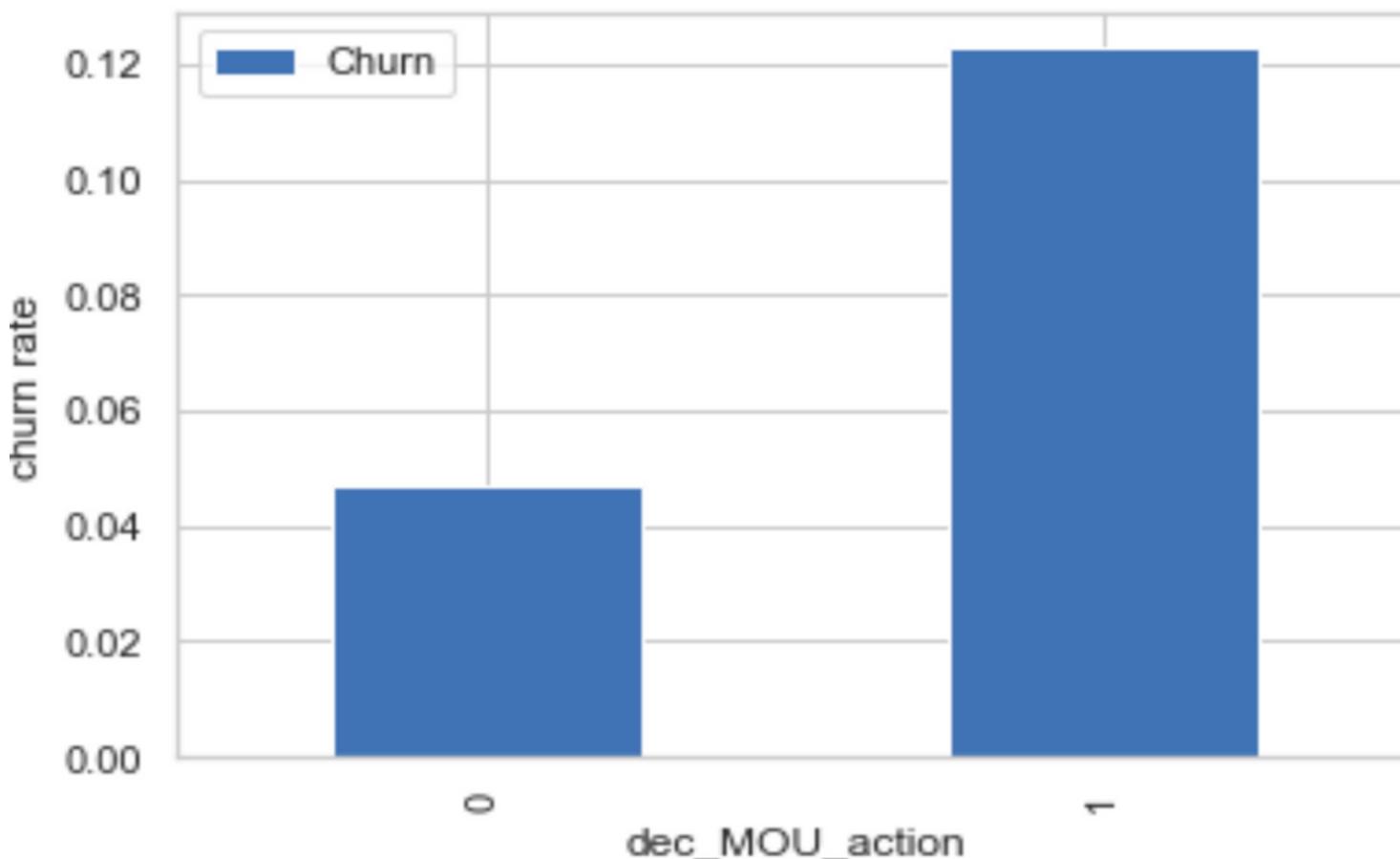
