

ABC
TELCOM

UNDERSTANDING CUSTOMER CHURN

We value you...

Presented by : Mercy Kirwa
Date: 12th September, 2025

Customer Churn in Telecom

- Major challenge in the Telecom industry
- Impacts revenue, growth, and customer loyalty
- Data-driven strategies can help predict and reduce churn.

Project Overview

This project aims to

- Identifying customers likely to churn using predictive modeling
- Discover key drivers of churn(e.g, monthly charges, contract type, support quality)
- Provide actionable insights for targeted retention strategies
- Reduce churn and improve customer loyalty.

Business Problem

01

Current Churn Rate 26%(1815 Customers lost in
2024)

02

Approximately revenue loss(\$ 2.4 Million)

- Retention is cheaper than new acquisition.

Dataset Overview

Source: Kaggle - SyriaTel Customer Churn Dataset

- 3333 customer records
- 21 features(usage and charges, service plans, customer service calls and churn behavior)

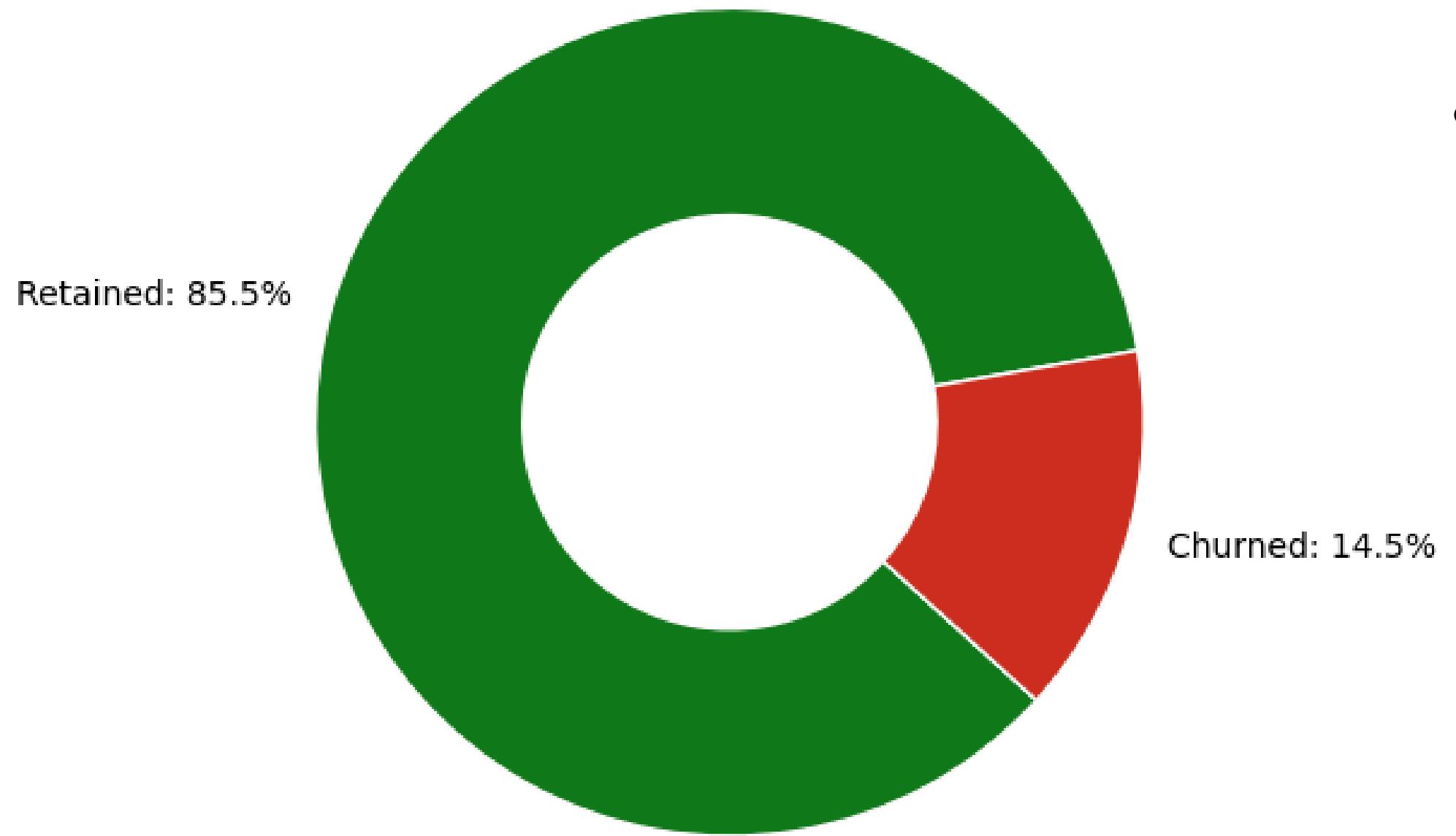
Why this dataset?

