

Telecom Churn Analysis

Project Overview and Key Insights

BY-

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Introduction to the Problem

- Customer churn is a critical issue in the telecom industry. This analysis aims to identify the key factors contributing to churn and develop models to predict and mitigate customer churn.

Data Description

- The dataset contains customer information and usage data for the past few months. Key features include customer demographics, account information, and usage patterns.

Exploratory Data Analysis (EDA)

- EDA was conducted to understand the distribution of features, detect outliers, and identify relationships between variables. Key insights include patterns in usage behavior and customer demographics.

Feature Engineering

- New features were created based on domain knowledge to enhance model performance. This includes interaction terms, log transformations, and feature scaling.

Modeling Approach

- Several models were developed to predict customer churn, including logistic regression, decision trees, and random forests. Hyperparameter tuning was performed to optimize model performance.

Model Evaluation

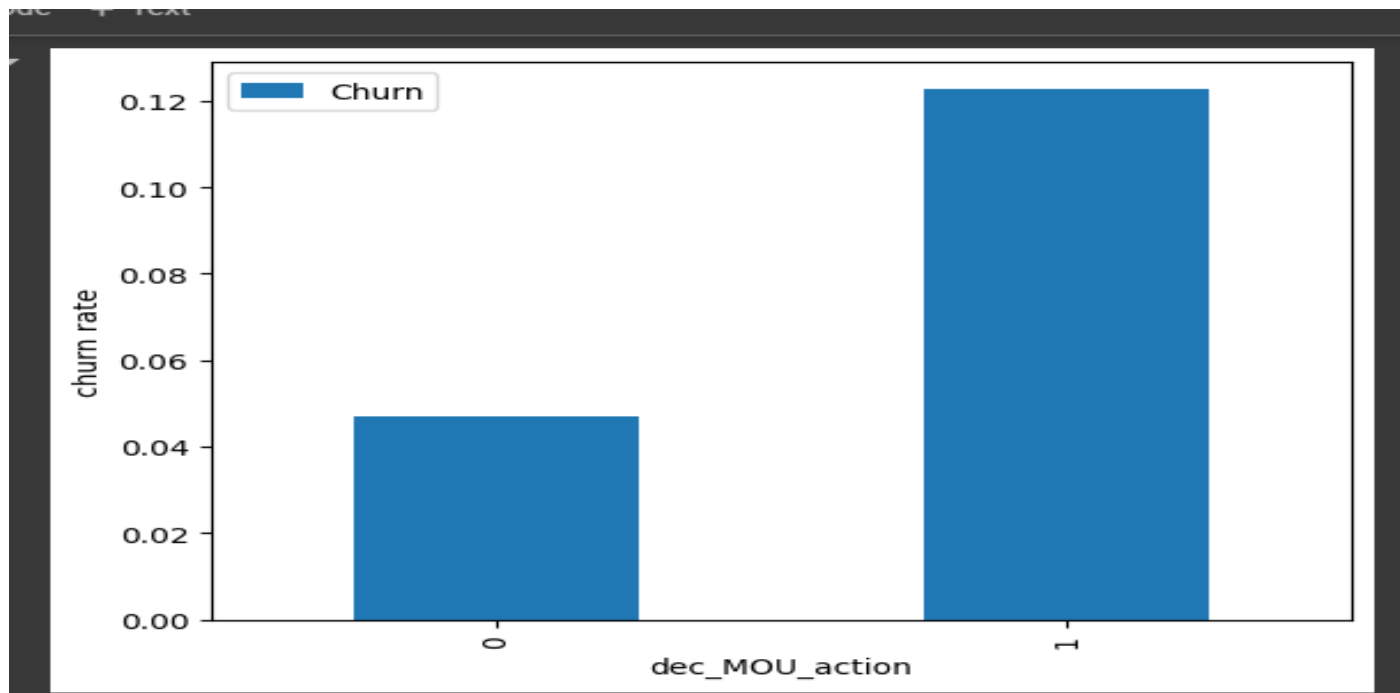
- Models were evaluated based on accuracy, precision, recall, and F1-score. The best-performing model was selected for deployment based on these metrics.

