CASE STUDY – TELECOM CHURN DATASET – JULY 2023 BATCH

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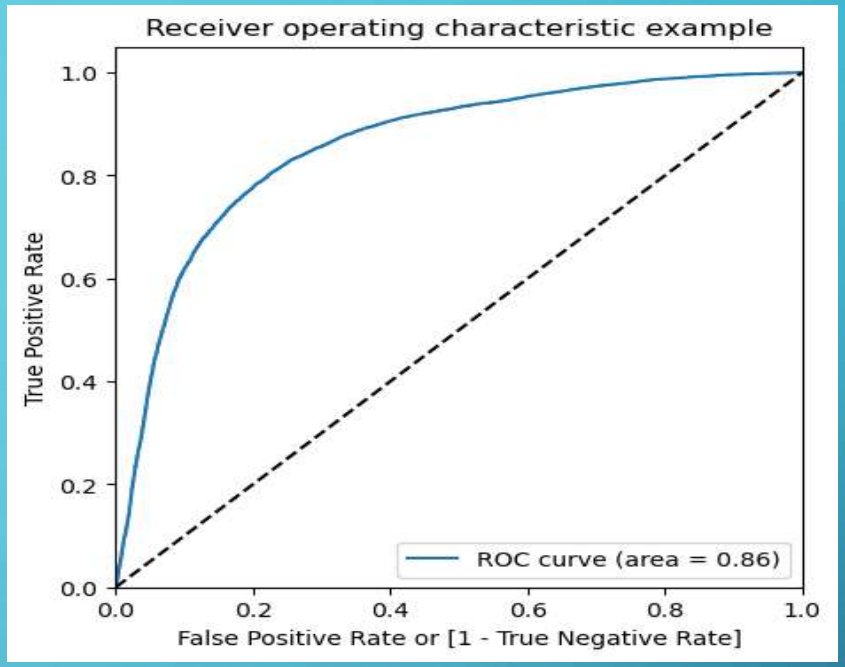
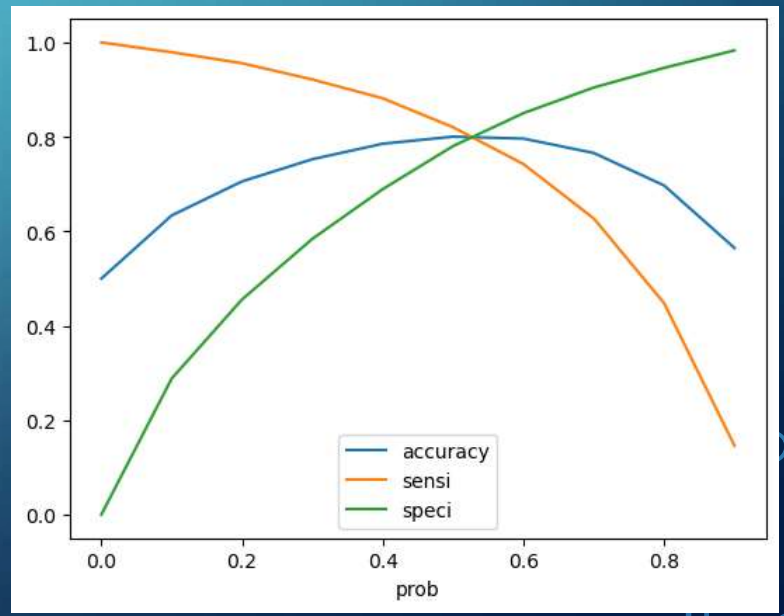
BUSINESS PROBLEM

- In the telecom industry, customers are able to choose from multiple service providers and actively switch from one operator to another. In this highly competitive market, the telecommunications industry experiences an average of 15-25% annual churn rate.
- Given the fact that it costs 5-10 times more to acquire a new customer than to retain an existing one, customer retention has now become even more important than customer acquisition.
- To reduce customer churn, telecom companies need to predict which customers are at high risk of churn.
- In this project, we will analyse customer-level data of a leading telecom firm, build predictive models to identify customers at high risk of churn and identify the main indicators of churn.

OVERALL ANALYSIS

- Understand the business problem and understand the data
- Perform the EDA – clean and prepare the data for modelling
- I have build total 3 models and finalize it.
- Plot the ROC Curve – AUC (Area under the curve is 86%)
- Optimal cut off point is = 0.52
- Precision and Recall tradeoff is = 0.52





TOP 10 PREDICTORS

1. loc_ic_mou_8
2. Total_mou_8
3. gd_phs_loc_ic_mou
4. monthly_3g_8
5. total_rech_num_8
6. monthly_2g_8
7. last_day_rch_amt_8
8. loc_og_mou_8
9. arpu_8
10. aon

