

# Summary & Recommendations

## Executive Summary:

### Objective:

The primary objective of this analysis is to explore various service-related factors and their impact on customer churn. By analyzing the usage patterns of services such as **PhoneService**, **MultipleLines**, **InternetService**, **OnlineSecurity**, **OnlineBackup**, **DeviceProtection**, **TechSupport**, **StreamingTV**, and **StreamingMovies**, the analysis aims to uncover significant trends that correlate with churn behavior. Understanding these correlations is crucial for businesses looking to reduce customer churn and enhance retention strategies.

### 1. Service Usage Patterns (General Overview):

- The dataset contains several categorical variables representing different services that customers have opted for. By visualizing these variables using count plots, we can observe the percentage of customers subscribed to each service.
- **Phone Service:** The majority of customers (around 90%) have a phone service, which is one of the most basic services offered.
- **Multiple Lines:** Approximately 50% of the customers use multiple lines, while the other half only use a single line.
- **Internet Service:** Around 65% of customers have internet service, with the remaining customers not opting for this feature.
- **Online Security:** About 40% of customers have subscribed to online security, suggesting this service is less popular compared to the core services.
- **Online Backup:** Similar to online security, only around 40% of customers have this feature activated.
- **Device Protection:** Roughly 45% of customers have opted for device protection services.
- **Tech Support:** About 35% of customers have access to tech support, while the majority have not opted for this service.
- **Streaming TV and Streaming Movies:** Approximately 50% of customers have subscribed to these entertainment services, indicating moderate popularity.

### 2. Churn Analysis by Service:

- The analysis also focuses on the churn rate (percentage of customers who left the service) for each category. This helps in identifying which services are linked with higher churn rates.
- **Phone Service:**
  - **Churned:** Only about 15% of customers who have phone service have churned.

- **Non-Churned:** The remaining 85% of phone service users continue to stay with the company.
- **Multiple Lines:**
  - **Churned:** Customers with multiple lines show a churn rate of approximately 25%.
  - **Non-Churned:** 75% of customers with multiple lines have stayed.
- **Internet Service:**
  - **Churned:** Around 30% of customers with internet services have churned.
  - **Non-Churned:** 70% of customers with internet services remain.
- **Online Security:**
  - **Churned:** There is a high churn rate of approximately 40% among customers without online security.
  - **Non-Churned:** Customers with online security are more likely to stay, with a churn rate of only around 20%.
- **Online Backup:**
  - **Churned:** Customers without online backup services have a higher churn rate (35%), indicating that this service might be valued for retaining customers.
  - **Non-Churned:** Only 20% of customers with online backup have churned, suggesting that this feature contributes to retention.
- **Device Protection:**
  - **Churned:** Approximately 35% of customers without device protection churn, while only about 25% of those with protection churn.
- **Tech Support:**
  - **Churned:** Customers without tech support have one of the highest churn rates, at around 45%, compared to only 20% for those with tech support.
- **Streaming Services (TV and Movies):**
  - **Churned:** Customers without streaming services are slightly more likely to churn (~30%) than those who subscribe (~25%).

### 3. Payment Methods and Churn:

- A significant finding relates to how the **payment method** impacts customer churn:
  - **Electronic Check:** The churn rate is highest for customers using electronic check as a payment method (45%). This suggests potential dissatisfaction or payment-related issues with this method.
  - **Credit Card, Bank Transfer, and Mailed Check:** These payment methods show significantly lower churn rates, with less than 20% of customers leaving

## Recommendations:

1. **Focus on Value-Added Services:**
  - Services such as **Online Security**, **Tech Support**, and **Online Backup** show a clear correlation with customer retention. The company should consider promoting these services to customers who do not currently have them. Offering discounts or bundling these services with core services might increase overall customer satisfaction and reduce churn.

2. **Improve Customer Experience with Electronic Payments:**

- The high churn rate among customers using **electronic check** as a payment method highlights an area for improvement. Investigating the issues these customers face (e.g., billing, transaction difficulties) and offering more payment flexibility might reduce churn in this category.

3. **Targeted Marketing for At-Risk Customers:**

- The analysis identifies customers without certain services (such as **tech support** or **device protection**) as being more likely to churn. The company can implement targeted marketing campaigns offering these customers personalized solutions or trials to encourage service adoption.

4. **Monitor Internet Service Satisfaction:**

- A significant portion of customers with **internet services** have churned (30%). This could indicate dissatisfaction with internet service quality, speed, or pricing. Conducting customer satisfaction surveys and improving service quality could mitigate this issue.