Key Results

- The final model achieved a high level of accuracy in predicting customer churn. Key predictors of churn include account age, usage patterns, and customer service interactions.

univariate analysis

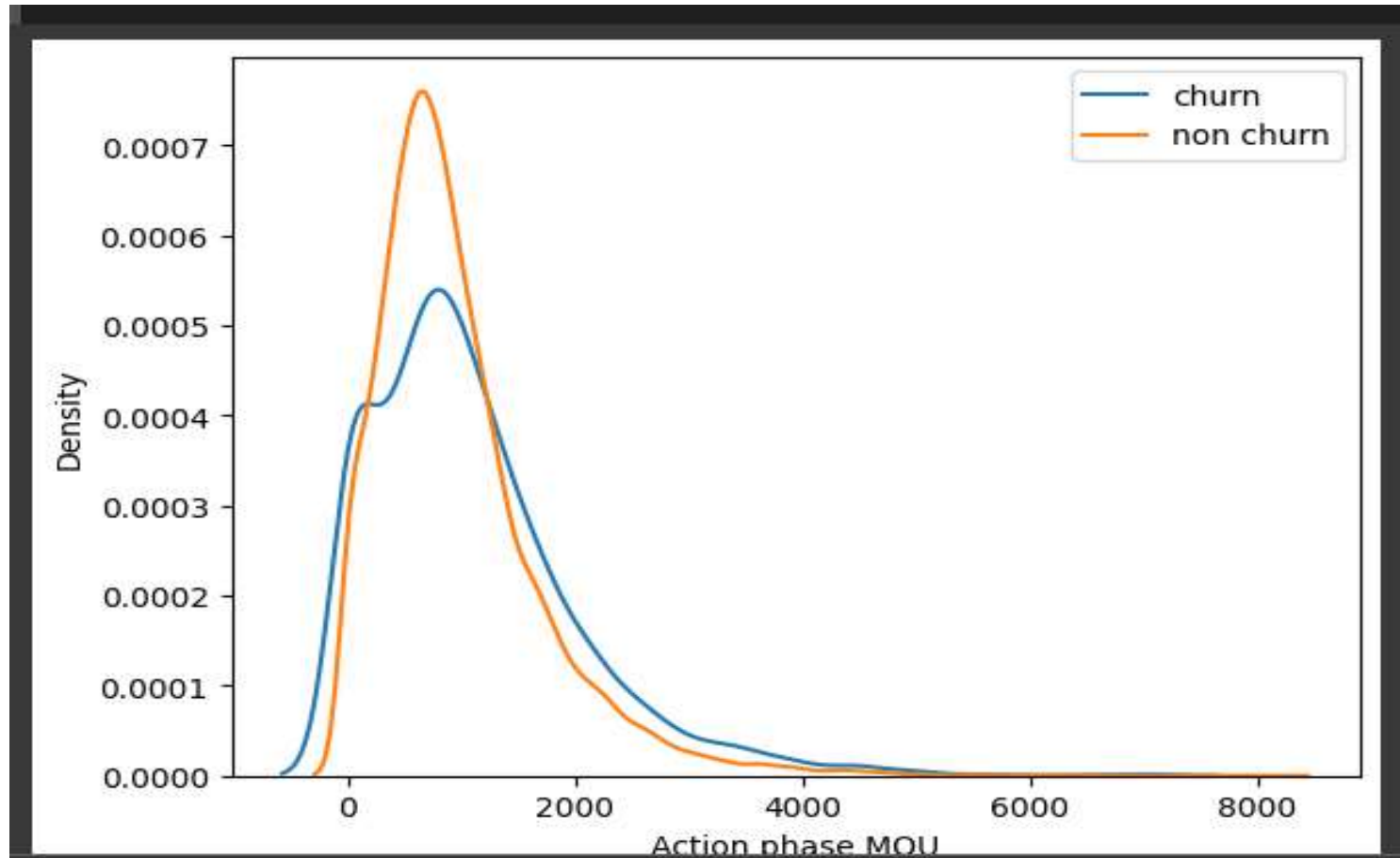
- churn rate on the basis whether the customer decreased her/his MOU in action month.