FINAL MODEL RESULT SUMMARY

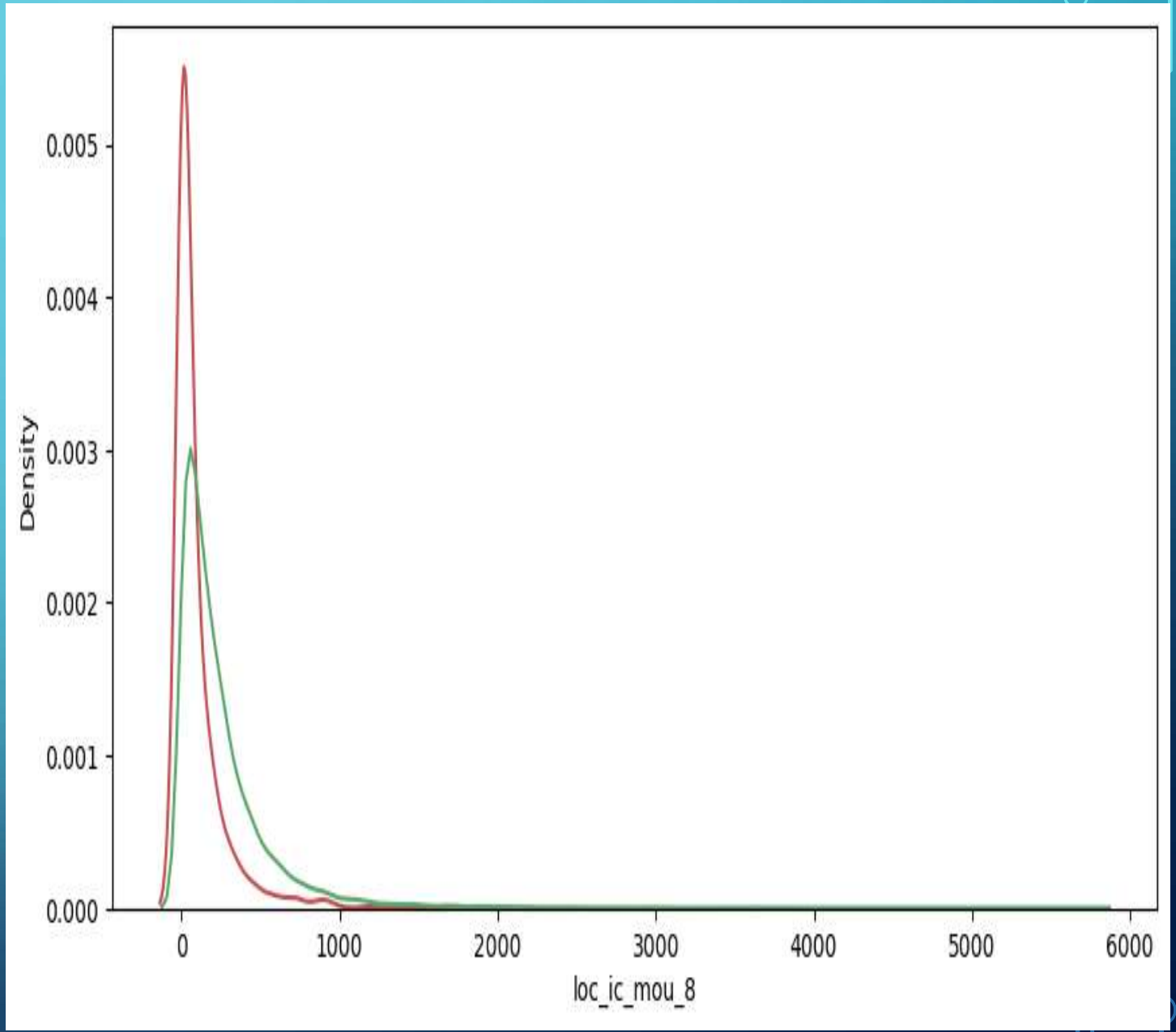
- FOR TRAIN SET
  - Accuracy = 78.84
  - Precision Score = 78.70
  - Recall Score = 79.90

- FOR TEST SET
  - Accuracy = 78.81
  - Precision Score = 78.79
  - Recall Score = 78.94