- Captures real customer behavior
- Enables churn prediction modeling
- Provides relevant insights to guide ABC Tel. Co retention strategy

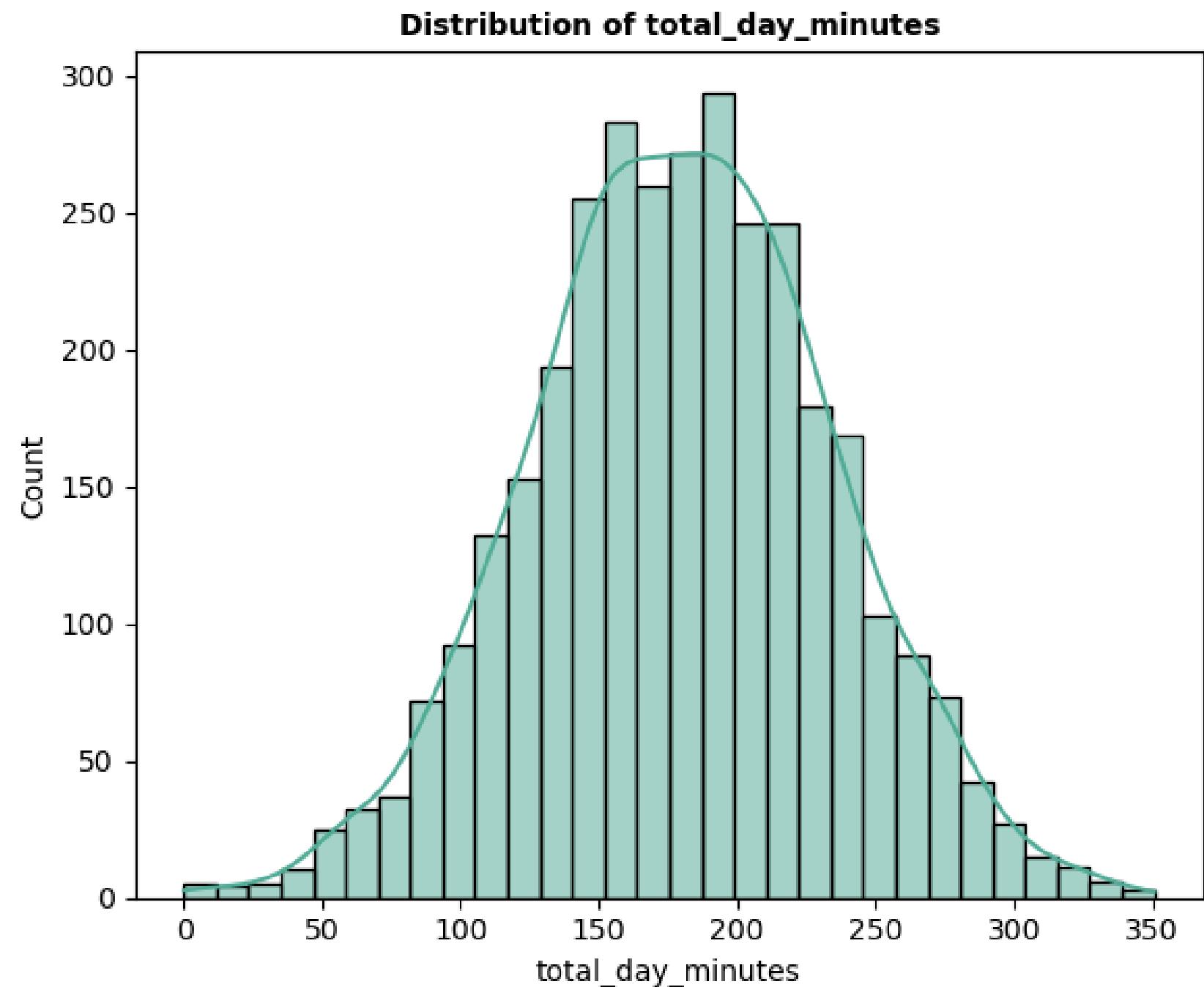
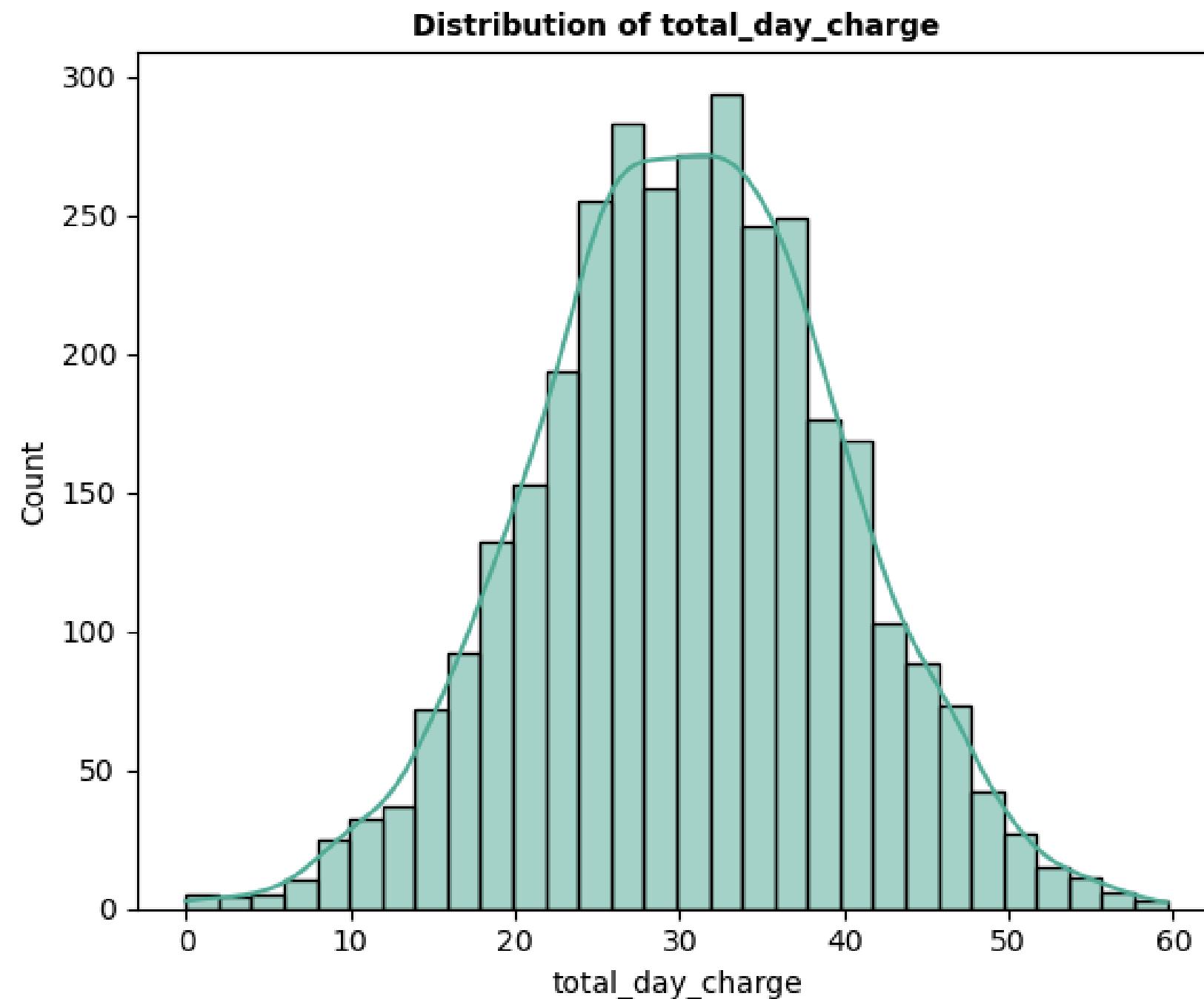