univariate analysis

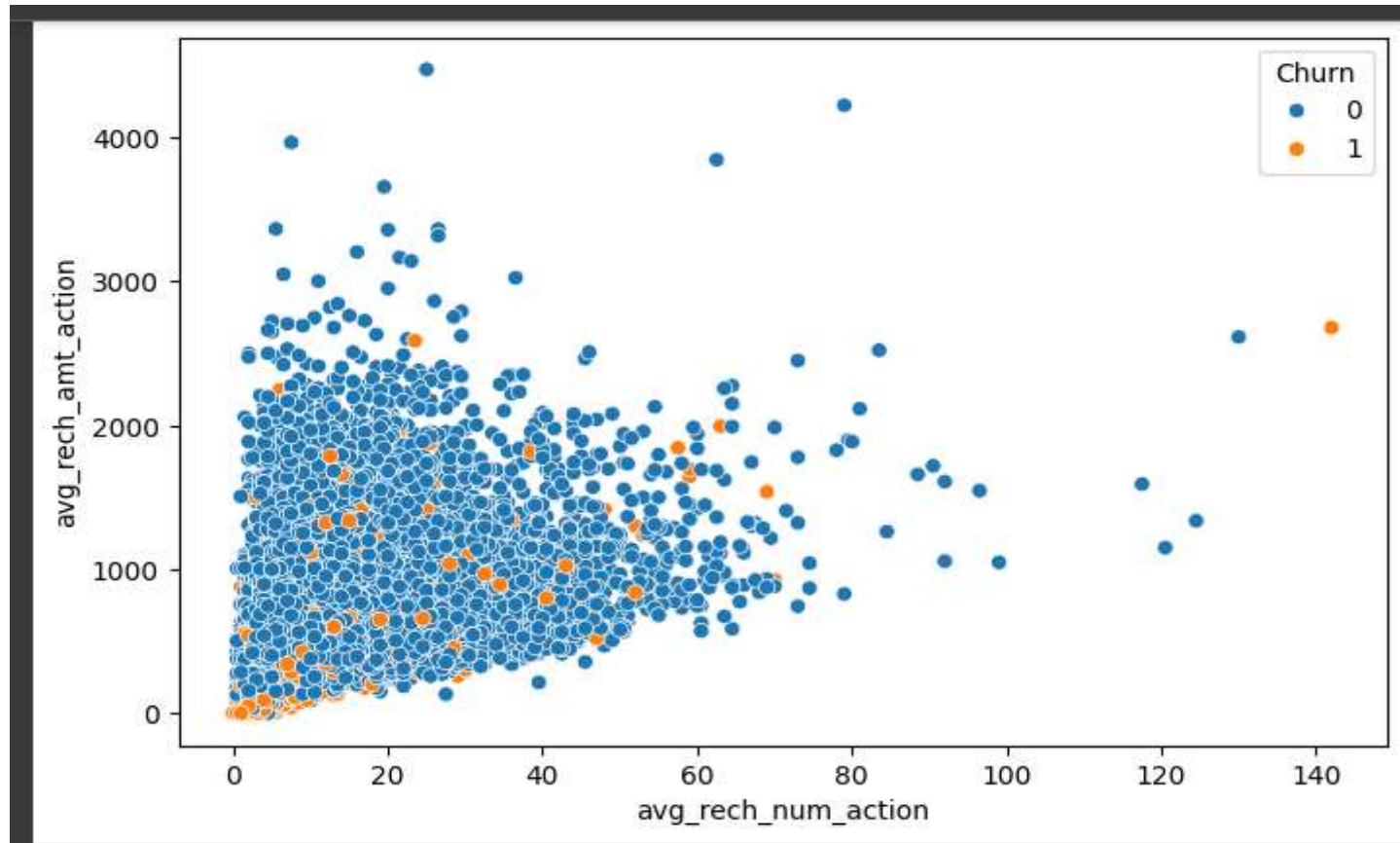
- We can see that the churn rate is more for the customers, whose minutes of usage(mou) decreased in the action phase than the good phase.
- Churn rate on the basis whether the customer decreased her/his amount of recharge in action month