PLOT THE PREDICTORS FOR CHURN AND NON CHURN CUSTOMERS

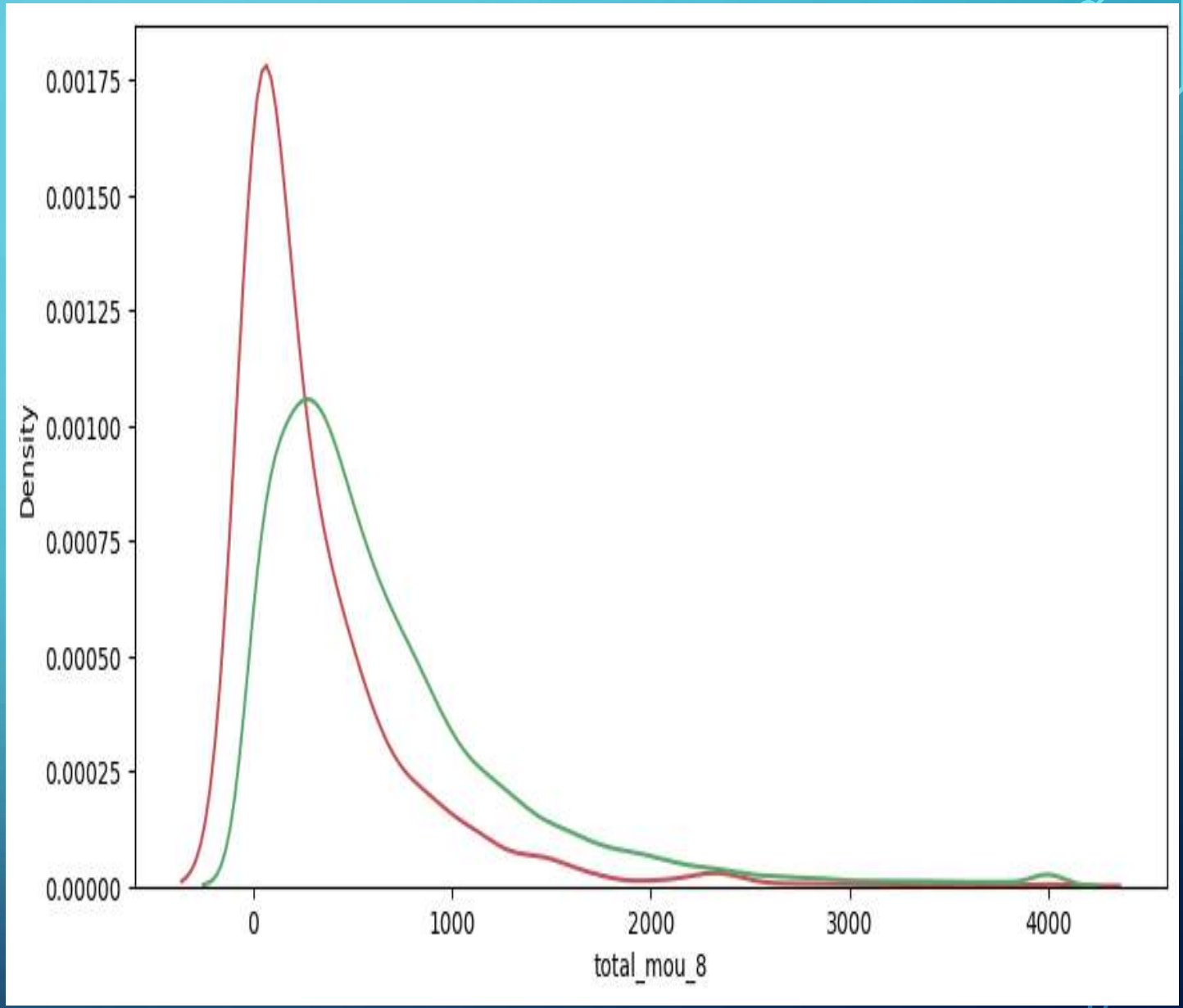
PLOTTING FOR LOCAL INCOMING CALLS

As we can see here in the month of august (action phase) the usage is very low and churn rate is very high than the non churn customers.



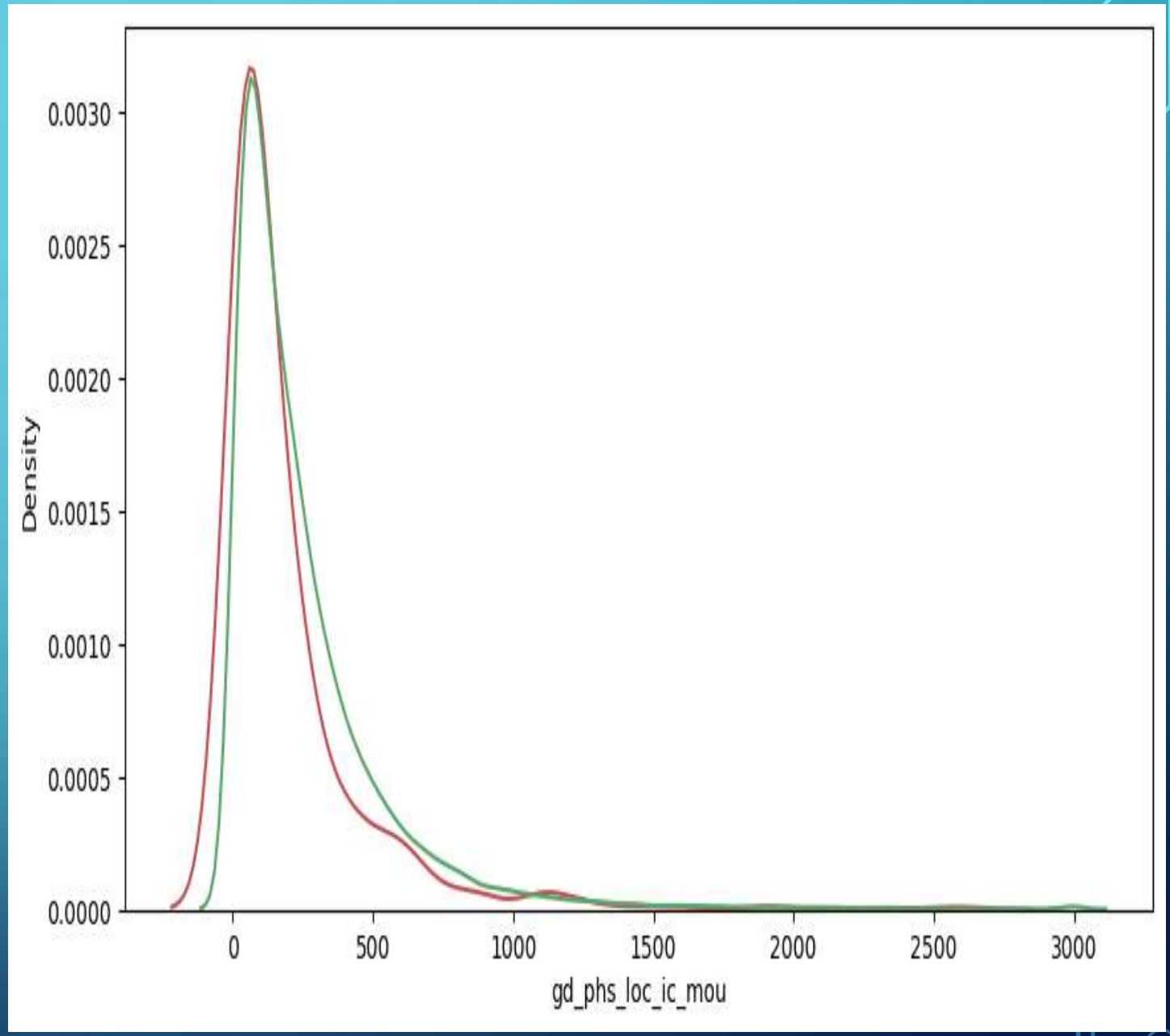
PLOTTING FOR MONTH OF AUGUST

In Month 8 also we can see that the density of churn customers are high at lower side than non-churn customers



