CHURN CUSTOMERS

FOR SYRIA TEL

BUSINESS UNDERSTANDING

Syria Tel aims to reduce customer churn by identifying key factors influencing customer retention.

Churn is a major financial challenge, and predicting it enables proactive business strategies.

DATA UNDERSTANDING

- Dataset contains 3,333 customer records and 21 variables.
- Key variables include customer tenure, call usage, and service type.
- Churn is the target variable to predict customer loss.

DATA ANALYSIS

- Customers with high usage patterns might have specific churn behaviors.
- Correlation analysis shows key variables influencing churn.
- Machine learning models predict churn probability with recall metrics.

BUSINESS INSIGHTS

Proactive customer engagement to reduce churn.

Personalized marketing campaigns targeting high-risk customers.

Optimized service plans to enhance customer satisfaction.

Revenue protection by minimizing customer loss.

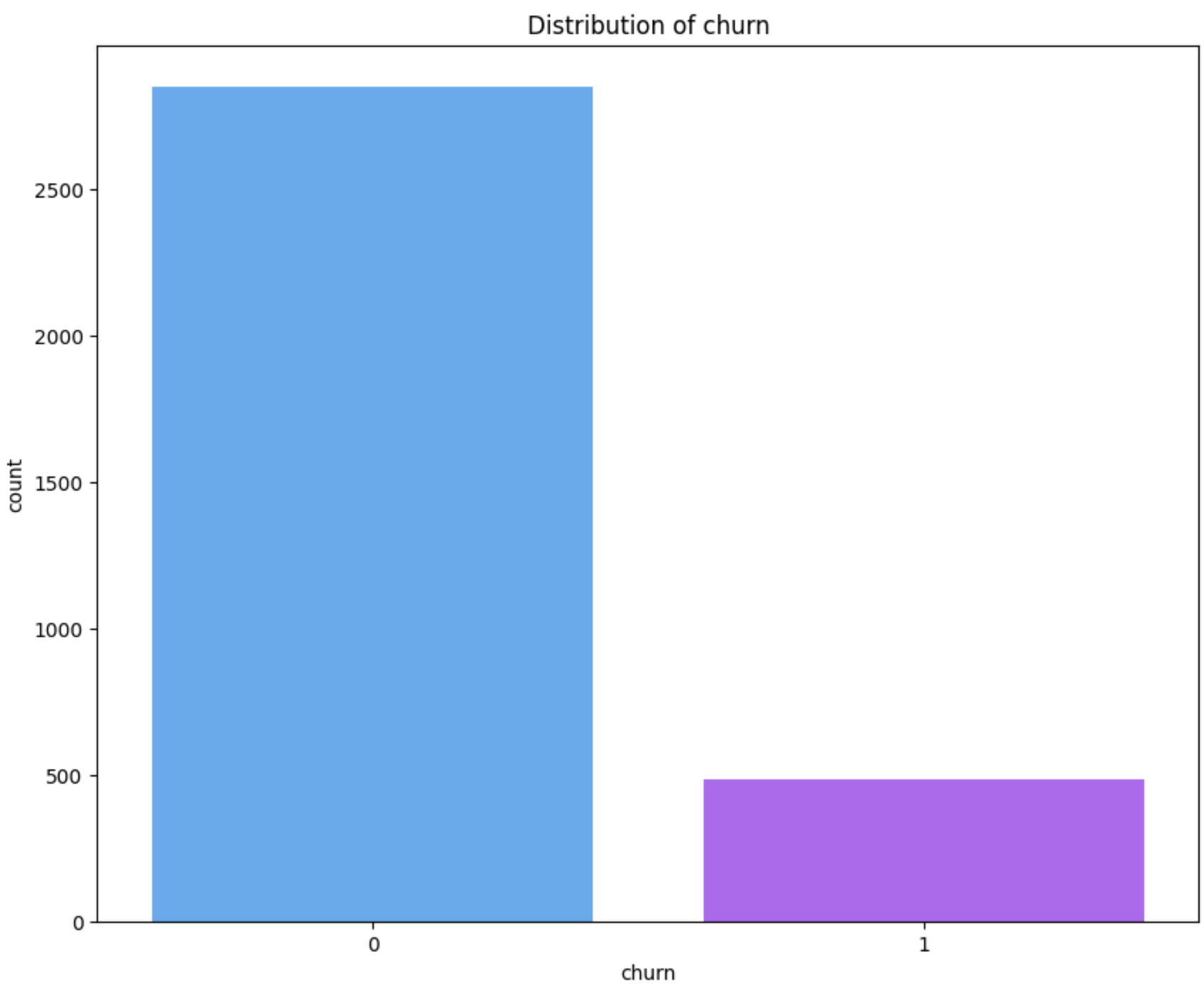
DATA EXPLORATION

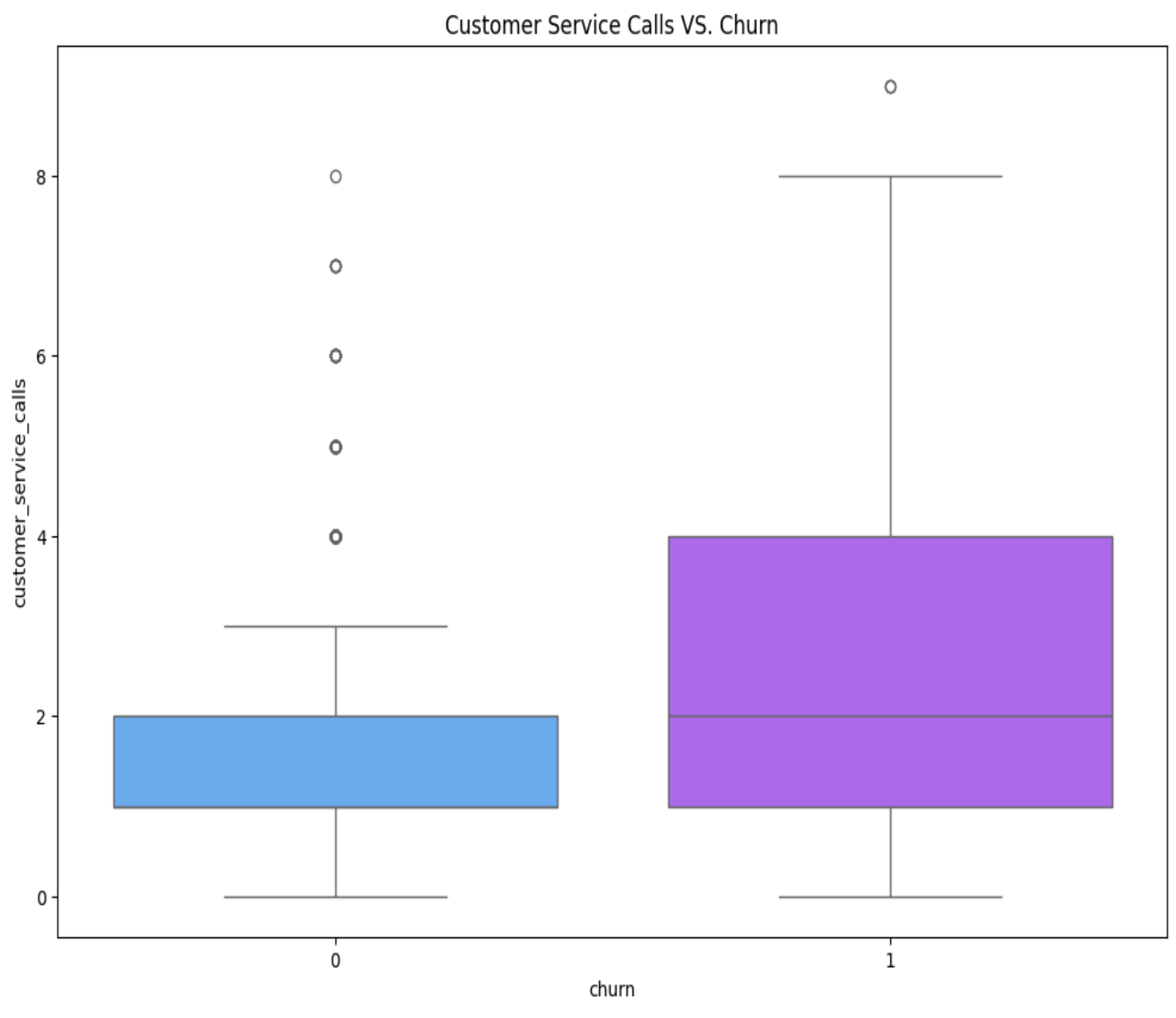
- Used pandas and numpy for data manipulation.
- Matplotlib and seaborn for visualization.
- Applied SMOTE to handle class imbalance in churn data.
- Identified key variables impacting churn behavior.

