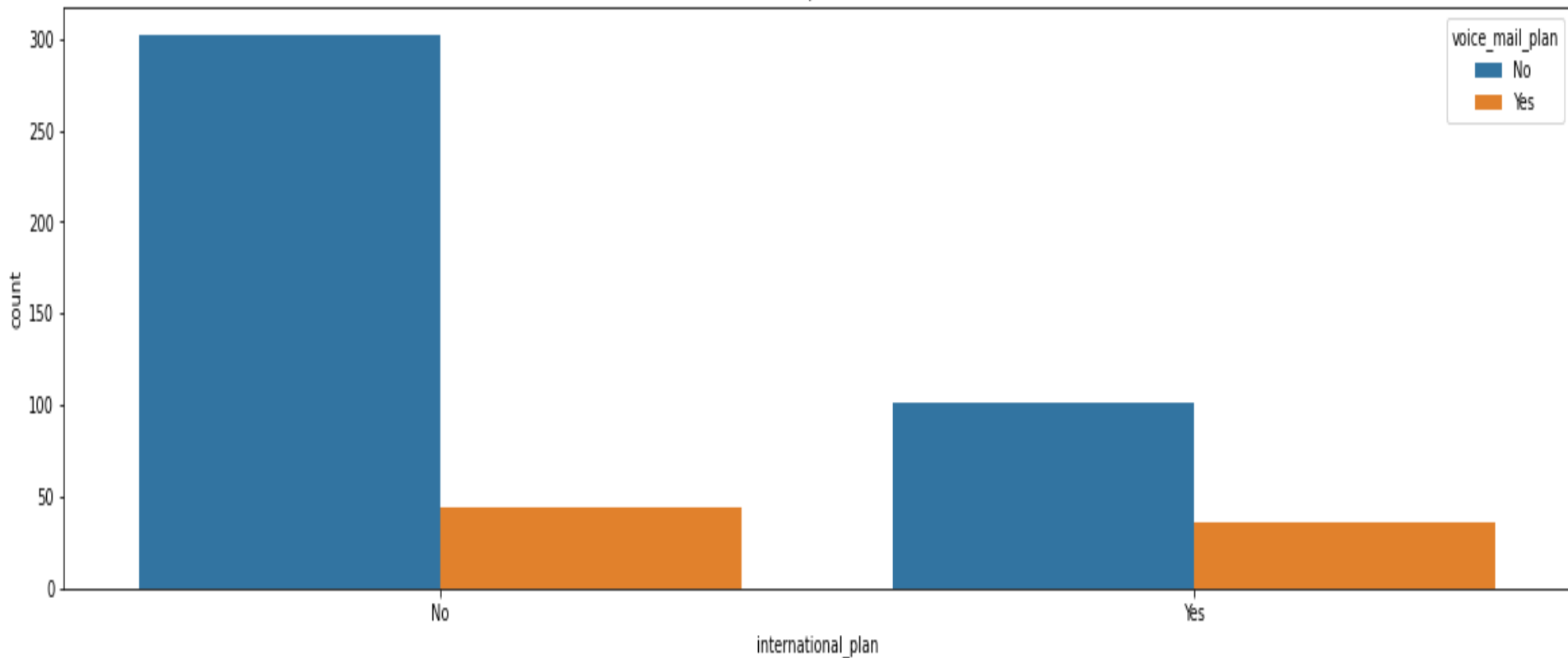


Correlation Heat Map