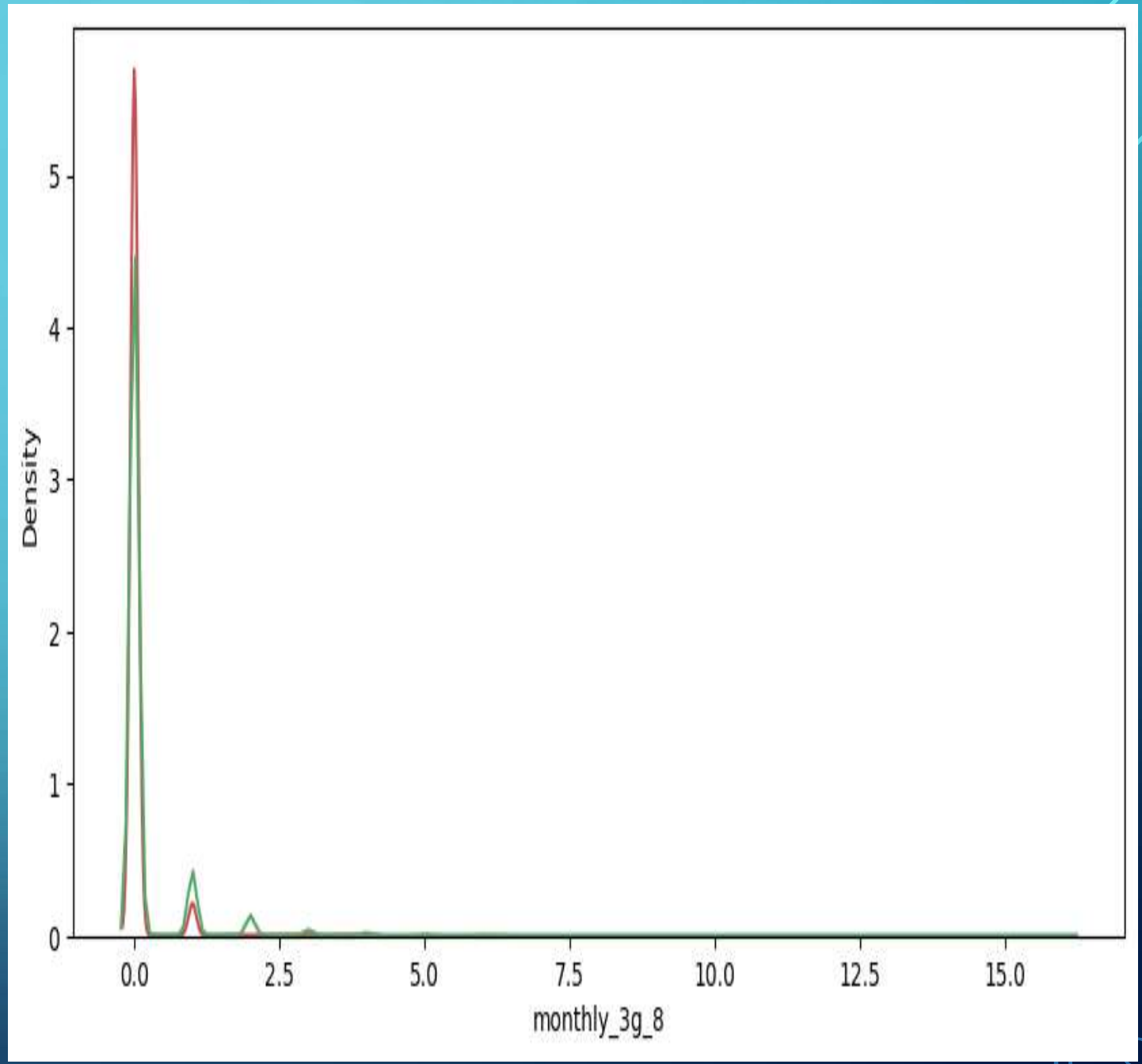
PLOTTING FOR INCOMING CALLS FOR GOOD MONTH PHASE

As we can see the churn and non churn is almost same at lower side during good phase of the months



