

Telecom Churn Case Study



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Problem Statement

- The telecommunications industry experiences an average of 15-25% annual churn rate
- Customer retention has now become even more important than customer acquisition
- For many incumbent operators, retaining high profitable customers is the number one business goal.
- To reduce customer churn, telecom companies need to predict which customers are at high risk of churn.
- Analyse customer-level data of a churning telecom firm, build predictive models to identify customers at high risk of churn and identify the main indicators of churn.

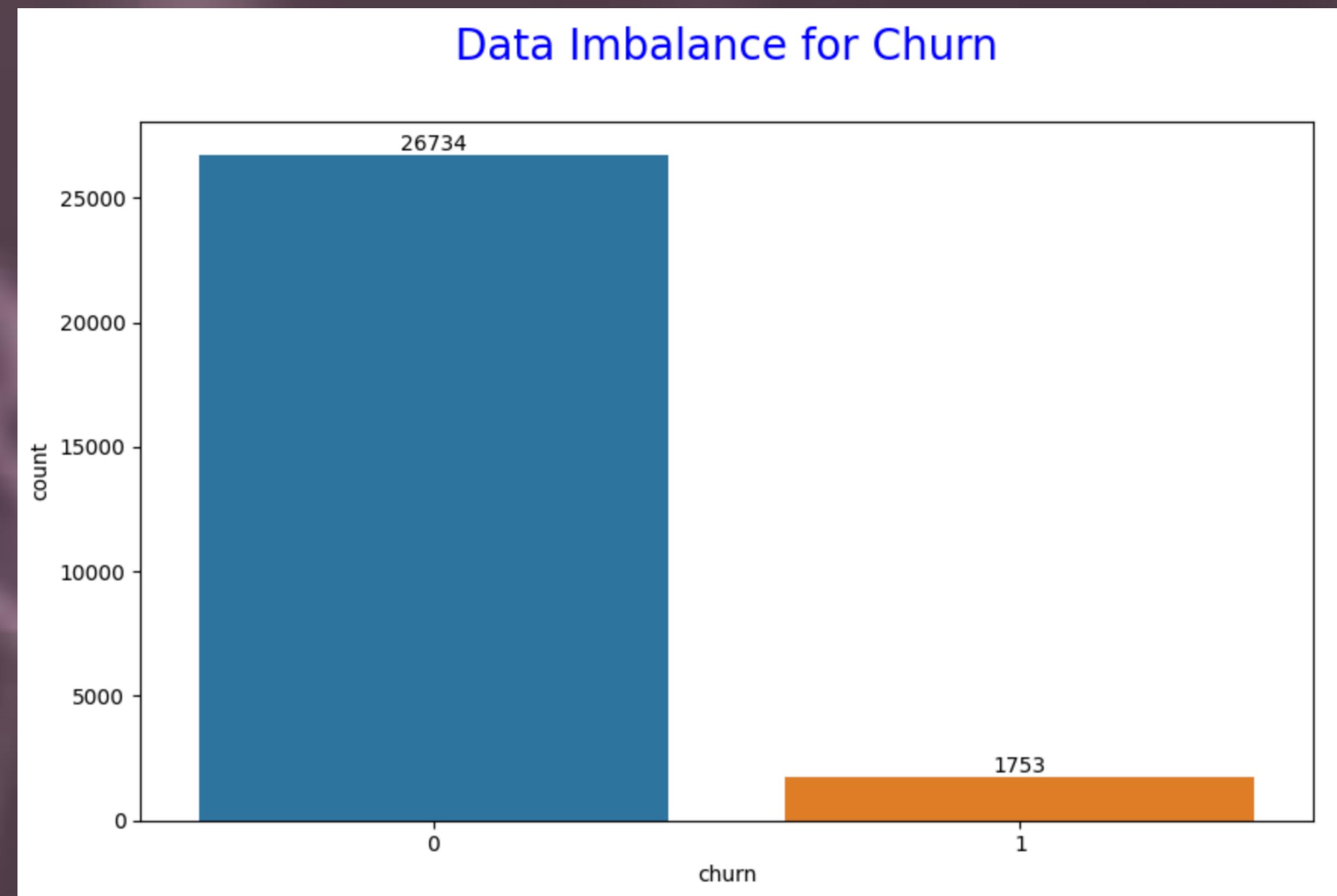


Objective

- To build Classification model to select the churns that are most likely to convert into paying customers
- Model to be flexible in order to adjust to if the company's requirement changes in the future
- The business objective is to predict the churn in the last (i.e. the ninth) month using the data (features) from the first three months.