OBSERVATION

- 85.5% of customers did not churn, while 14.5% churned

- The above bar chart shows that the dataset is imbalanced, meaning the model may predict "No Churn" more often by default



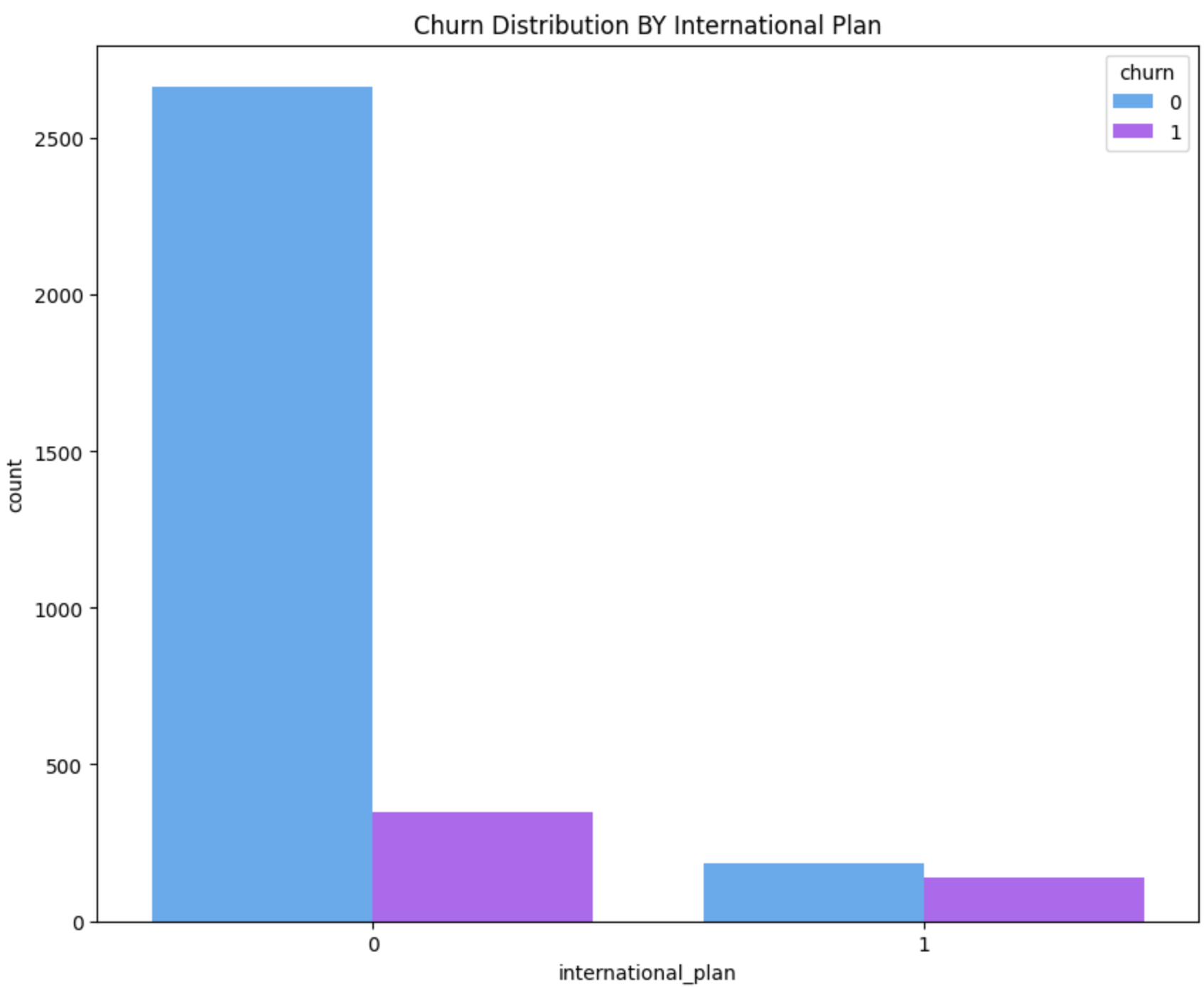


OBSERVATION

- A high number of customer service calls might indicate unresolved issues or dissatisfaction.
- The median number of customer service calls is higher for churn = 1, suggests that customers who call the customer service frequently are more likely to churn.