Exploratory Insights

Churn Distribution



- Retaining even a portion of these customers can deliver big financial gains
- While most customers stay, a 14.5% churn still represents a significant revenue loss

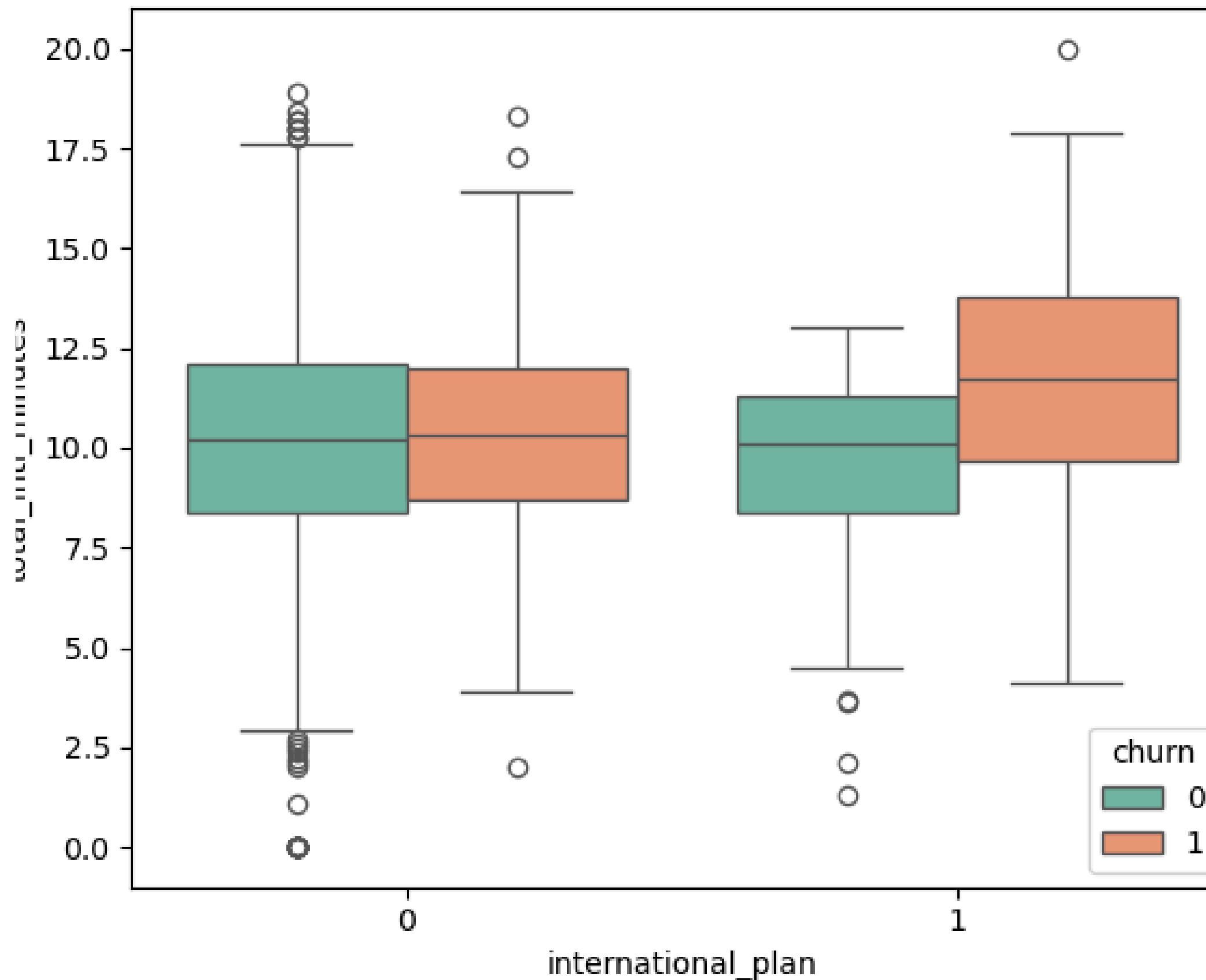


- Higher day call minutes directly lead to higher day charges
- The trend is the same across all periods of time(day, evening, night).