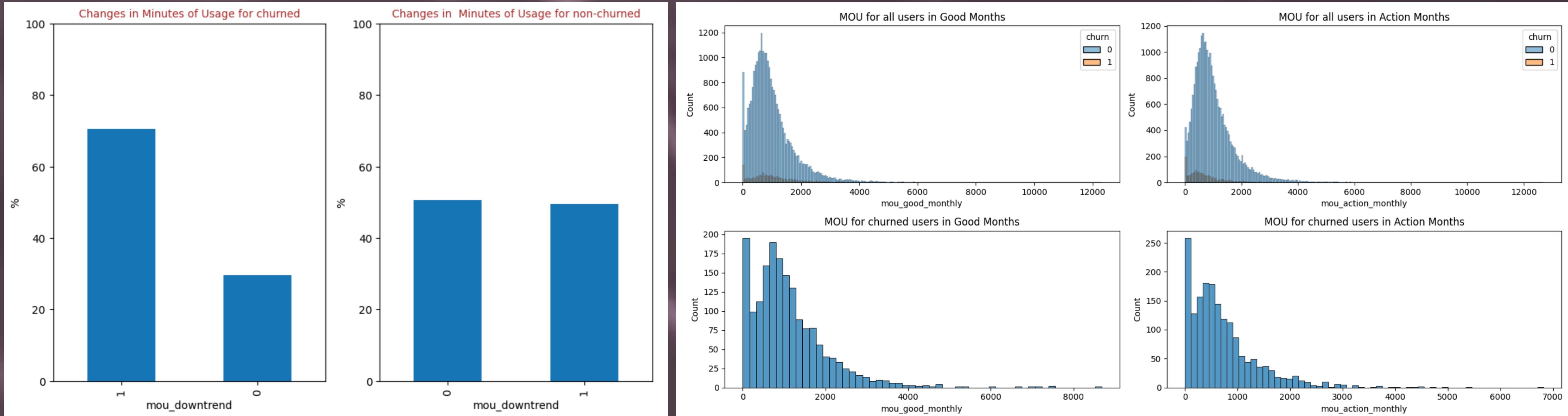
Data Imbalance Handling



- Data Imbalance Observed
- Only 8% churn cases found
- SMOTE was used to handle imbalance

Exploratory Data Analysis

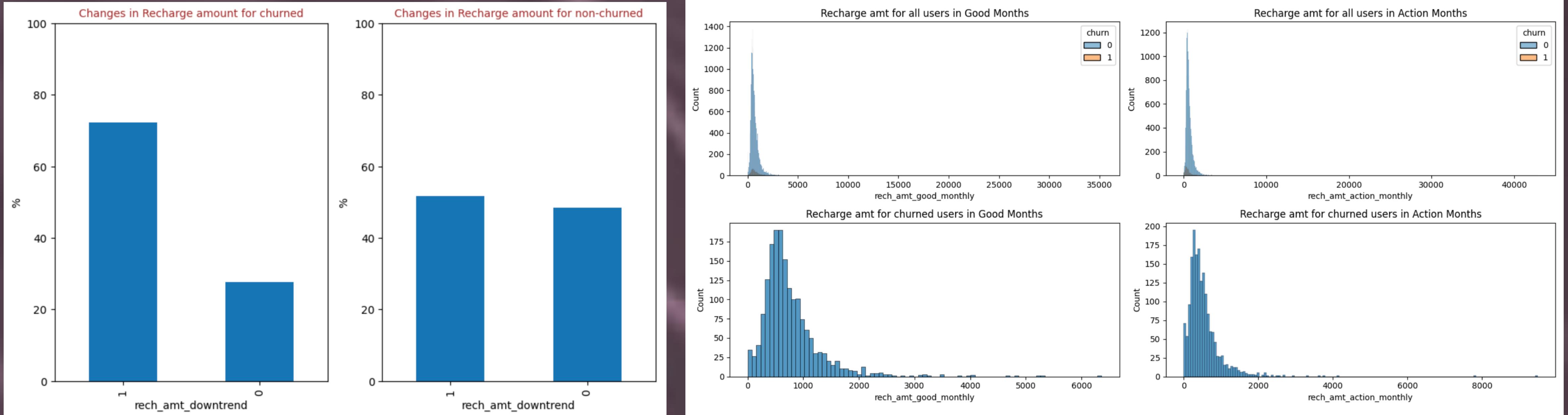
Minutes of Usage



- For churned customers minutes of usage is significantly reduced, those with no usage can be tagged