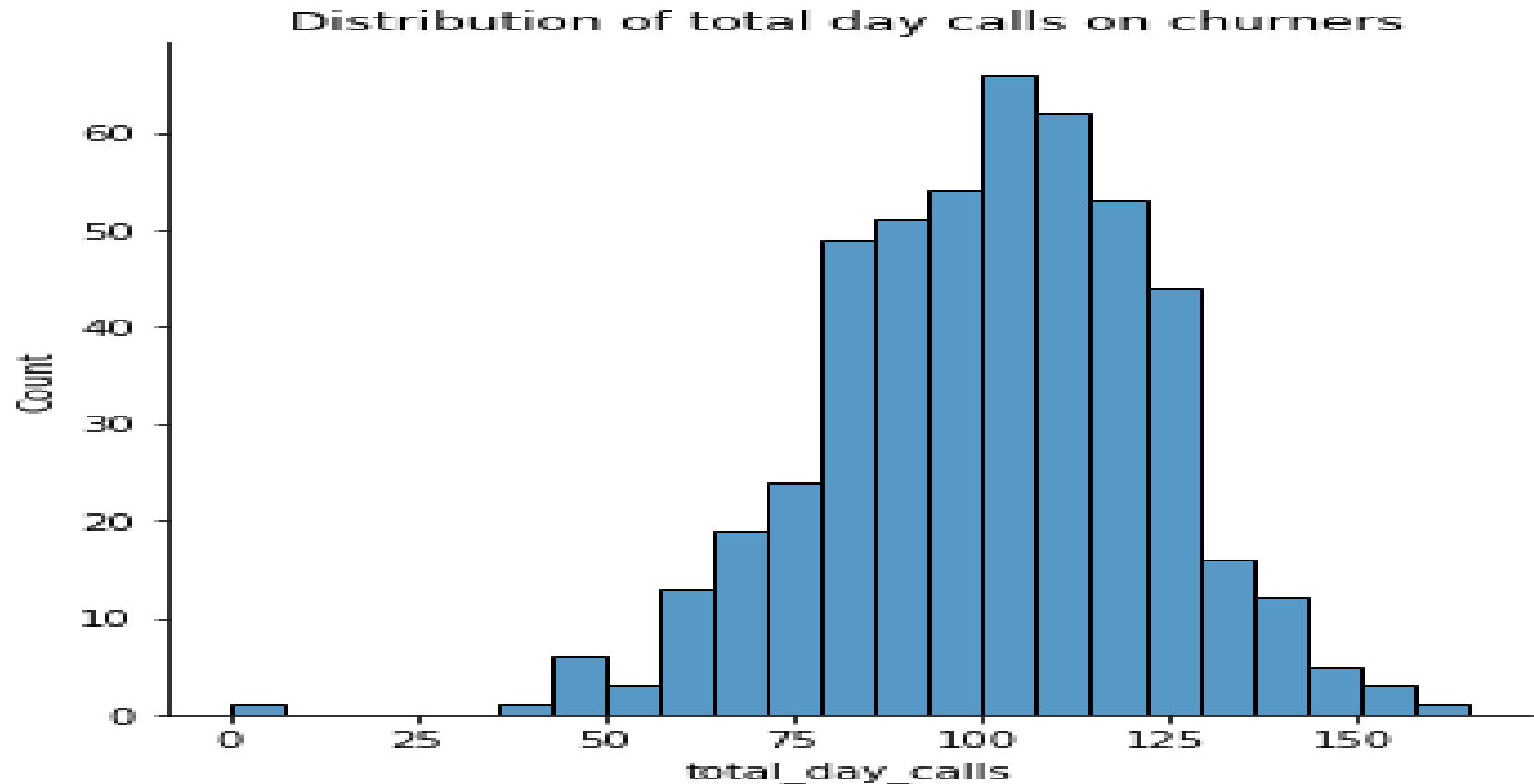


International Plan vs Voice Mail for Churners