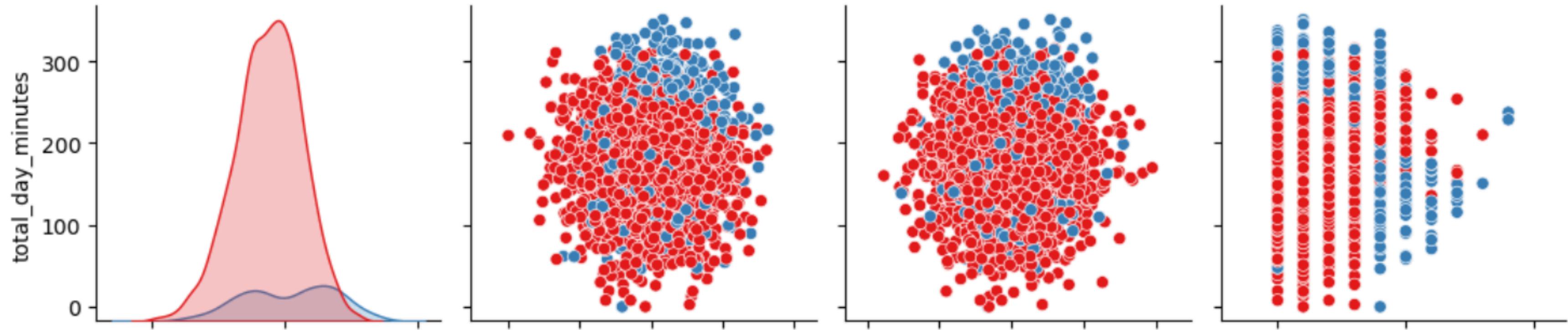
- Customers paying for international plans and contacting support multiple times are the most dissatisfied and more likely to leave

