

Summary and Recommendation

- **Service Usage Patterns:**
Customers who **do not churn** are more likely to have essential services such as **Phone Service**, **DSL Internet Service**, and **Online Security** enabled. These services appear to create greater customer stickiness and loyalty.
- **Service Gaps and Churn:**
For services like **Online Backup**, **Tech Support**, and **Streaming TV**, **higher churn rates** were observed when these services are **not subscribed** or **unavailable**. This suggests that offering and promoting these services could reduce churn risk.
- **Payment Methods and Churn Risk:**
Customers who use **Electronic Check** as a payment method are significantly more prone to churn compared to customers using other payment options. Exploring incentives to shift customers to more stable payment methods may help reduce churn.
- **Visualization Highlights:**
The charts developed in this analysis clearly illustrate the correlation between service adoption and customer retention. Key visualizations effectively demonstrate how service presence and payment methods impact churn rates.

This churn analysis reveals critical insights into customer behavior, service utilization, and risk indicators associated with customer attrition.

Key Findings:

- **Overall Churn Rate:**
Approximately **26.54%** of customers have churned, indicating a significant opportunity for retention initiatives.
- **Service Usage Patterns:**
Customers who **retain** their subscriptions typically utilize essential services such as:
 - **Phone Service**
 - **DSL Internet Service**
 - **Online Security**

- Customers subscribing to these services show a **lower churn propensity**, suggesting that bundling and promoting these offerings can reinforce loyalty.
- **Impact of Service Gaps:**
Services like **Online Backup**, **Tech Support**, and **Streaming TV** are associated with higher churn rates when **not subscribed**.
Lack of these value-added services correlates with increased customer dissatisfaction and departure.
- **Payment Method Influence:**
The **Electronic Check** payment method is a major churn indicator.
Customers paying via Electronic Check churn at a **significantly higher rate** compared to those using other methods like Credit Card or Bank Transfer.
Payment method optimization could potentially reduce churn by targeting users for a payment method change.

Visual Insights:

- A clear **pie chart** illustrates that more than a **quarter (26.54%)** of the customer base has churned.
- **Count plots** and **service-wise distribution charts** further reveal that churn likelihood increases sharply among customers lacking certain services or facing friction during transactions.

Strategic Implications:

- **Enhancing the penetration** of key services (Online Security, DSL Internet) among existing users.
- **Targeting customers using Electronic Check** with personalized offers or easier payment alternatives.
- **Cross-selling additional services** like Tech Support and Streaming TV to vulnerable customer segments.