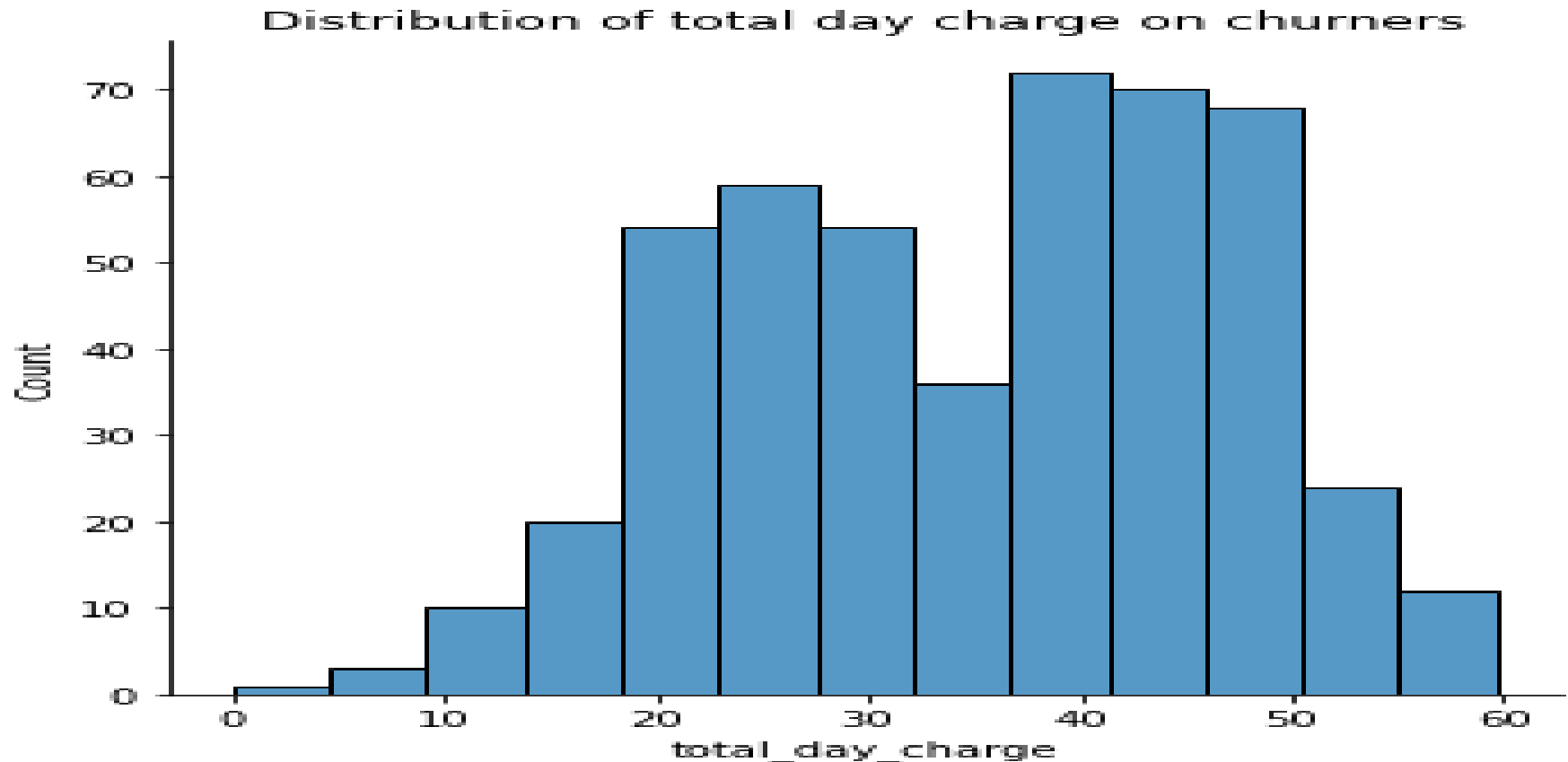
Distribution of voice mail plan for churned customers