International Minutes by International Plan and Churn

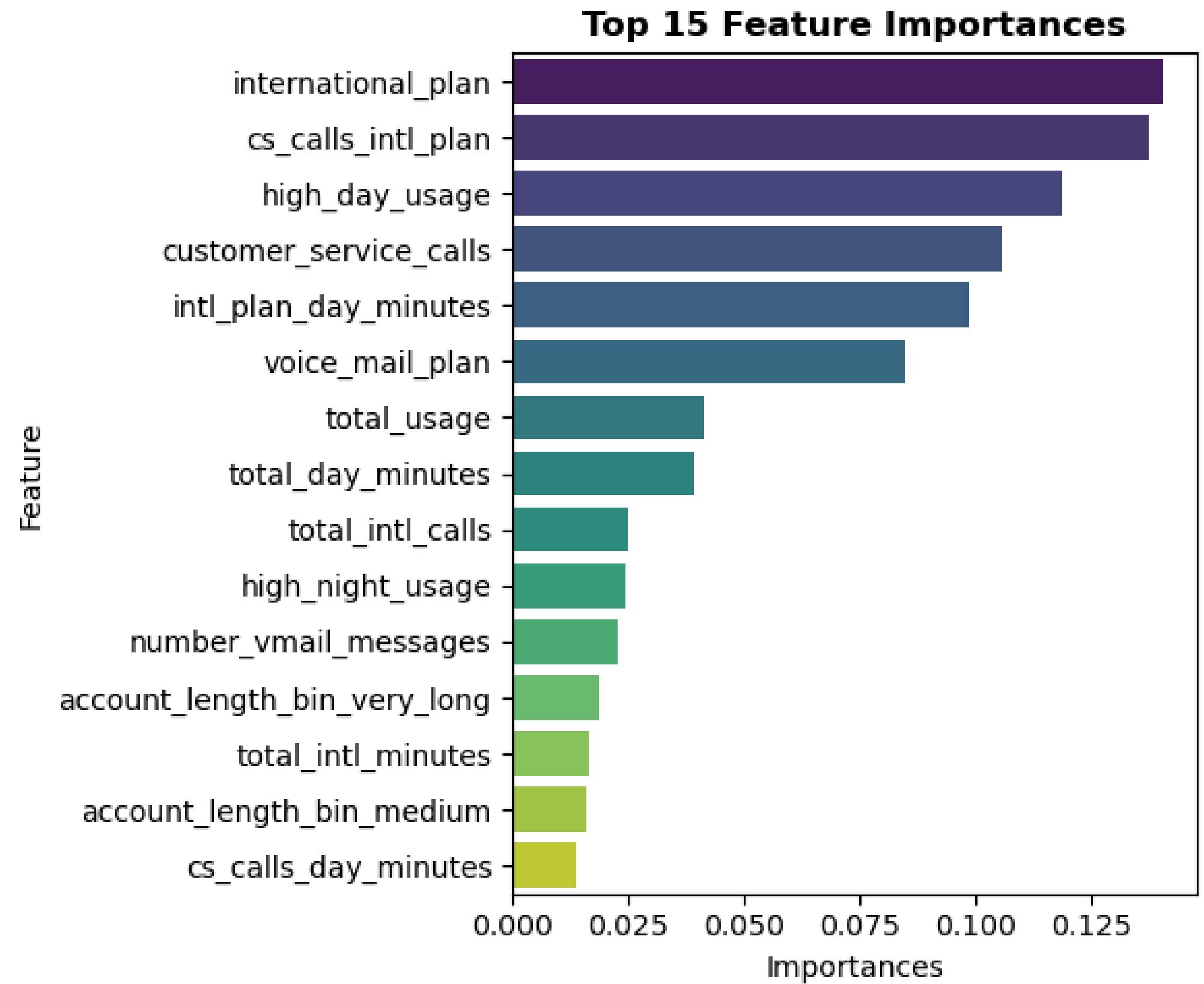


- High international usage customers, especially with extreme usage patterns are more likely to churn.

Pairplot of Usage Features and Customer Service Calls by Churn



- **(Churned customers)**- Clustered in high usage + many service call regions
- **(Retained customers)**- Spread out in lower usage + fewer service call areas