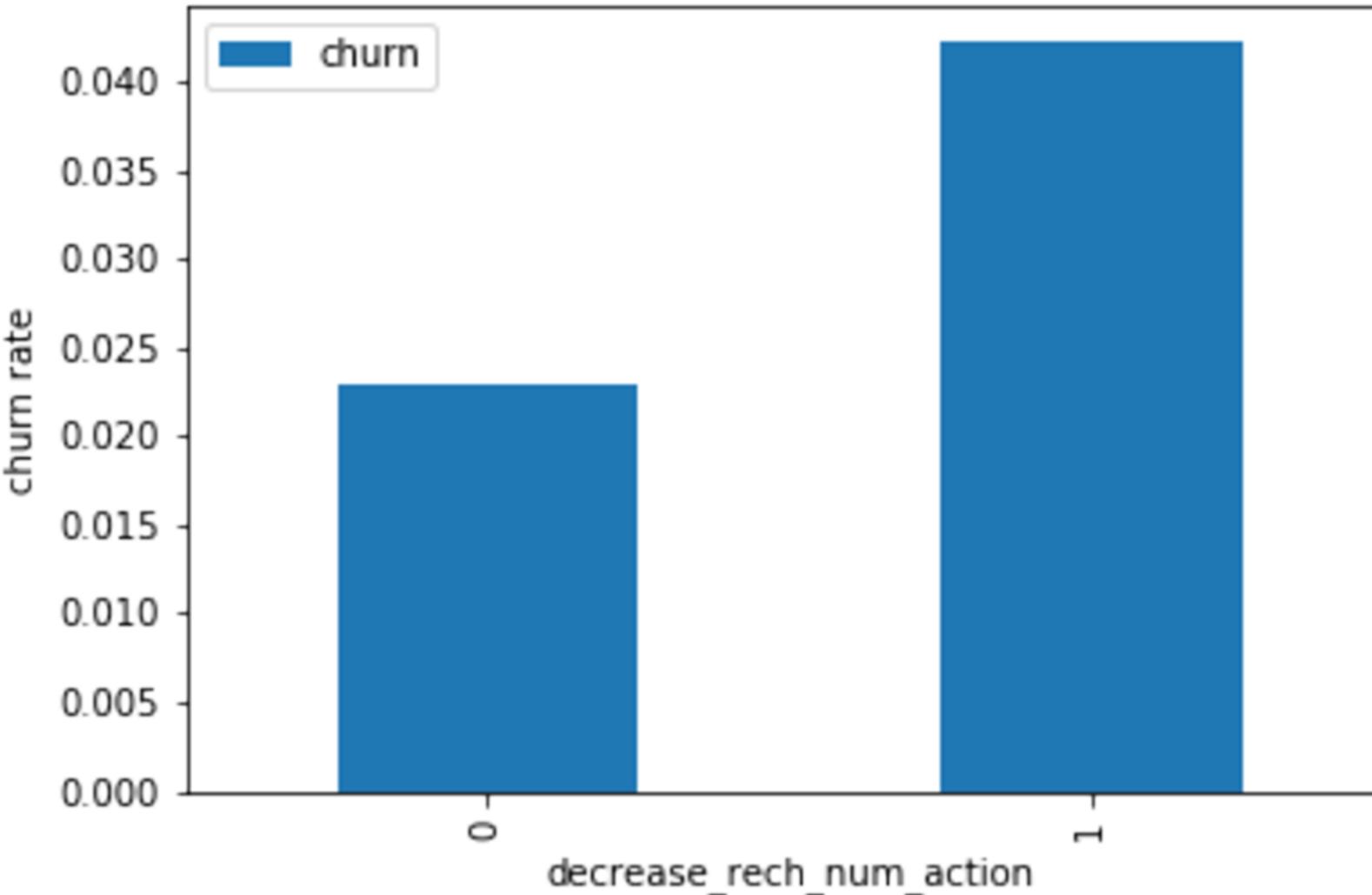