Analysis of the minutes of usage MOU (churn and not churn) in the action phase

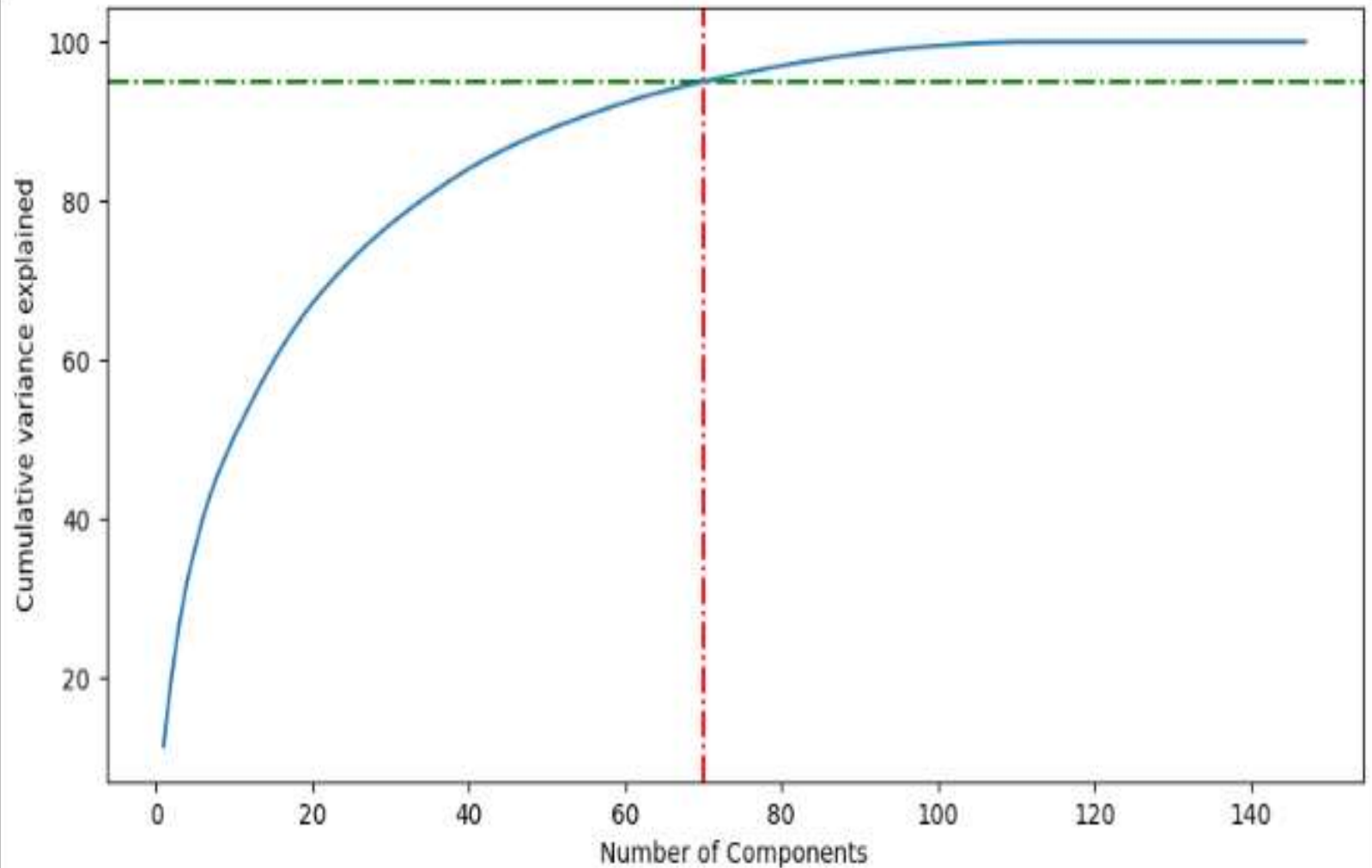


Bivariate analysis

- Analysing recharge amount and number of recharge in action month



Model building with PCA



Conclusion

- The analysis successfully identified key factors contributing to customer churn and developed a predictive model. The insights gained can help in devising targeted retention strategies.

Recommendations

- 1. Implement targeted marketing strategies based on customer segments.
- 2. Enhance customer support to address issues promptly.
- 3. Monitor key indicators of churn and proactively engage at-risk customers.