 - The pattern is consistent across day, evening, and night usage.
 - High usage, high service-call customers are the most churn-prone



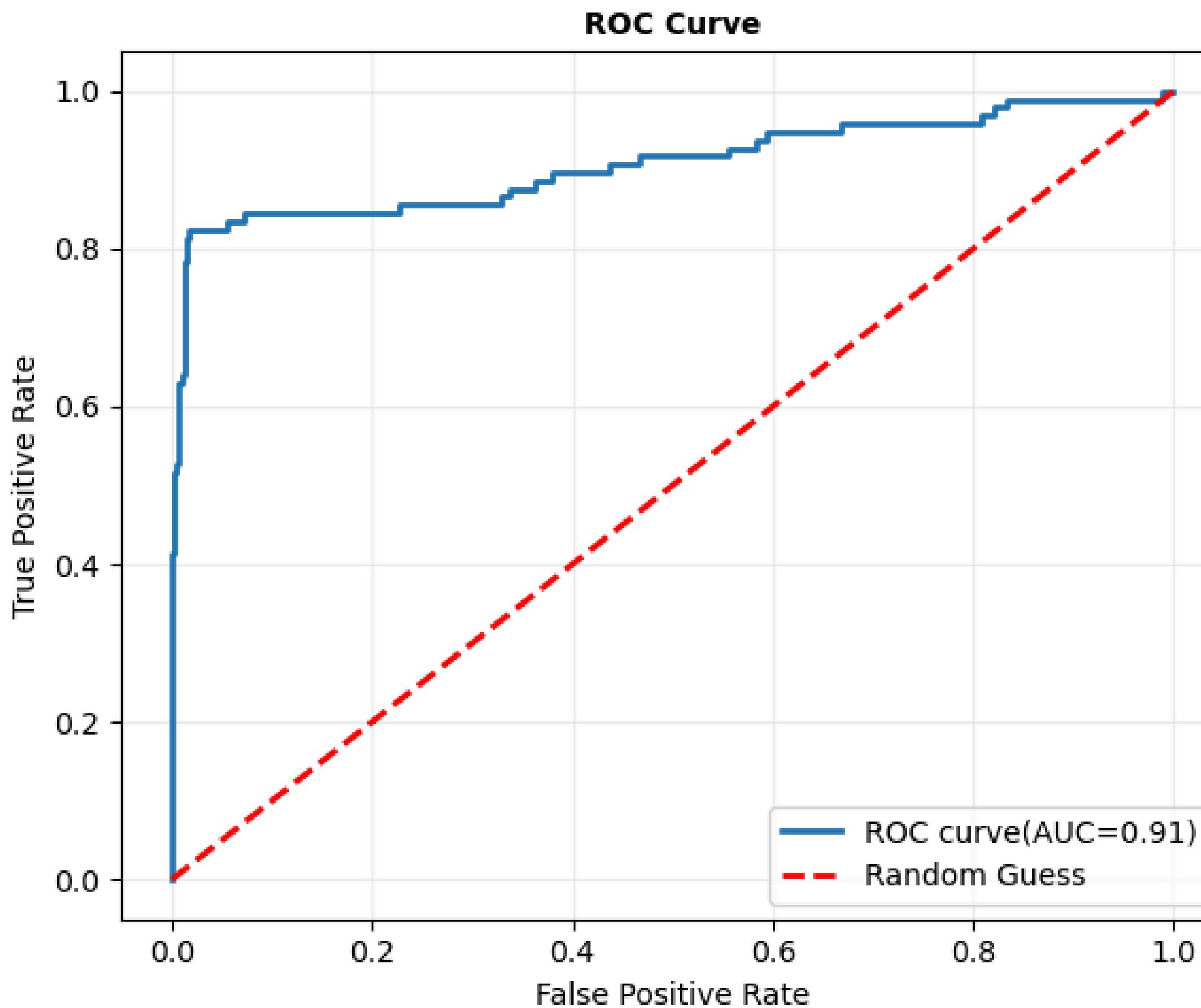
- Churn is mainly driven by international plans, many customer service calls, including calls made by international plan users, and high day usage.
- Other factors like voicemail plans, account length, and customer calls day minutes have little influence on churn behavior