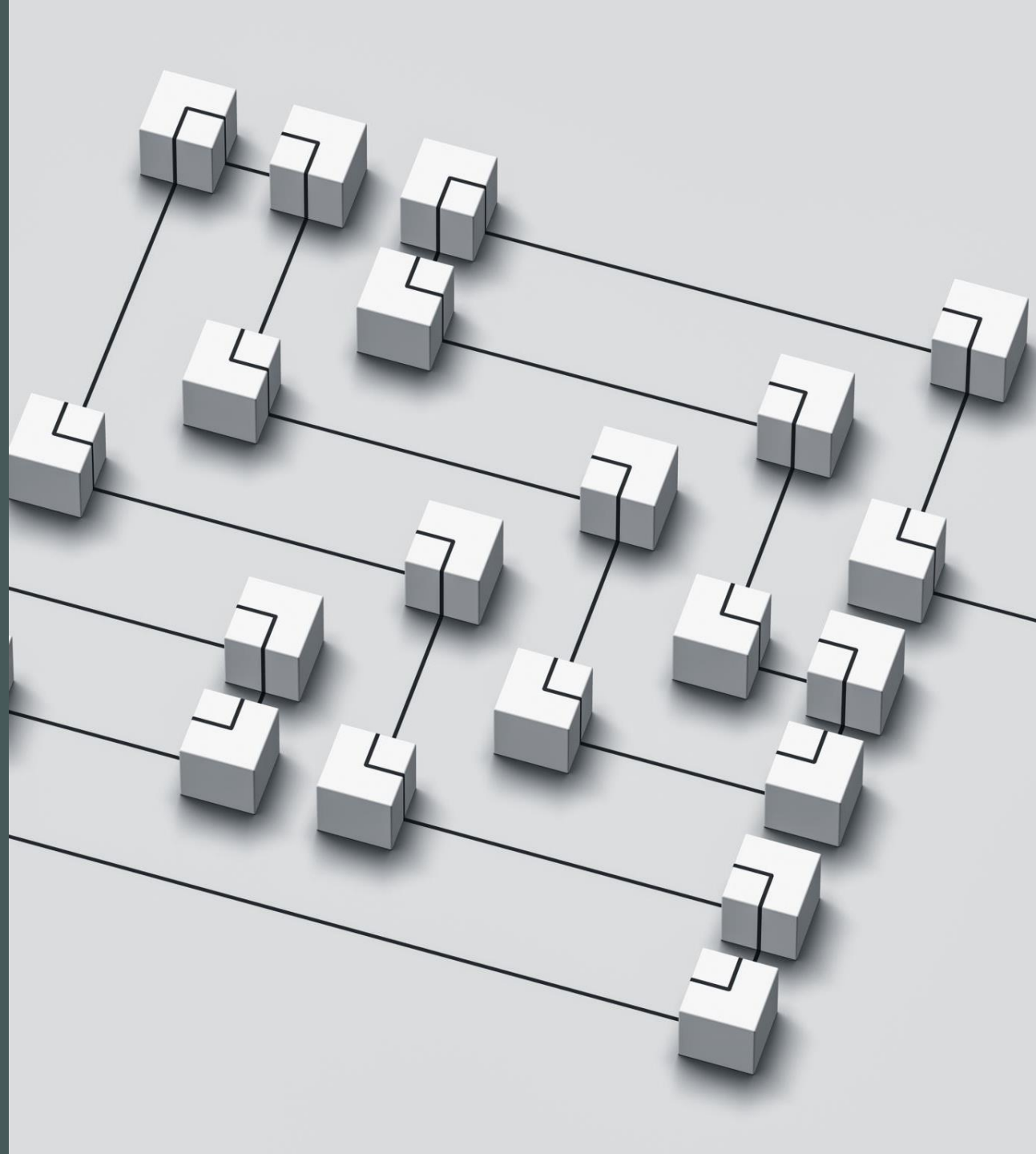
OBSERVATION

- The chart shows that customers with an international plan (international plan = 1) have a relatively higher proportion of churned users compared to those without an international plan (international plan = 0)



MODEL

- Logistic Regression was used as a baseline model with Decision tree classifier
- Evaluated model performance using Accuracy and Recall.
- Addressed class imbalance to improve prediction of churned customers.
- Results indicate improvements in recall, capturing more true churn cases.



CONCLUSION

- The model is now detecting churn well (72% recall for class 1) while keeping overall accuracy high (86%). It's a good balance between detecting churners and avoiding too many false alarms.
- The predictive model successfully identifies potential churners, allowing for early intervention.
- Addressing class imbalance improved recall, ensuring more accurate identification of churn-prone customers.