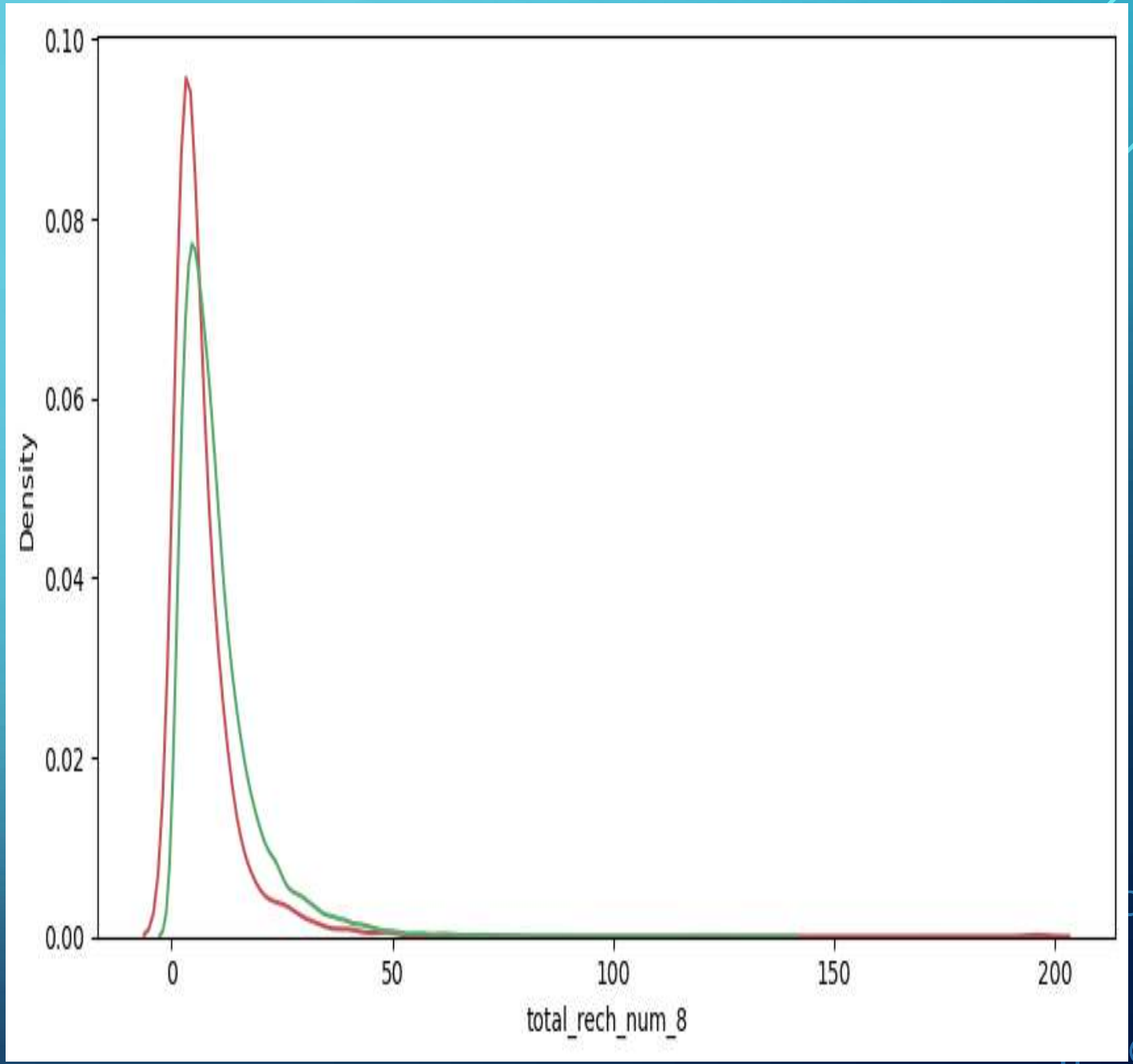
PLOTTING FOR 3G NETWORK USE

The number of monthly 3g data for August for the churn customers are very much populated aroud 0, whereas of non churn customers it spreaded accross various numbers.



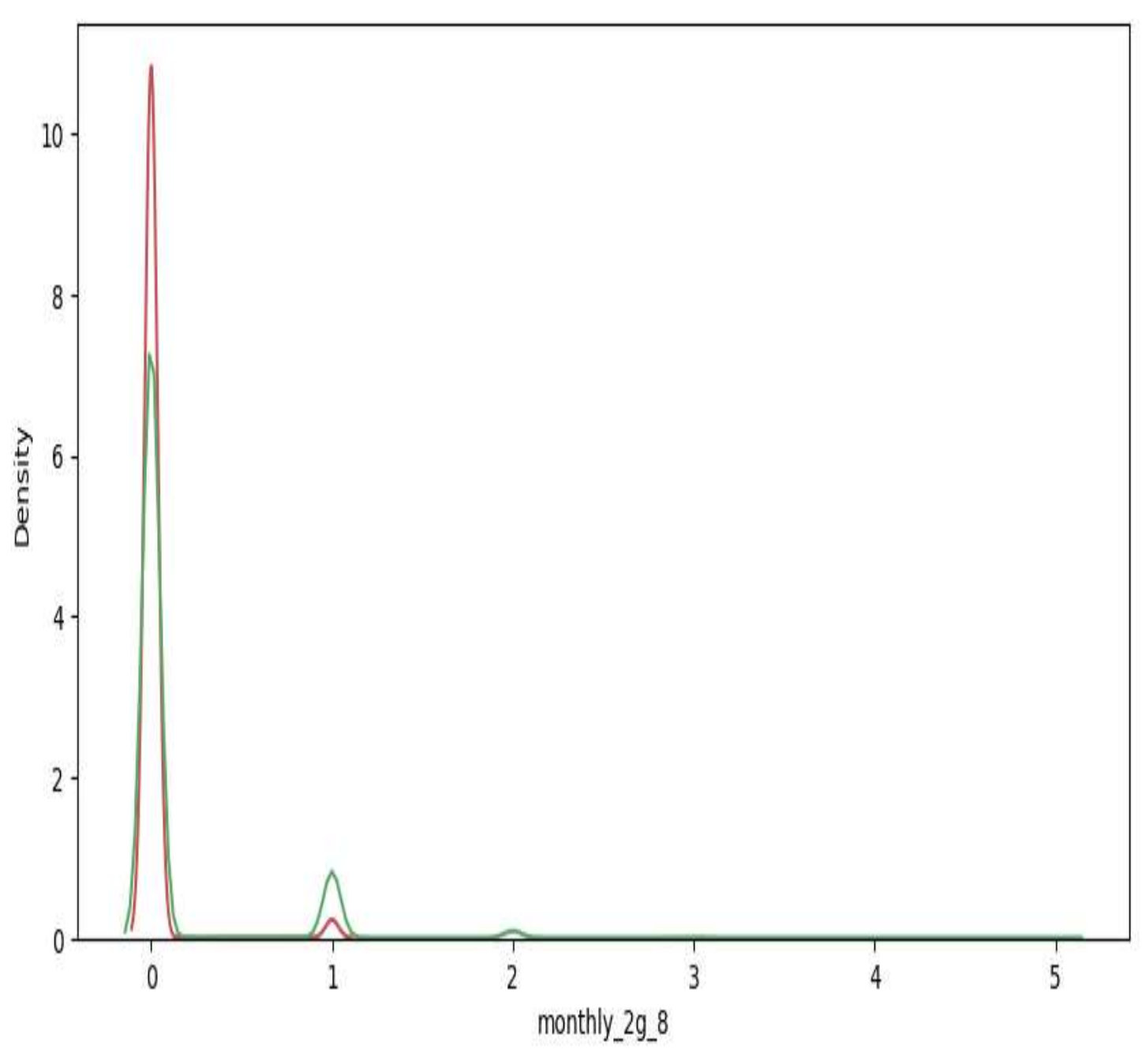
PLOTTING FOR TOTAL RECH NUM 8

As we can see that the lesser the amount of the recharge the churn rate is higher than non churn rate