Examine customer-specific data from a prominent telecom company, develop predictive models to pinpoint customers who are at a high risk of leaving, and determine the primary factors contributing to churn.



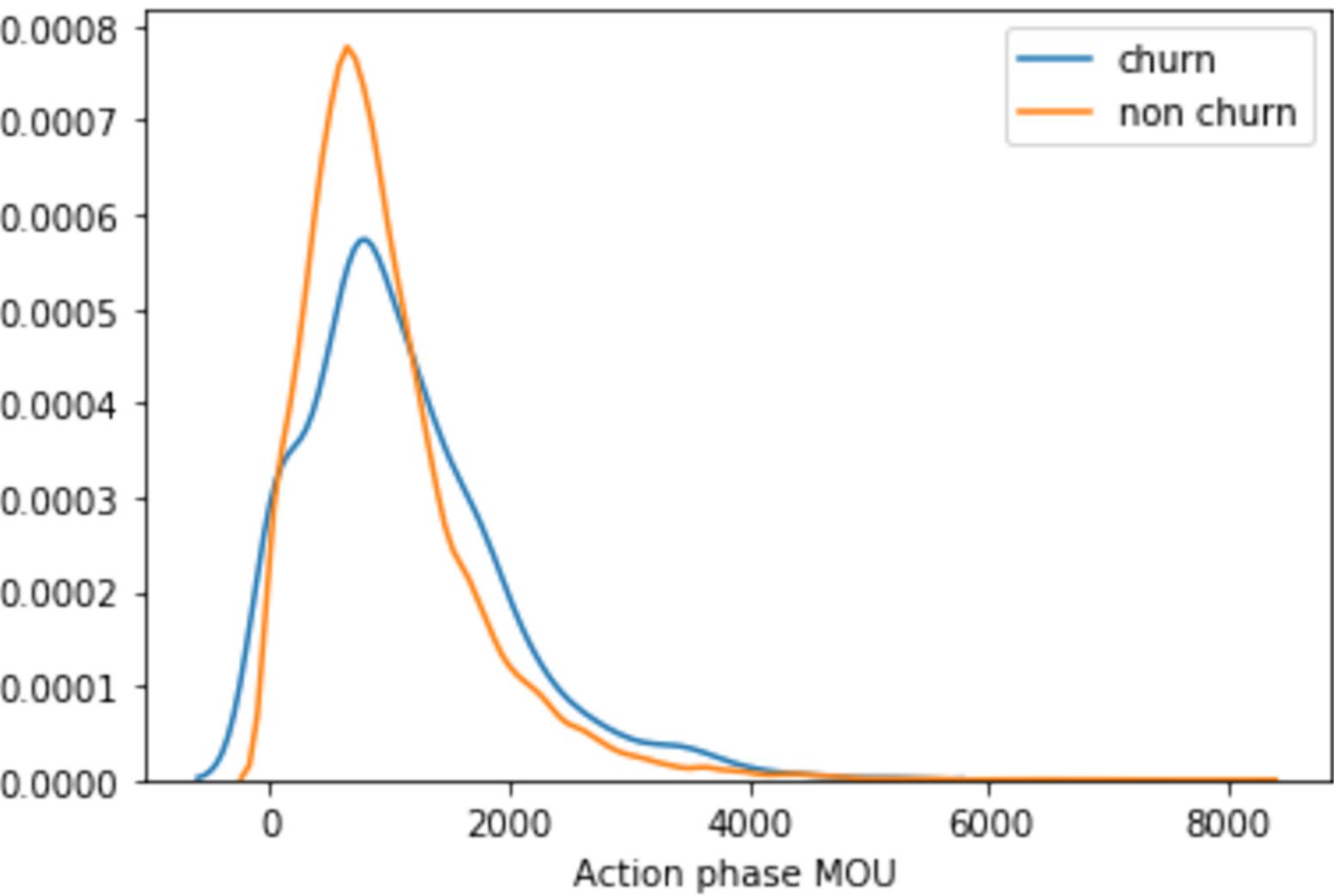
Churn Rate Analysis Based on Minutes of Usage (MoU)

Customers who reduced their minutes of usage (MoU) during the action month exhibit a higher churn rate compared to those whose usage increased during the favorable phase.



Churn Rate Analysis Based on Recharge Amount

The churn rate reflects a similar trend when considering the amount of recharge during the action month. Customers who reduced their recharge amount in this phase exhibit a higher churn rate compared to those whose recharge amounts increased during the favorable phase.