Exploratory Data Analysis

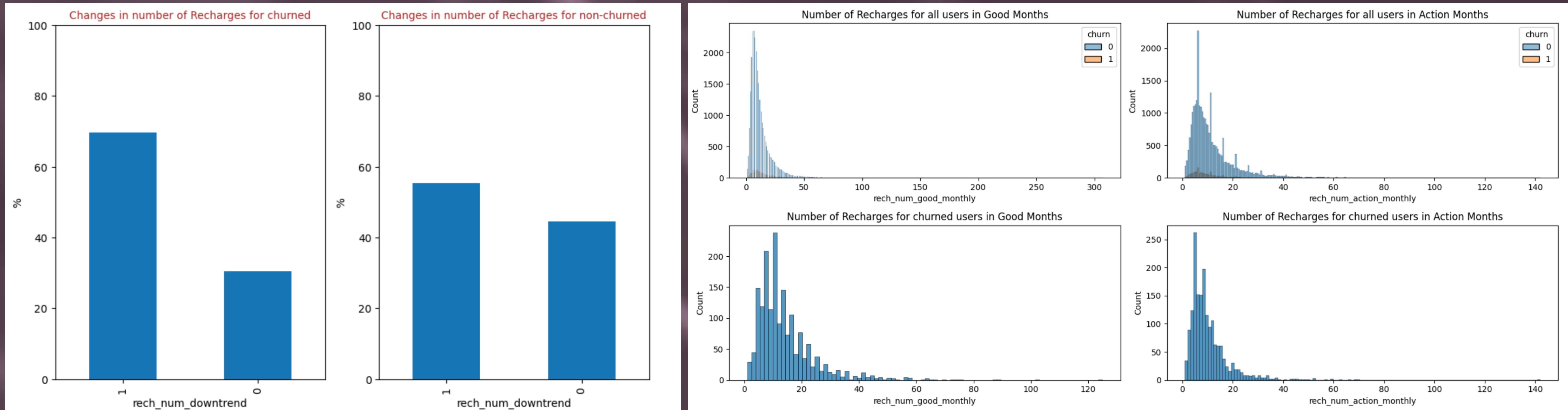
Recharge Amount



- For most of the churned customers recharges are smaller than 1000 during action phase

Exploratory Data Analysis

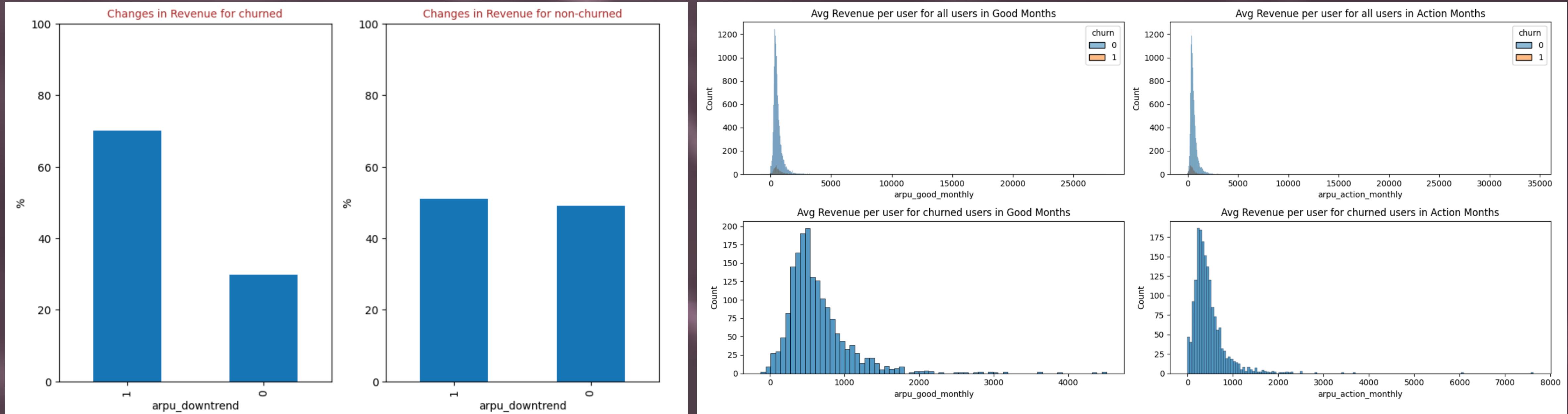
Number of Recharges



- For most of the churned customers number of recharges are less than 15 during action phase

Exploratory Data Analysis

Average Revenue per user



- For churned customers there is significant reduction in revenue during action phase

Model Parameters

The following features are part of top 10 Logistic Regression model parameters

- Minutes of Usage mainly related to Month 8
- Data Usage in MB mainly for month 8
- Recharge Amount for Month 8
- Number of Recharges for month 8

| | |
|--------------------|--------------|
| total_ic_mou_8 | --> 1.05535 |
| monthly_3g_8 | --> 0.702145 |
| loc_og_t2t_mou_8 | --> 0.633161 |
| last_day_rch_amt_8 | --> 0.619815 |
| sep_vbc_3g | --> 0.548365 |
| roam_og_mou_8 | --> 0.535675 |
| total_rech_num_8 | --> 0.531826 |
| monthly_2g_8 | --> 0.518164 |
| vol_3g_mb_6 | --> 0.517060 |
| total_og_mou_7 | --> 0.465544 |



Conclusion

Actions:

1. The behaviour of customers to be monitored during action phase especially during 8th month for reduction in minutes of usage
2. Those customers who have not used mobile data during both phases need to be observed for other signs
3. Those customers who have not made any recharges specifically during action phase can be potential churners





Thank You !