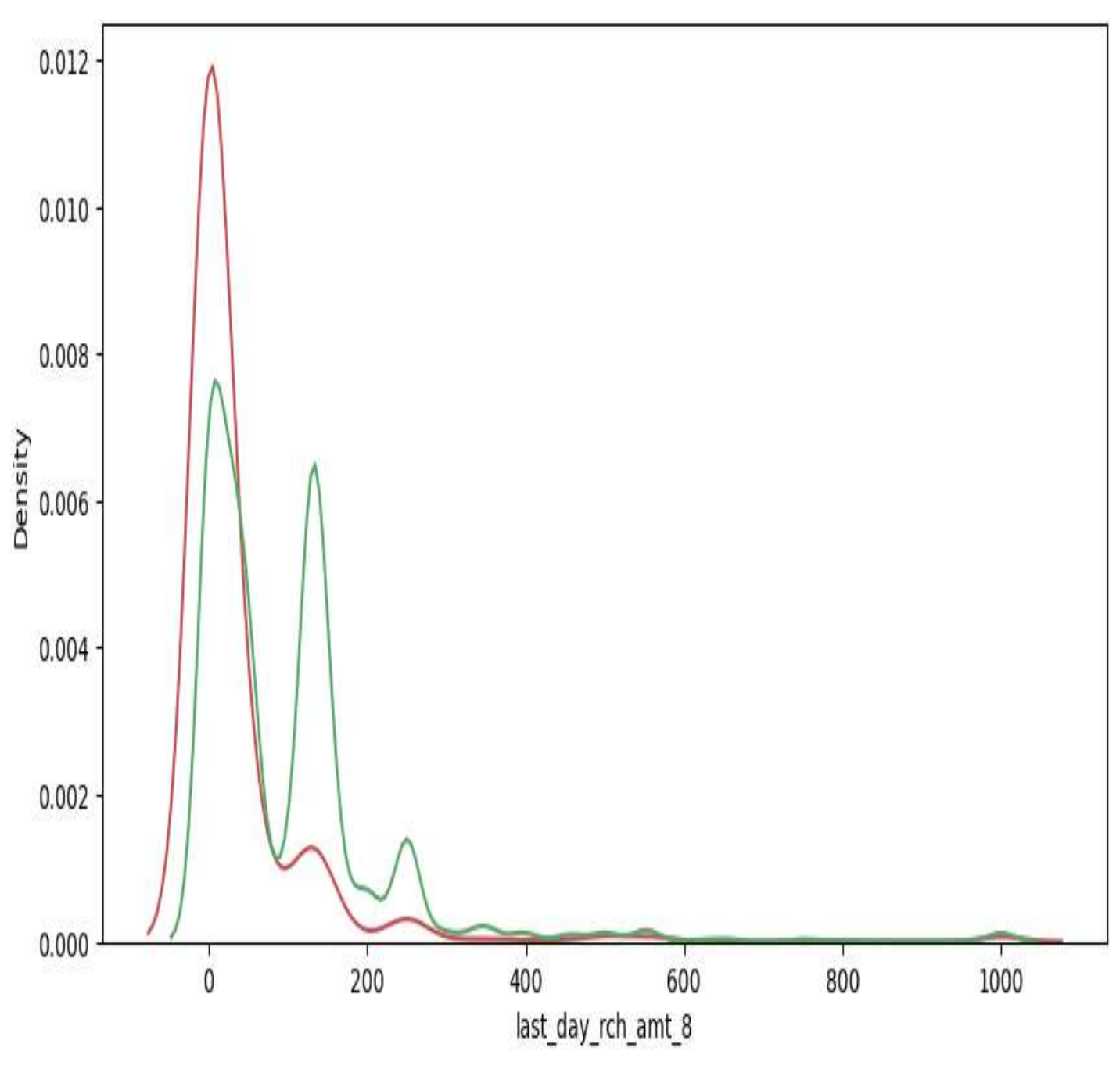
PLOTTING FOR 2G USAGE

As per the density of churn rate is accommodate at 0 is very high than non churn. non churn peoples are not prefer to use 2g network.