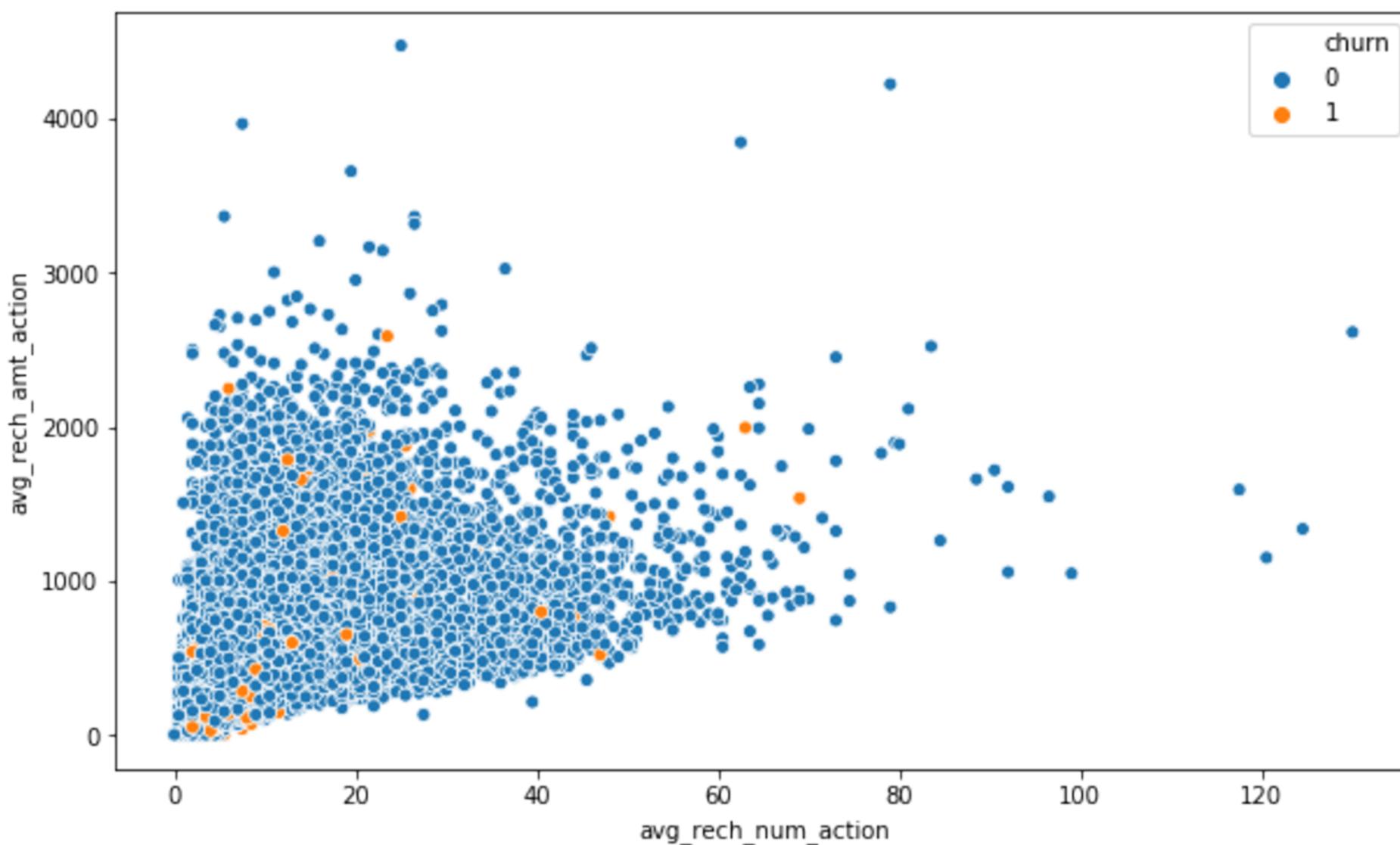
Analysis of Minutes of Usage (MoU) in the Action Phase

Churn vs. Non-Churn Customers

Customers who are at risk of churning typically have minutes of usage (MoU) ranging from 0 to 2,500. This indicates that lower usage is associated with a higher likelihood of churn.