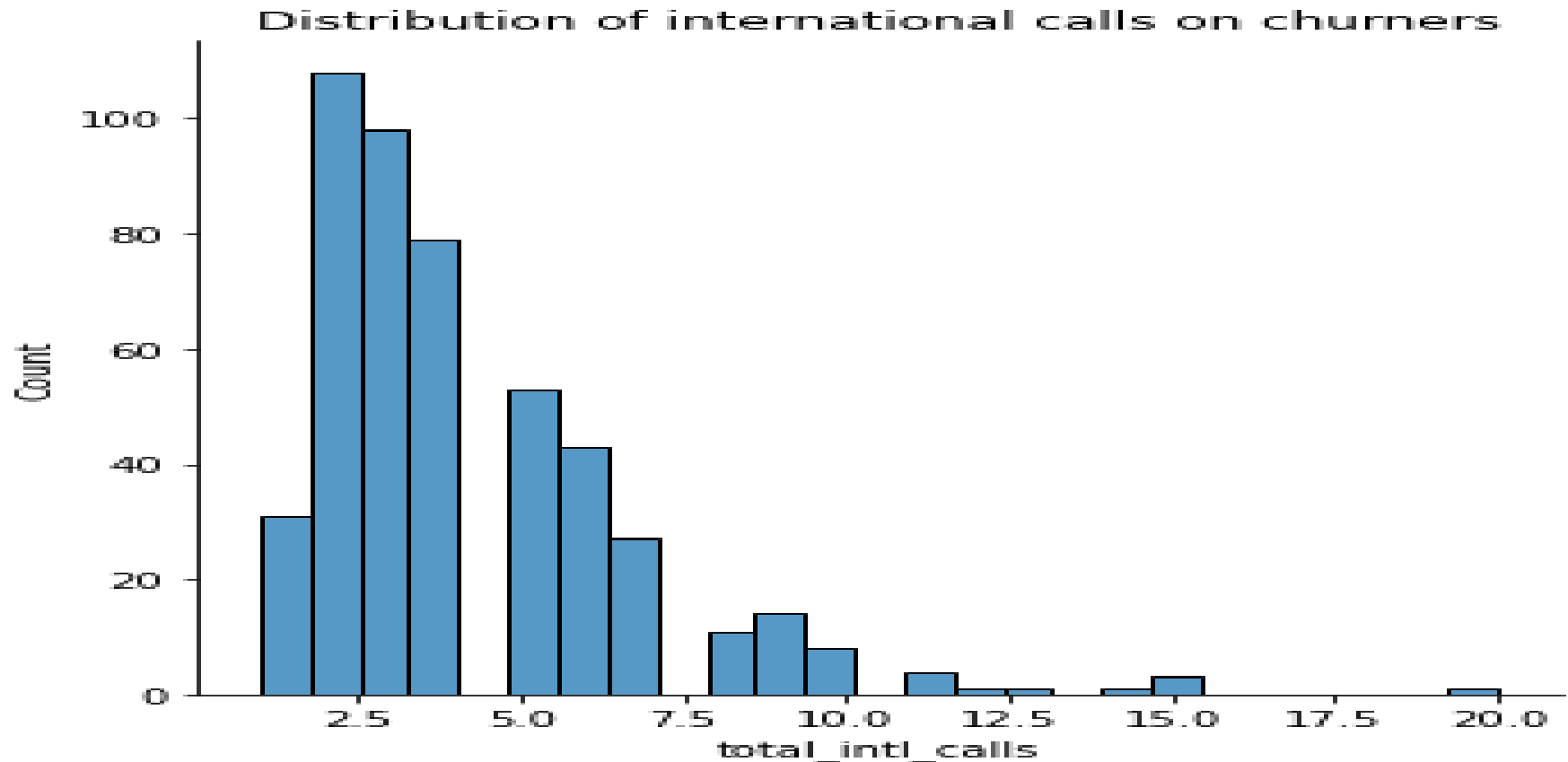
Distribution of Total Day Calls on Churners