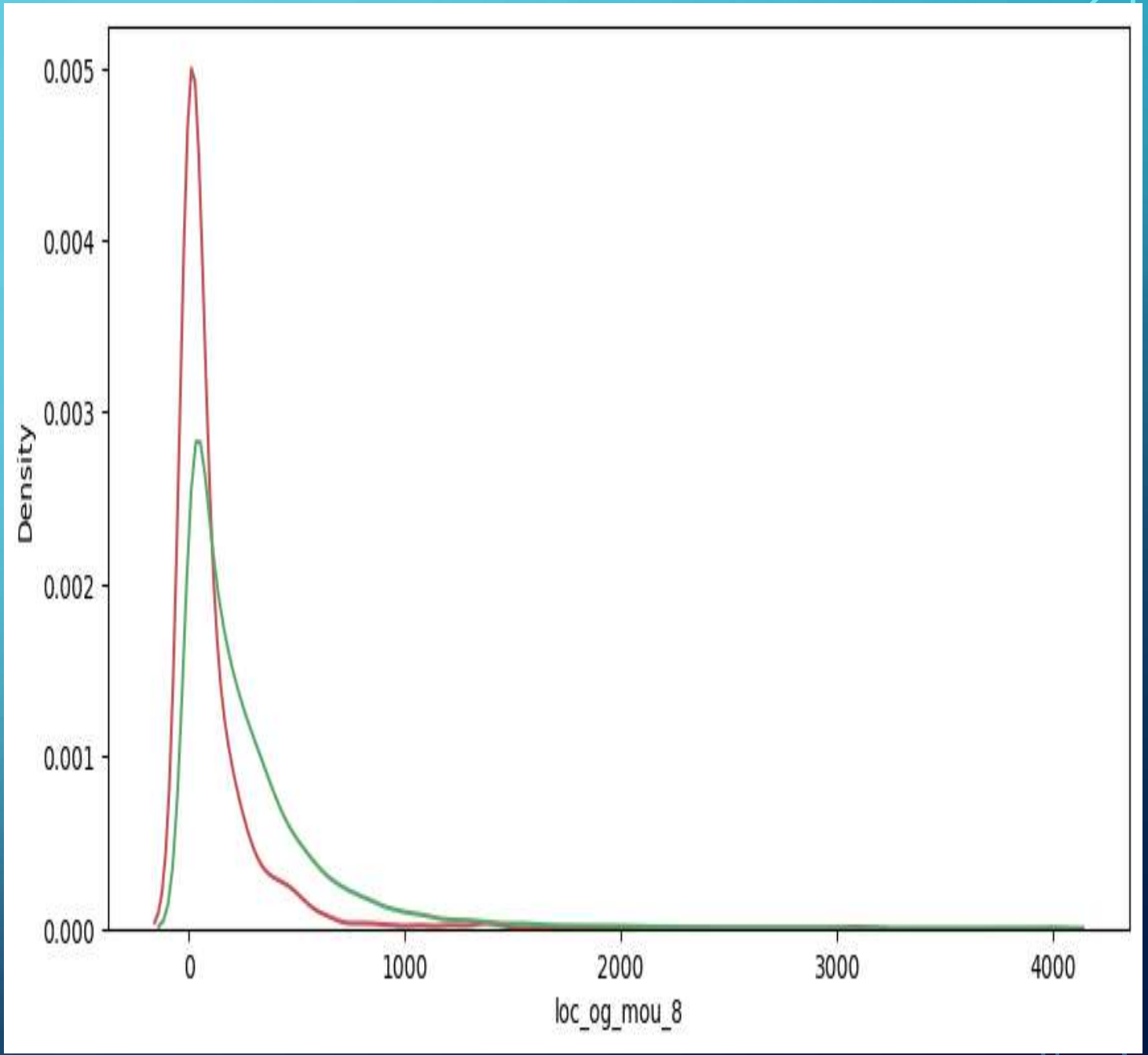
PLOTTING FOR LAST DAY RCH AMT 8 FOR CHURN AND NON-CHURN CUSTOMERS

As we see the churn rate is increasing below the recharge amount of 200



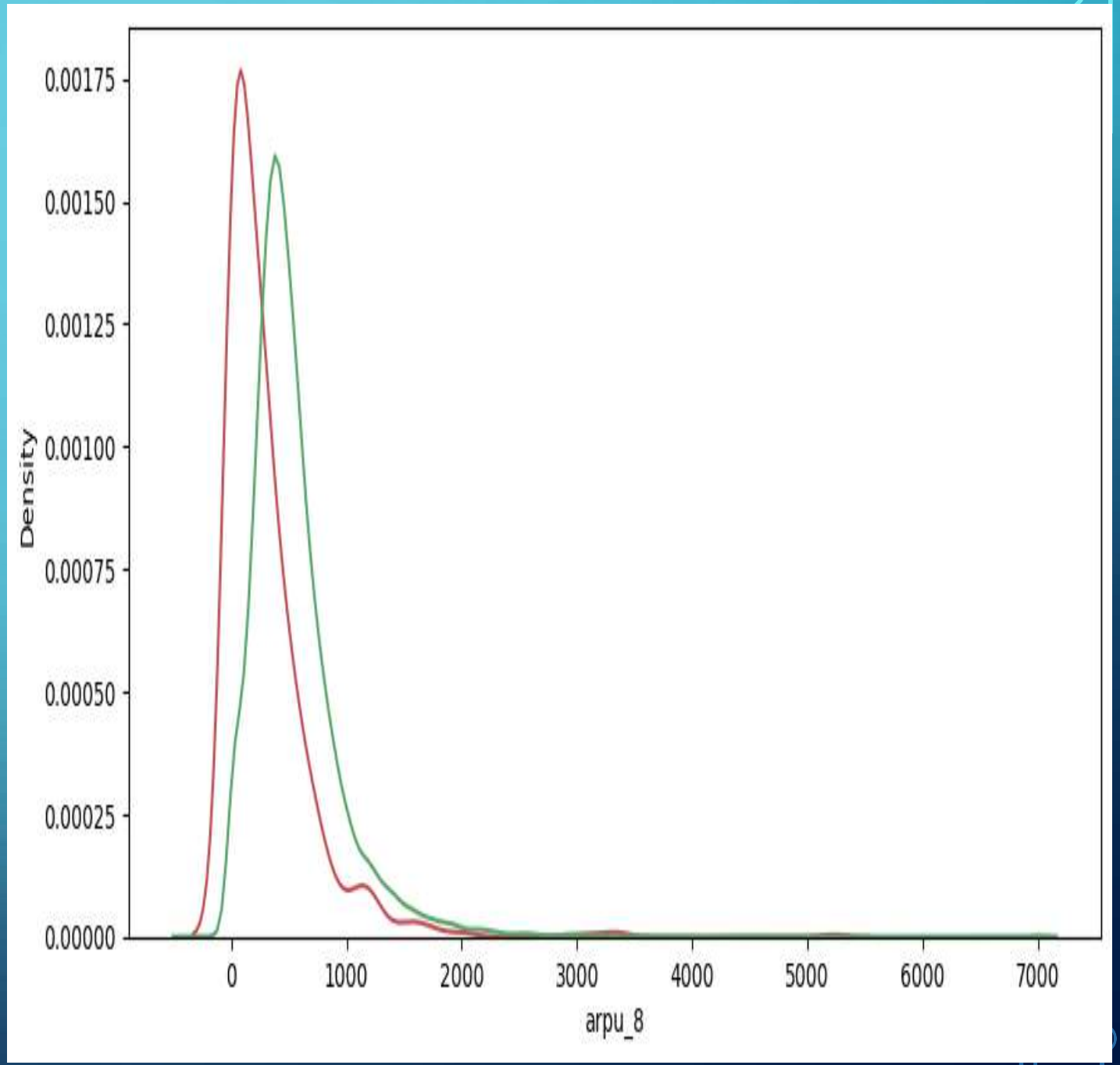
PLOTTING FOR LOC OG MOU 8

outgoing is highly dense almost at 0 in month of august for churned customers but non customers are using the services



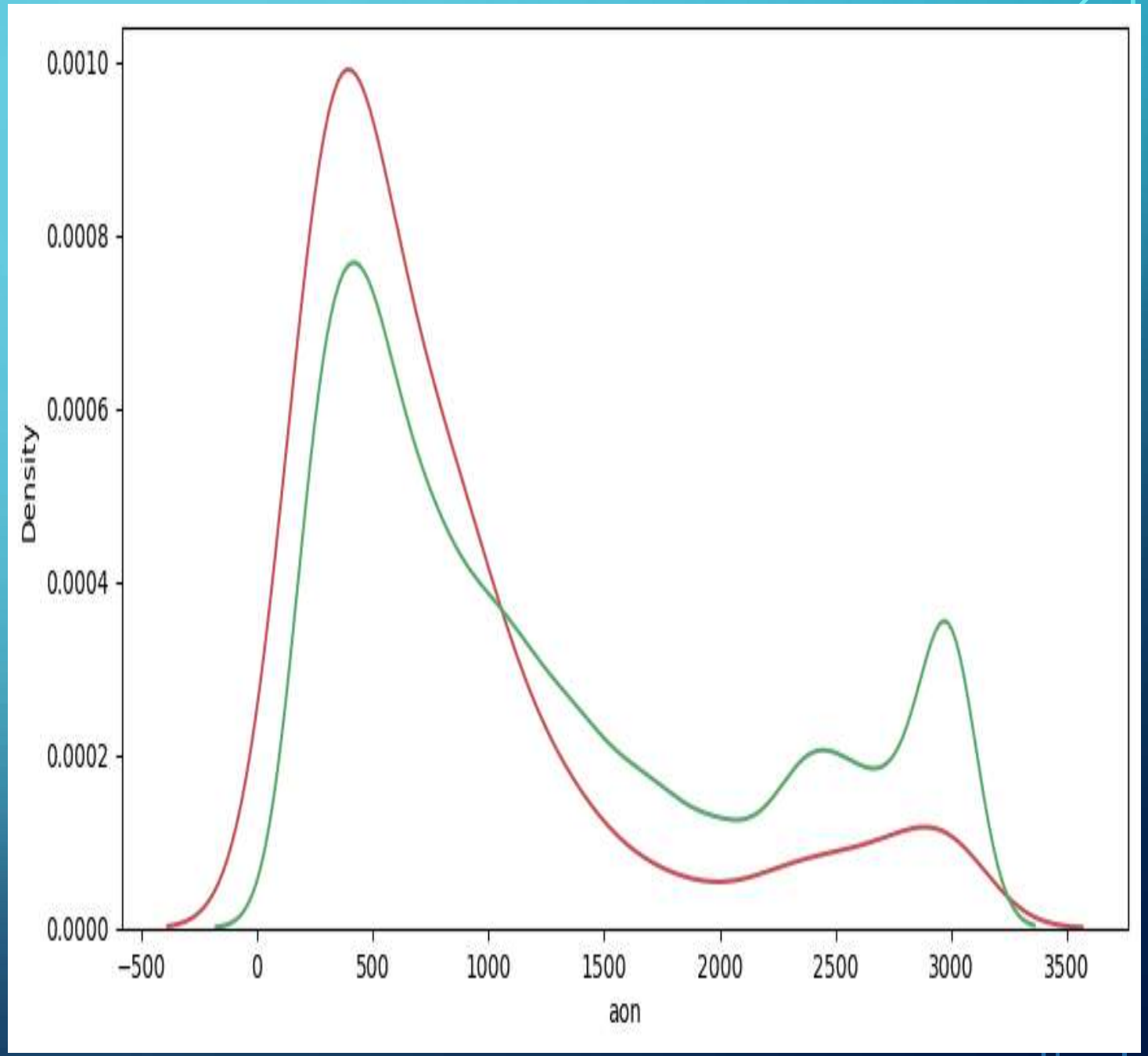
PLOTTING FOR ARPU 8

Higher the revenue per user lesser is the churn rate and if lesser is the revenue per user higher is the churn rate



PLOTTING FOR AGE ON NETWORK

The Age of Network - if more the number of days the user is using the network of same operator the churn rate is lesser as compare the lesser days network usage of same operator. in simple words older the customer there is higher chance of customer will not churn



BUSINESS RECOMMENDATIONS

- If total revenue from the customer is greater than 368.5 then it is high value customer.
- If the average revenue generated is below 200 then there is high chance of churn.
- Churn rate is high at good phase rather than action phase. If the customer is not a high value customer and using higher services.
- The customers were using VBC and generating high revenue that will churn.
- The users which are doing high amount of recharge and utilize less amount of services than other that users churn rate is higher in good phase than action phase.
- If recharge amount is good and incoming calls are less then also customer prefer to churn in good phase than action phase.