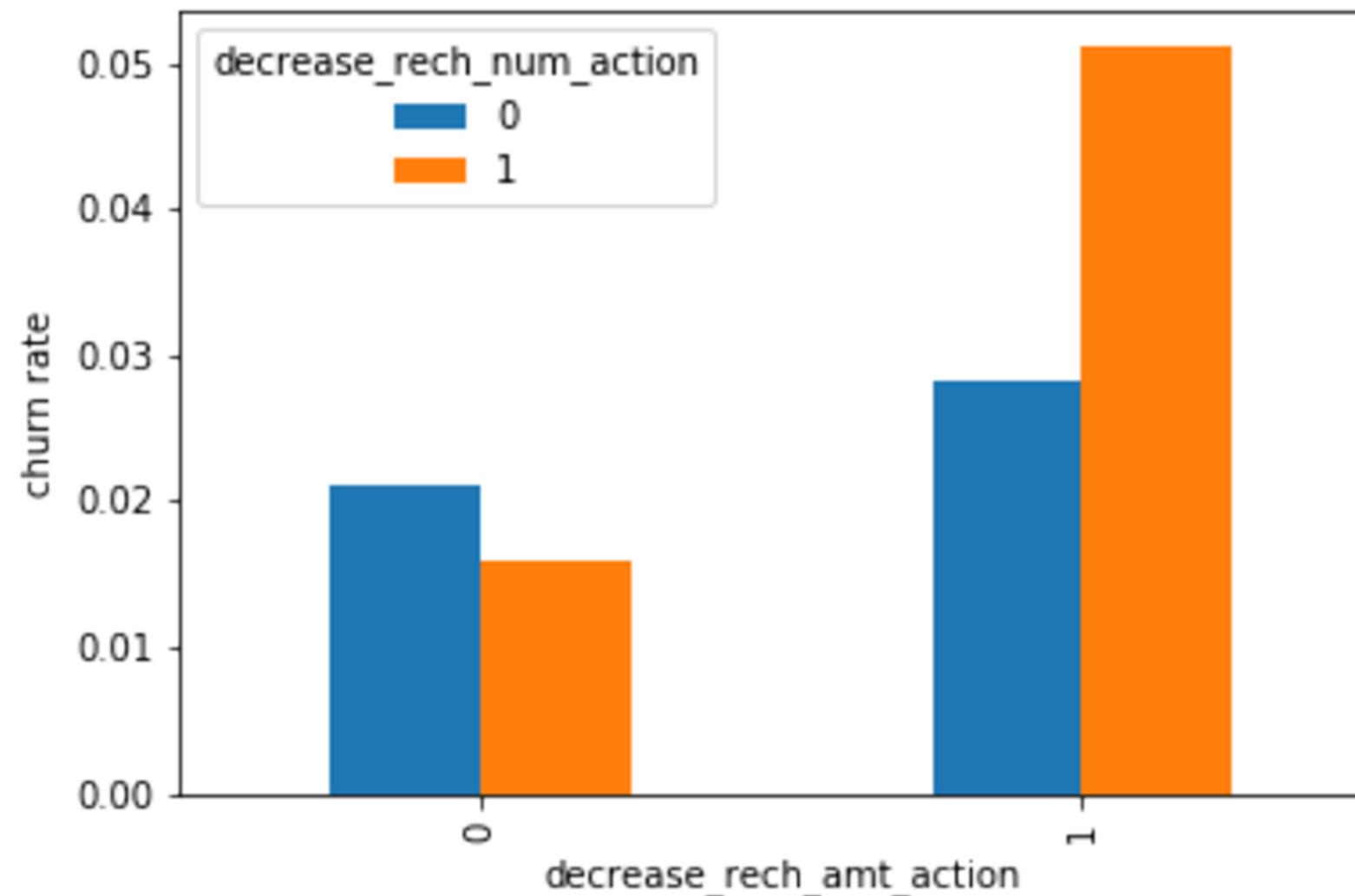
Key Insight

Usage Correlation: As the MoU increases, the probability of churn decreases. This suggests that higher engagement with the service is linked to greater customer retention.



Analysis of Recharge Amount and Frequency in the Action Month

The data reveals a strong correlation between the number of recharges and the total recharge amount during the action month. Specifically, as the number of recharges increases, the total amount recharged also tends to rise. This suggests that customers who engage more frequently with recharging their accounts are likely to contribute a higher overall recharge amount.



Churn Rate Analysis in Relation to Decreasing Recharge Amount and Frequency

The analysis indicates that the churn rate is significantly higher among customers whose recharge amount and the number of recharges have both declined during the action phase compared to the favorable phase. This trend underscores the importance of monitoring both the frequency and amount of customer recharges as key indicators of potential churn.

Model Comparison and Selection

The logistic regression model without Principal Component Analysis (PCA) demonstrates strong sensitivity and accuracy, comparable to those of models that incorporate PCA. Therefore, opting for the simpler logistic regression model with PCA is advantageous, as it effectively highlights the key predictor variables and their significance.

Benefits of the Selected Model

- **Clarity in Variable Importance:** The model elucidates which variables are critical for predicting churn.
- **Actionable Insights:** By identifying significant predictors, the model guides decision-making regarding customers at risk of churning.
- **Business Relevance:** This approach ensures that the findings are easily interpretable and applicable in a business context, making it a valuable tool for strategic planning.

Recomendations

1. Target the customers, whose minutes of usage of the incoming local calls and outgoing ISD calls are less in the action phase (mostly in the month of August).
2. Target the customers, whose outgoing others charge in July and incoming others on August are less.
3. Also, the customers having value based cost in the action phase increased are more likely to churn than the other customers. Hence, these customers may be a good target to provide offer.
4. Cutomers, whose monthly 3G recharge in August is more, are likely to be churned.
5. Customers having decreasing STD incoming minutes of usage for operators T to fixed lines of T for the month of August are more likely to churn.
6. Cutomers decreasing monthly 2g usage for August are most probable to churn.
7. Customers having decreasing incoming minutes of usage for operators T to fixed lines of T for August are more likely to churn.
8. `roam_og_mou_8` variables have positive coefficients (0.7135). That means for the customers, whose roaming outgoing minutes of usage is increasing are more likely to churn.