Recommended model



XGBoost model(Tuned)

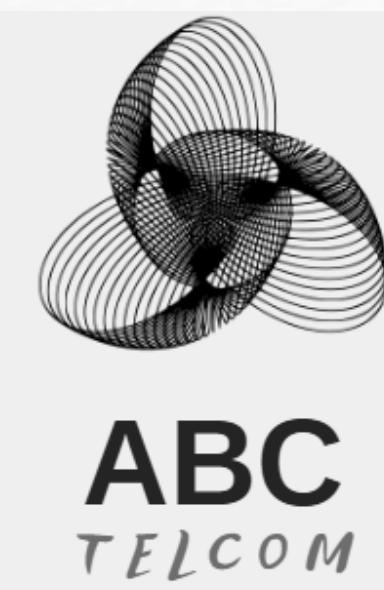
- Delivered both high accuracy and strong recall, making it reliable for identifying customers most at risk of churning
- Predicts churn accurately and identifies the most at-risk customers reliably.
- Catches 82% of potential churners (high recall) - proactive retention is possible.
- Correctly flags 88% of predicted churners (precision) - most alerts are meaningful.
- Overall reliability: 96% of all predictions are correct.
- Strong separation of churners vs non-churners: ROC-AUC 0.90.



- The ROC curve stays close to the top-left corner, with an AUC of 0.91, showing our model has excellent ability to correctly distinguish between churners and non-churners

Recommendation

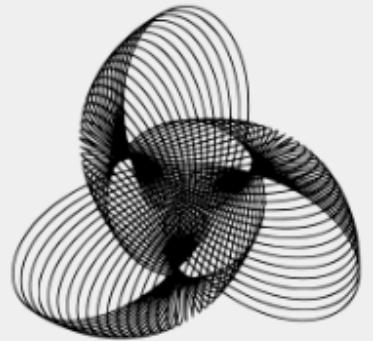
- Use the XGBoost model to spot at-risk customers early.
- Focus on customers with international plans, high usage, and many service calls.
- Offer personalized incentives (discounts, loyalty rewards, better plans).
- Improve customer service with faster response and proactive support.
- Review pricing to stay competitive and encourage long-term contracts.
- Keep the model updated and improving as customer behavior changes.



Next Steps

- Deploy Model: Use XGBoost to identify at-risk customers.
- Run Retention Campaigns: Focus on high-risk segments.
- Monitor & Improve: Track results and retrain the model regularly.
- Collect Customer Feedback: Use surveys to guide retention offers.
- Review Plans & Pricing: Adjust high-usage and international plans.

Questions?



ABC
TELCOM

*Your customers are your greatest
asset-let's keep them.*

Thank you!