Executive Summary: Telco Customer Churn Analysis

Dataset Overview

The dataset includes customer information from a telecom company, focusing on understanding churn—whether customers have left the company. The analysis explores various customer services, such as PhoneService, InternetService, OnlineSecurity, DeviceProtection, TechSupport, and streaming services (StreamingTV and StreamingMovies).

Churn Insights

1. **Phone Service**:
   o Around 90% of customers have phone service.
   o Among those with phone service, approximately 25% churned, while about 75% did not churn.
   o Very few customers without phone service churned (~5%).
2. **Multiple Lines**:
   o 45% of customers have multiple lines.
   o Among those with multiple lines, approximately 30% churned, while 70% did not.
   o Customers with only one line churn at a lower rate (~20%).
3. **Internet Service**:
   o Customers with **Fiber optic** internet experience significantly higher churn rates (~40%) compared to those with **DSL** or no internet service (~20%).
4. **Online Security**:
   o Half of the customers don't use online security services.
   o Churn rates for customers without online security are around 40%, compared to 15% for those with security services.
   o The absence of online security services strongly correlates with higher churn.
5. **Online Backup**:
   o Around 40% of customers without online backup services churn, compared to only 20% of those who use such services.
   o This indicates that customers with backup services feel more secure and are less likely to leave.
6. **Device Protection**:
   o 50% of customers do not have device protection.
   o Churn rates for customers without device protection are around 35%, compared to 20% for those with protection.
   o The absence of device protection is associated with a higher likelihood of churn.
7. **Tech Support**:
   o A significant portion of customers (~55%) do not use tech support services.
   o Churn rates are around 42% for customers without tech support, compared to 18% for those with tech support.
   o This emphasizes the importance of tech support in customer retention.

8. **Streaming Services (TV and Movies)**:
    o Customers with streaming services such as TV and Movies show higher churn rates (~30%) compared to those without (~20%).
    o The higher churn among streaming service users suggests potential dissatisfaction with the content or bundled services.

Visualizations and Data Representation

Count plots were used to display the distribution of churn across different service categories. These visuals clearly highlight the comparison between customers who churned and those who did not. Bar charts effectively represent the churn behavior for each service category, making it easy to identify which services correlate strongly with customer churn.

Key Takeaways

1. **Service Features Impact**: Customers who subscribe to **OnlineSecurity**, **TechSupport**, and **DeviceProtection** are less likely to churn, highlighting the importance of these services in customer retention strategies.
2. **Internet Service Type**: **Fiber optic** users exhibit the highest churn rates, signaling potential dissatisfaction. Addressing service quality and customer engagement in this area could reduce churn.
3. **Multiple Lines and Streaming Services**: Customers with **multiple lines** and **streaming services** show higher churn rates. Improving service bundles or providing targeted offers may help reduce churn for these segments.

Conclusion

This analysis provides actionable insights for reducing customer churn by improving service offerings and customer satisfaction. Focusing on enhancing areas like **OnlineSecurity**, **TechSupport**, and **Fiber optic** internet services could lead to significant reductions in churn and increased customer loyalty.