Distribution of Total Day Charge on Churners

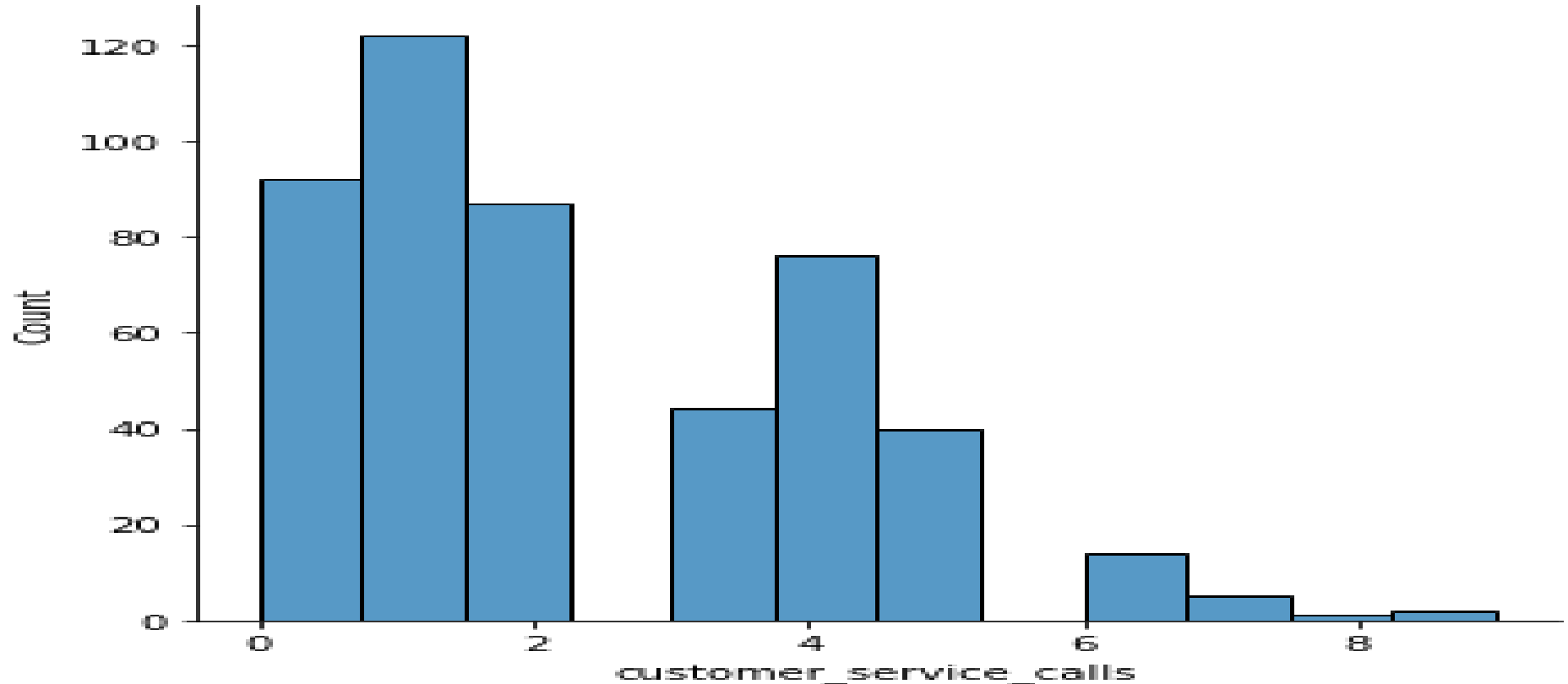


Distribution of International Calls on Churners



Distribution of Customer Service Calls on Churners

Distribution of customer service calls on churners



Conclusion

- The customers with No International plan and No Voicemail plan are the highest percentage churners.
- People who are making more calls are leaving.
- Highest number of churners are observed when Total Day Calls are in between 90 and 110
- More churners are observed when Total Day Charge is between 39 and 47
- More churners are observed when Total International Calls are around 3
- More churners are observed when Customer Service Calls are around 1

Suggestions for Improvement

- Give some free minutes of international call as offer to the Churners.
- Give some trial offer to use voice mail services. Also, some discount on regular voicemail plans w.r.t regular voicemail plans.
- Improve network quality
- Give Customers some attractive offers periodically w.r.t competitors
- Reduce call drops
- Giving customers an edge over other telecom sectors in the International Calls segment can help in reducing the number of churners
- Improved Customer Service Calls.

THANK YOU